City of Belvedere

General Plan 2030

Volume Three: Technical Report and Appendices

Adopted by the Belvedere City Council

June 9, 2010

www.cityofbelvedere.org

Technical Reports and Appendices in This Volume

2009 Resident Survey**,** prepared by Godbe Research

Biological Technical Report: City of Belvedere General Plan Update**,** prepared by WRA Environmental Consultants

Evaluation of Cultural Resources and a Legislative Overview for the City of Belvedere General Plan Update**,** prepared by Archaeological Resource Services (ARS)

Geologic Hazards and Mitigation Measures**,** prepared by ENGEO Incorporated

Noise Background Report for the Belvedere General Plan Update, prepared by AMBIENT Air Quality and Noise Consulting

Richardson Bay Special Area Plan**,** San Francisco Bay Conservation and Development Commission

Sustainable Belvedere: Greenhouse Gas Emissions Inventory, Municipal & Community Scale Analysis Base Year 2005**,** prepared by Christine O'Rourke, Metropolitan Planning Group, and Plan B Municipal Consulting

Traffic and Circulation Analysis for the Belvedere General Plan Update**,** prepared by Crane Transportation Group (CTG)

Initial Study/Mitigated Negative Declaration for City of Belvedere Housing Element Update and General Plan Update, prepared by Pacific Municipal Consultants

Notice of Determination for City of Belvedere Housing Element Update and General Plan Update

Letters received in response to the March 5, 2010, Public Review Draft.

City of Belvedere City Council Resolution Nos. 2010-15 and 2010-16, adopted June 9, 2010.

City of Belvedere

General Plan Update: Resident Survey

September 2009

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GODBE RESEARCH
Gain Insight

Overview and Research Objectives

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The City of Belvedere commissioned Godbe Research to conduct a survey of residents to help inform the City's General Plan Update. The survey was conducted with the following research objectives:

a) Survey resident satisfaction with the overall quality of life in the city;

b) Assess the importance of local issues;

c) Gather resident feedback on residential and commercial development, parks and recreation facilities and services, and transportation and commuting issues; and

d) Identify differences in opinions due to demographic and/or behavioral characteristics.

Methodology Overview

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➢ Data Collection	Mail Survey
➢ Universe	1,701 Adult Residents in the City of Belvedere
➢ Fielding Dates	July 17 through August 13, 2009
➢ Survey Length	27 Questions
➢ Sample Size	400
➢ Margin of Error	± 4.3%

Note: The data have been weighted to reflect the actual adult population characteristics of the City of Belvedere (based on the 2000 U.S. Census) in terms of gender and age.

Executive Summary

Executive Summary
Local Issues

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- Residents have an overwhelmingly positive opinion of the quality of life in Belvedere.
  - More than 9 out of 10 residents reported being “very satisfied” (82%) or “somewhat satisfied” (13%) with the quality of life.
  - Satisfaction with the quality of life was high across demographic subgroups, with particularly high satisfaction among residents ages 65 and over.
  - Godbe Research has asked this question in surveys for a number of California cities in recent years, and the overall satisfaction level indicted by Belvedere residents is among the highest to date.
- The survey found that a diverse set of issues are important for the future; however, issues related to growth and development emerged as a priority.
  - In an open-ended question, a number of the responses related to growth and development, including: maintaining the character of the community (21%), controlling the size of houses (14%), managing growth and development (8%), and strict enforcement of building codes and design guidelines (2%).
  - Additionally, more than three-quarters of the residents rated the following as “very” or “extremely important”: preserving Belvedere’s unique character, preserving residential scenic views, preservation of open spaces, and managing growth and development.

Executive Summary

Residential and Commercial Development

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- The survey found that residents have mixed opinions toward development in Belvedere.
  - Approximately 3 out of 4 residents indicated that they would support the development of small shops, restaurants, and services, and single-family homes.
  - Residents were roughly split regarding the development of mixed-use buildings and second units to single-family homes – half would support and half would oppose.
  - Finally, approximately 3 out of 4 residents would oppose the development of high-density housing, such as condominiums and apartments.
- When considering the new homes and additions to existing homes that have been built in Belvedere within the past 10 years, 46 percent of the residents indicated that these homes are “too large,” and 53 percent rated these homes as “the right size.”
- Approximately two-thirds of the residents would support an absolute limit, without exception, on the maximum house size permitted by the City which would be based on the size of the property.
  - Support for an absolute limit was higher among the women, the older residents, and the residents who rated recently constructed homes as “too large.”
- Additionally, two-thirds of the residents support the current zoning ordinance that can be used to grant a license to property owners to allow private fences along streets and roadways and on other public land.

Executive Summary

Parks and Recreation Facilities and Services

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- The results suggest that recreational programs and facilities are moderately important to residents, in the context of other local issues.
  - Approximately 2 out of 5 residents rated providing recreational programs and facilities as “very” or “extremely important.”
  - Similarly, 2 out of 5 residents reported that a member of their household had attended a recreation program, class or event sponsored by Belvedere-Tiburon Recreation in the past 12 months.
  - Attendance of recreation programs was higher among the younger residents and those with children in their household.
- Residents are highly satisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon.
  - Roughly 9 out of 10 residents reported being “very satisfied” (44%) or “somewhat satisfied” (46%) with the availability of programs.
  - On average, the residents rated the availability of children, teen, and adult programs as approximately “somewhat important.”
  - Ratings of recreation programs varied according to household demographics. More specifically, the older residents rated adult programs as more important, and the younger residents rated programs for children and teens as more important.

Executive Summary
Transportation and Commuting

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Gain Insight

- The results suggest that reducing traffic congestion within the City of Belvedere is relatively less important to residents, in the context of other local issues.
  - Approximately one-third of the residents rated reducing traffic congestion as “very” or “extremely important.”
  - Just 12 percent of the residents described traffic safety or congestion as the most important issue for the future of Belvedere.
  - Approximately 3 out of 4 residents indicated a positive rating for traffic flow.
  - In comparison, more than 4 out of 5 residents considered it “very” or “extremely important” to encourage local parents to carpool or use school bus service to improve traffic flow along Tiburon Boulevard.
- The survey revealed the following information on residents’ commuting attributes:
  - By a wide margin, the residents most frequently reported that they drive alone (90%).
  - The survey suggests that the average commute time for Belvedere residents continues to be similar to that of Marin County residents as a whole.
  - A majority of the residents reported that their work or school is located in San Francisco County (33%) or Marin County (32%).
- Close to 2 out of 5 residents reported that they or a member of their household would be likely to ride a shuttle service from Belvedere to Highway 101.

Detailed Findings

Satisfaction with Quality of Life

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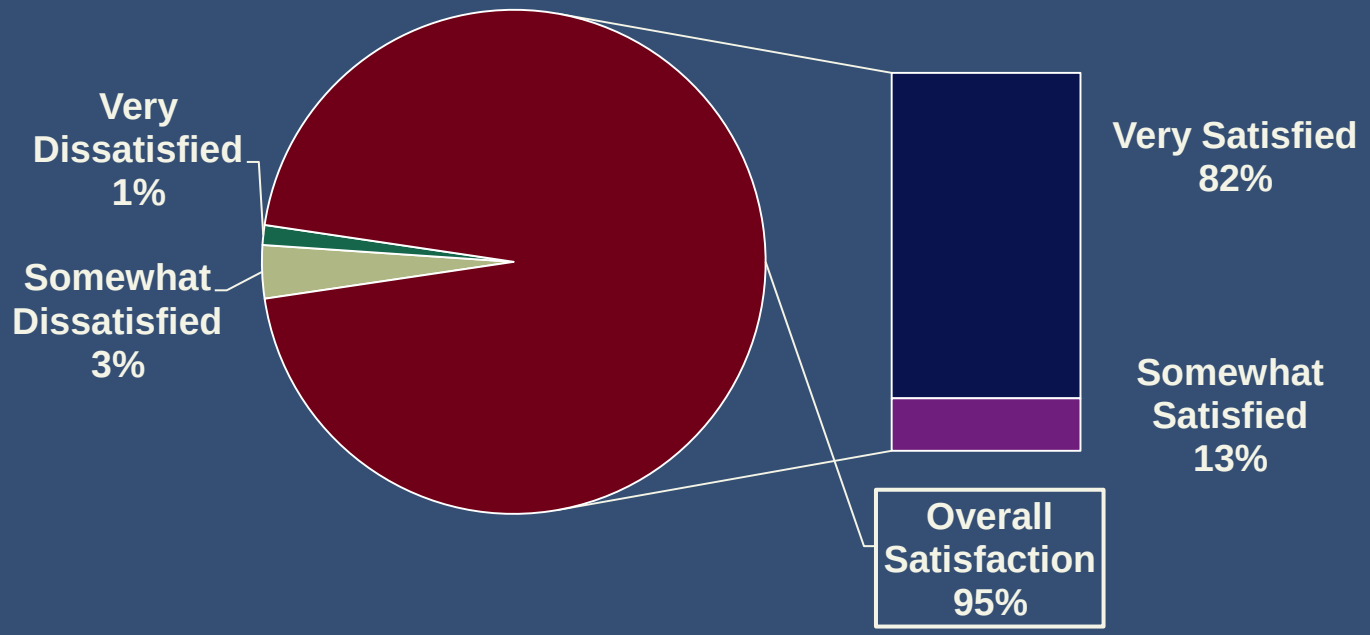
The results indicate that Belvedere residents have an overwhelmingly positive opinion of the quality of life in the city. More than 9 out of 10 residents reported being “very satisfied” (82%) or “somewhat satisfied” (13%), whereas just 4 percent indicated that they are dissatisfied. Godbe Research has asked this question in surveys for a number of California cities in recent years, and the overall satisfaction level indicated by Belvedere residents is among the highest to date. (n = 378)



Satisfaction with Quality of Life

Subgroup Differences

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The following table shows differences in satisfaction with quality of life between key demographic subgroups (age). Satisfaction with quality of life in the City of Belvedere was high across demographic subgroups. Specifically, more than 9 out of 10 residents reported that they are satisfied, regardless of their age group. However, the residents ages 65 and over were significantly more likely to report being “very satisfied” with quality of life than their younger counterparts ages 45 to 54.

	Age			
	18 to 44	45 to 54	55 to 64	65 and over
Sample size (n)	82	82	84	125
Very Satisfied	86.5%	71.7%	80.3%	86.7%
Somewhat Satisfied	11.3%	18.9%	15.8%	9.5%
Somewhat Dissatisfied	2.3%	5.7%	2.6%	3.3%
Very Dissatisfied	.0%	3.8%	1.3%	.5%

Note: Significant differences at the 95% confidence level between subgroups on any given survey item are denoted by colors: a **blue** mean score or percentage figure is statistically higher than a **red** number between comparative groups, e.g., male vs. female, etc.

Important Issues for the Future

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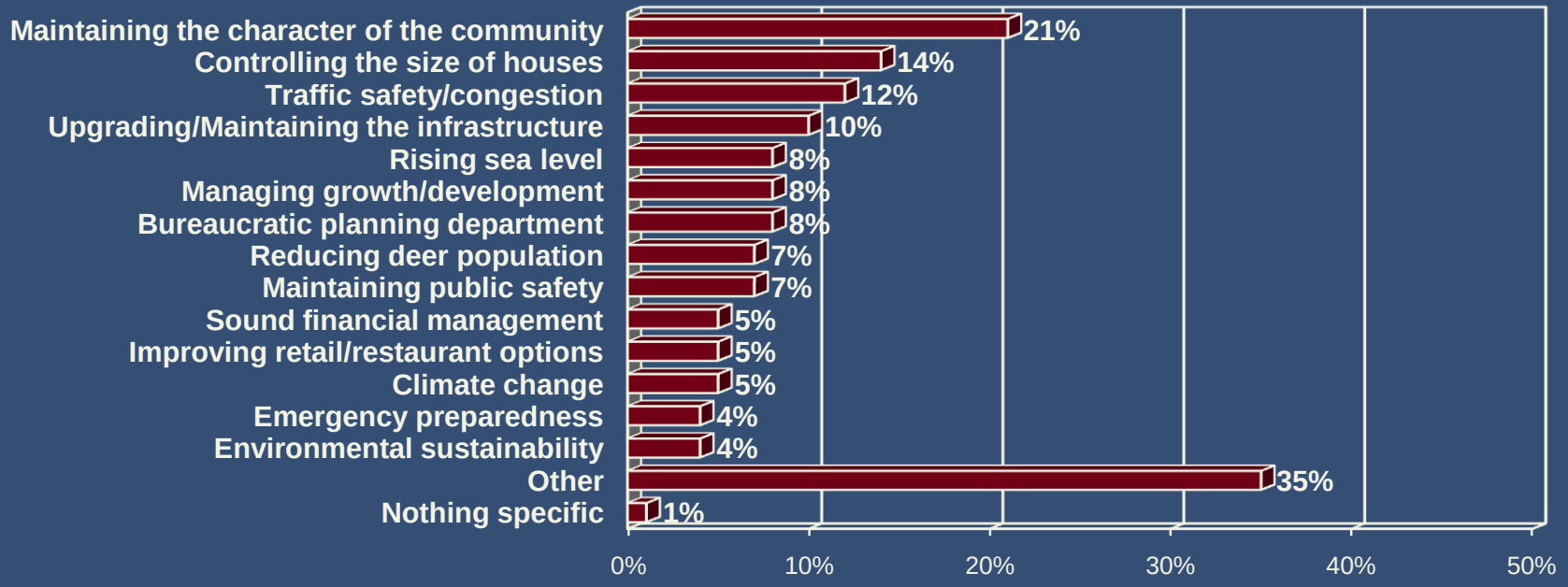
The mail survey included space for the residents to describe the most important issue for the future of the City of Belvedere. These written responses were grouped into the categories shown in the following chart. Overall, the residents described a diverse set of issues, and no single issue was mentioned by more than one-quarter of the respondents. However, a number of the responses related to growth and development issues, including: maintaining the character of the community (21%), controlling the size of houses (14%), managing growth and development (8%), and strict enforcement of building codes or design guidelines (2%). (n = 278)



Note: Issues that were mentioned by less than 4 percent of the respondents have been grouped in the "Other" category for charting purposes.
Please refer to the Topline report for the detailed list of responses to this question.

Important Issues for the Future

Subgroup Differences

GODBE RESEARCH
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A higher percentage of residents ages 18 to 44 citing rising sea level as the most important issue for the future. In contrast, a higher percentage of residents ages 45 to 54 cited upgrading or maintaining the infrastructure, and controlling the size of houses was mentioned more frequently by residents ages 65 and over. The residents who do not have children in their household more frequently mentioned the character of the community, controlling the size of houses, and traffic. Finally, the residents of Belvedere Lagoon were more likely to cite rising sea level than the residents of Belvedere Island.

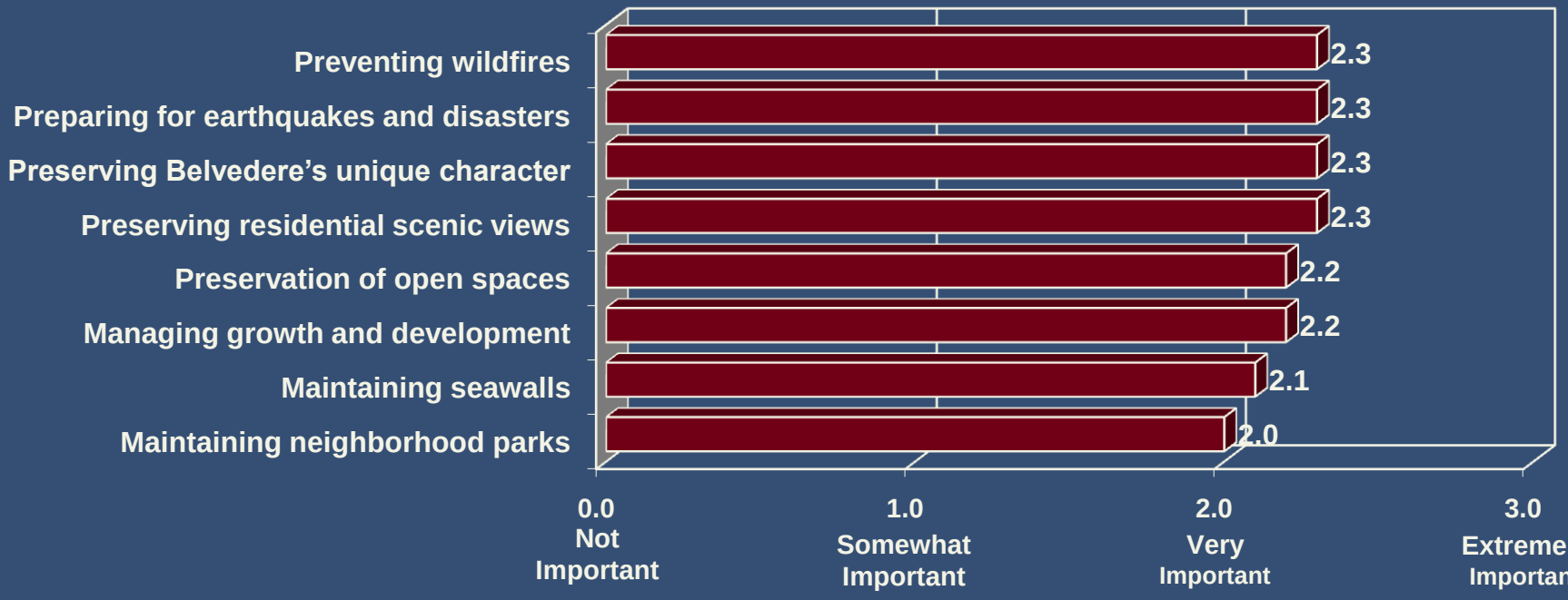
	Age				Children in the Household		Area of Residence	
	18 to 44	45 to 54	55 to 64	65 and over	Yes	No	Belvedere Island	Belvedere Lagoon
Sample size (n)	41	67	68	99	87	189	141	107
Maintaining the character of the community	9.1%	16.3%	29.0%	23.4%	**13.0%**	**24.9%**	25.0%	19.4%
Controlling the size of houses	4.5%	**4.7%**	17.7%	**19.2%**	**5.7%**	**17.0%**	13.0%	16.3%
Traffic safety/congestion	4.5%	11.6%	12.9%	14.4%	**3.0%**	**15.9%**	9.7%	13.3%
Upgrading/maintaining the infrastructure	9.1%	**23.3%**	**6.5%**	**3.6%**	9.2%	10.1%	10.5%	8.6%
Rising sea level	**22.7%**	**4.7%**	9.7%	**2.4%**	12.1%	5.7%	**3.7%**	**15.1%**
Managing growth/development	.0%	9.3%	9.7%	7.2%	3.6%	9.4%	7.3%	9.4%
Bureaucratic planning department	13.6%	7.0%	9.7%	6.0%	10.1%	7.4%	8.5%	8.6%

Note: Significant differences at the 95% confidence level between subgroups on any given survey item are denoted by colors: a **blue** mean score or percentage figure is statistically higher than a **red** number between comparative groups, e.g., male vs. female, etc.

Relative Importance of Local Issues

GODBE RESEARCH
Gain Insight

To understand community priorities, the residents were asked to rate the importance of 18 local issues. Shown in the chart below are the eight issues that earned the relatively highest importance ratings. Preventing wildfires, ensuring the City is prepared for an earthquake and other disasters, preserving Belvedere's unique character, and preserving residential scenic views emerged as the most important issues, and approximately 4 out of 5 residents rated these as "very" or "extremely important." Although preventing wildfires was among the relatively most important issues in this question, it did not emerge as a priority in the previous question. This difference in results most likely reflects that the residents are satisfied with the City's efforts in this area, and the issue does not come to mind as one that needs to be further addressed in the future. (n = 386 to 397)

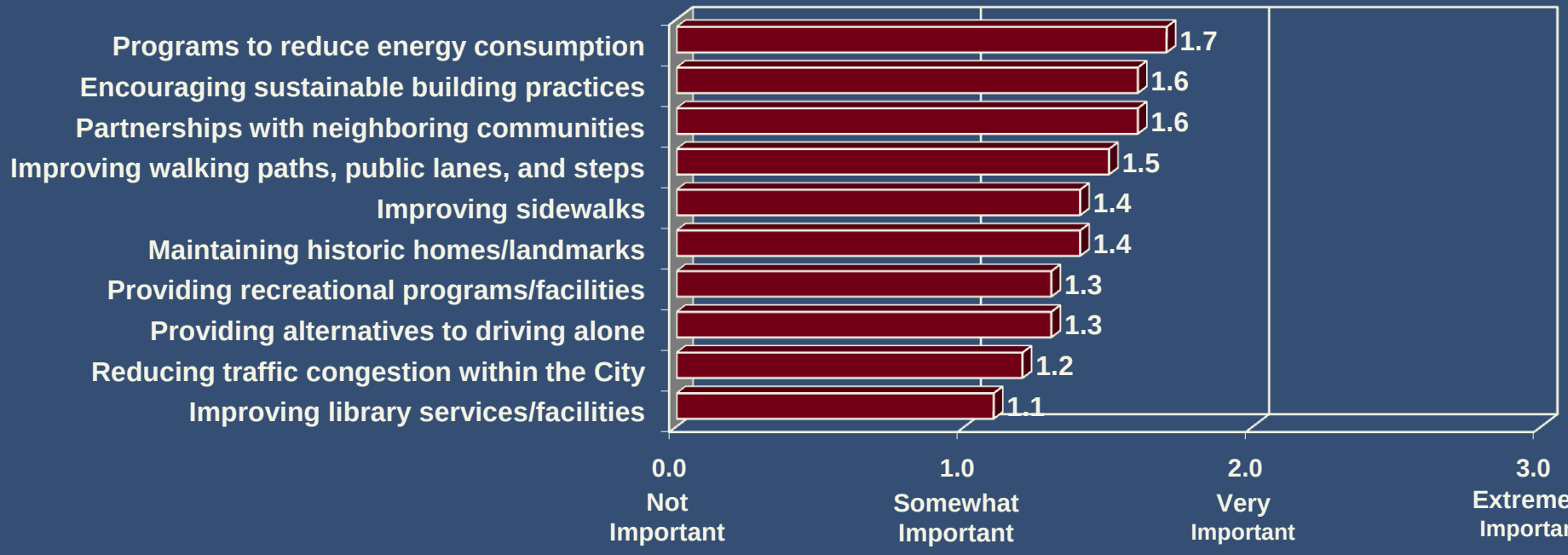


Note: The above rating questions have been abbreviated for charting purposes; for the exact wording, please see the Topline report. The responses were recoded to calculate mean scores: "Extremely Important" = +3, "Very Important" = +2, "Somewhat Important" = +1, and "Not Important" = 0.

Relative Importance of Local Issues

GODBE RESEARCH
Gain Insight

Here is a continuation of the responses on the importance of local issues. Although these 10 issues earned relatively lower importance scores, the average resident rated these as between "somewhat" and "very important." To put these mean scores in perspective, 57 percent of the residents indicated a rating of "very" or "extremely important" for providing programs to reduce energy consumption and conserve natural resources, whereas 31 percent of the residents indicated a rating of "very" or "extremely important" for improving Belvedere-Tiburon Library services and facilities. Taken as a whole, the results of this section of the survey suggest that issues related to growth and development are a priority to residents. (n = 386 to 397)



Note: The above rating questions have been abbreviated for charting purposes; for the exact wording, please see the Topline report. The responses were recoded to calculate mean scores: "Extremely Important" = +3, "Very Important" = +2, "Somewhat Important" = +1, and "Not Important" = 0.

Relative Importance of Local Issues

Subgroup Differences

GODBE RESEARCH
Gain Insight

Importance ratings tended to be higher among the women than the men, particularly for preventing wildfires, preserving Belvedere's unique character, and preservation of open spaces. A similar pattern emerged as a factor of age, with the older residents rating several issues as more important than the younger residents. More specifically, the residents ages 55 and over rated the following as more important than their younger counterparts: preserving Belvedere's unique character, preservation of open spaces, and managing growth and development.

	Gender		Age			
	Male	Female	18 to 44	45 to 54	55 to 64	65 and over
Preventing wildfires	**2.2**	**2.4**	2.2	2.2	2.2	2.5
Ensuring the City is prepared for an earthquake and other disasters	2.3	2.3	2.1	2.3	2.3	2.4
Preserving Belvedere's unique character	**2.2**	**2.3**	**2.0**	**2.1**	**2.5**	**2.4**
Preserving residential scenic views	2.2	2.3	2.2	2.2	2.4	2.2
Preservation of open spaces	**2.1**	**2.3**	**2.0**	2.3	**2.4**	2.3
Managing growth and development	2.1	2.2	**1.8**	2.1	**2.4**	**2.3**
Maintaining seawalls and infrastructure for storm-related flooding	2.0	2.2	2.0	2.0	2.1	2.3
Maintaining neighborhood parks	2.0	2.1	2.0	2.1	2.0	2.0

Note: Significant differences at the 95% confidence level between subgroups on any given survey item are denoted by colors: a **blue** mean score or percentage figure is statistically higher than a **red** number between comparative groups, e.g., male vs. female, etc.

Relative Importance of Local Issues

Subgroup Differences

GODBE RESEARCH
Gain Insight

The residents with children in their household rated the City's disaster preparedness as more important, whereas the residents who do not have children in their household rated preventing wildfires, preserving Belvedere's unique character, and preserving residential scenic views as more important. Two issues were rated as more important by the residents of Belvedere Lagoon: disaster preparedness and maintaining seawalls and infrastructure for storm-related flooding.

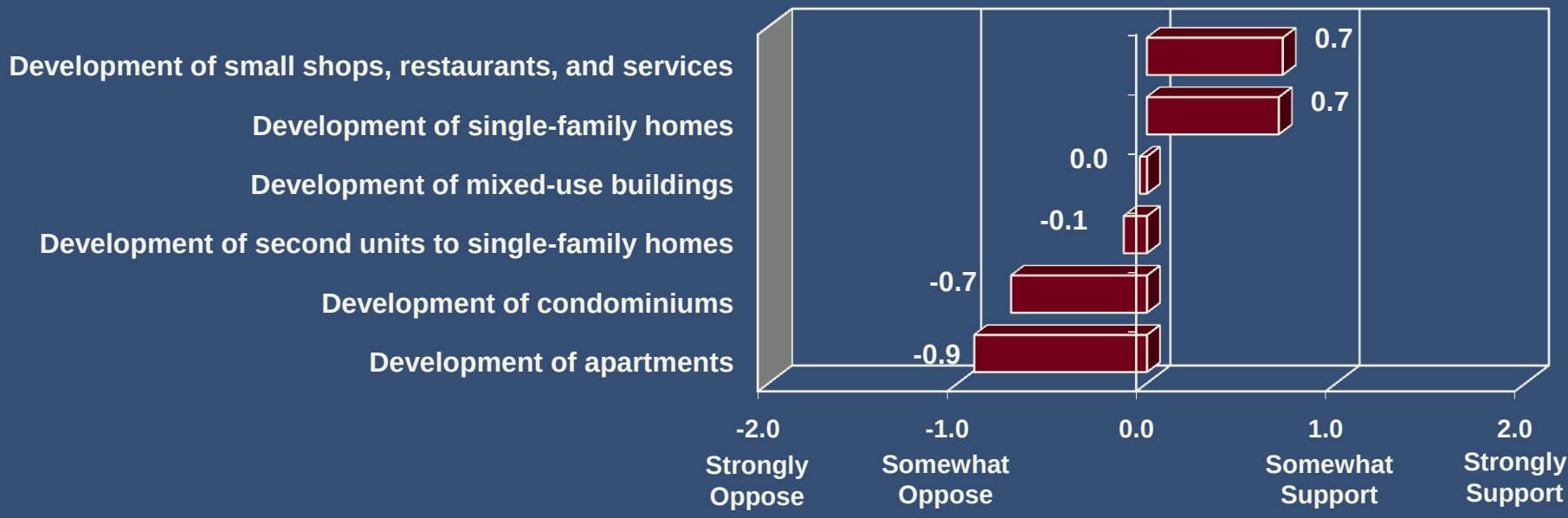
	Children in the Household		Area of Residence	
	Yes	No	Belvedere Island	Belvedere Lagoon
Preventing wildfires	2.1	2.4	2.2	2.3
Ensuring the City is prepared for an earthquake and other disasters	2.5	2.2	2.1	2.4
Preserving Belvedere's unique character	2.0	2.4	2.3	2.3
Preserving residential scenic views	2.0	2.3	2.3	2.1
Preservation of open spaces	2.1	2.3	2.2	2.3
Managing growth and development	2.1	2.2	2.1	2.2
Maintaining seawalls and infrastructure for storm-related flooding	2.1	2.1	1.9	2.5
Maintaining neighborhood parks	2.1	2.0	2.0	2.1

Note: Significant differences at the 95% confidence level between subgroups on any given survey item are denoted by colors: a **blue** mean score or percentage figure is statistically higher than a **red** number between comparative groups, e.g., male vs. female, etc.

Residential and Commercial Development

GODBE RESEARCH
Gain Insight

The survey assessed residents' attitudes toward development in Belvedere. In the following chart, positive scores indicate overall support for that type of development, and negative scores indicate overall opposition. On average, the residents indicated moderate support for the development of small shops, restaurants, and services and single-family homes. More specifically, three-quarters of the residents indicated that they would support such development, whereas one-quarter indicated that they would oppose. The residents were roughly split regarding the development of mixed-use buildings and second units to single-family homes, with approximately half in support and half in opposition. Finally, the residents generally opposed the development of condominiums and apartments. Although approximately one-quarter of the residents would support the development of high-density housing, three-quarters would oppose such development. (n = 356 to 380)



Note: The above rating questions have been abbreviated for charting purposes; for the exact wording, please see the Topline report. The responses were recoded to calculate mean scores: "Strongly Support" = +2, "Somewhat Support" = +1, "Somewhat Oppose" = -1, and "Strongly Oppose" = -2.

Residential and Commercial Development

Subgroup Differences

GODBE RESEARCH
Gain Insight

The younger residents showed more support for development of mixed-use buildings. Additionally, support for development of second units to single-family homes was higher among the residents ages 45 to 54, and support for development of single-family homes was higher among the residents ages 45 to 54 and 65 and over.

To better understand resident attitudes, support for development of single-family homes was used to segment support for other types of development. As might be expected, the residents who support the development of single-family homes also tended to be less opposed to other types of development. At the same time, the residents were generally opposed to the development of high-density housing, regardless of their attitudes toward development of single-family homes.

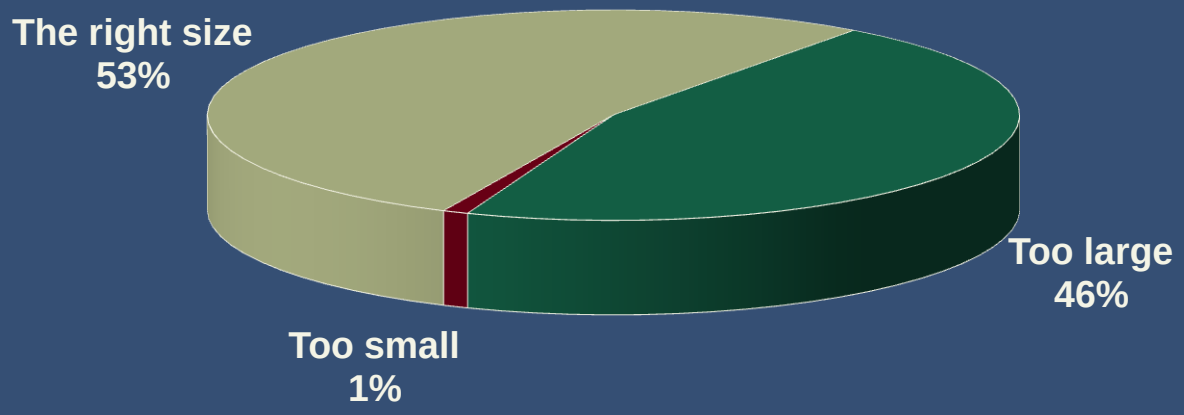
	Age				Development of Single-Family Homes		
	18 to 44	45 to 54	55 to 64	65 and over	Strongly Support	Somewhat Support	Oppose
Development of small shops, restaurants, and services	1.0	.8	.8	.5	.6	.9	.4
Development of single-family homes	.5	**.9**	**.3**	**.9**	--	--	--
Development of mixed-use buildings with shops or services on the first floor and condominiums on the upper floors	**.5**	.1	**-.2**	**-.4**	-.1	**.2**	**-.6**
Development of second units to single-family homes	-.2	**.3**	**-.3**	**-.2**	**.2**	**.1**	**-1.0**
Development of condominiums	-.7	-.7	-.7	-.7	**-.7**	**-.4**	**-1.3**
Development of apartments	-.9	-.9	-.9	-1.0	**-1.0**	**-.6**	**-1.4**

Note: Significant differences at the 95% confidence level between subgroups on any given survey item are denoted by colors: a **blue** mean score or percentage figure is statistically higher than a **red** number between comparative groups, e.g., male vs. female, etc.

Size of Homes Recently Constructed

GODBE RESEARCH
Gain Insight

When considering the new homes and additions to existing homes that have been built in Belvedere within the past 10 years, 46 percent of the residents indicated that these homes are “too large,” whereas 53 percent of the residents thought that these homes are “the right size.” (n = 386)



Size of Homes Recently Constructed

Subgroup Differences

GODBE RESEARCH
Gain Insight

The residents who reported that the homes built within the past 10 years are “the right size” were more likely to be men and ages 18 to 54. Conversely, the residents who reported that these homes are “too large” were more likely to be women and ages 55 and over. Interestingly, attitudes toward home size were not influenced by support for development of single-family homes. This result suggests that attitudes toward development of single-family homes and attitudes toward the size of homes tend to be independent of one another.

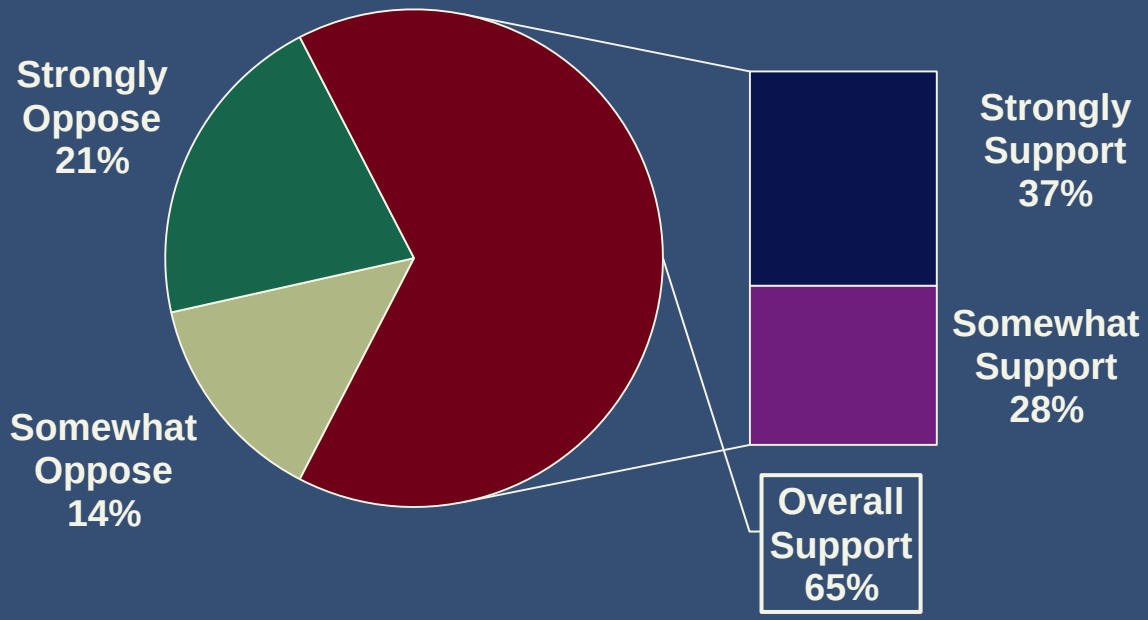
	Gender		Age				Development of Single-Family Homes		
	Male	Female	18 to 44	45 to 54	55 to 64	65 and over	Strongly Support	Somewhat Support	Oppose
Sample size (n)	173	208	81	86	88	127	105	157	86
Too small	1.0%	1.0%	.0%	1.8%	.0%	1.9%	2.0%	1.1%	.0%
The right size	61.0%	48.2%	77.3%	65.5%	47.5%	35.0%	52.5%	56.4%	47.7%
Too large	38.0%	50.8%	22.7%	32.7%	52.5%	63.1%	45.5%	42.5%	52.3%

Note: Significant differences at the 95% confidence level between subgroups on any given survey item are denoted by colors: a **blue** mean score or percentage figure is statistically higher than a **red** number between comparative groups, e.g., male vs. female, etc.

Support for Absolute Limit on House Size

GODBE RESEARCH
Gain Insight

Approximately two-thirds of the residents would support an absolute limit, without exception, on the maximum house size permitted by the City which would be based on the size of the property, whereas one-third of the residents indicated that they would oppose an absolute limit. (n = 390)



Support for Absolute Limit on House Size

Subgroup Differences

GODBE RESEARCH
Gain Insight

In keeping with attitudes toward the size of recently constructed homes, the respondents who were in support of an absolute limit, without exception, on the maximum house size permitted by the City were more likely to be women and older residents. Support for an absolute limit also was higher among the residents who rated recently constructed homes as "too large," and the residents who were less supportive of the development of single-family homes in general.

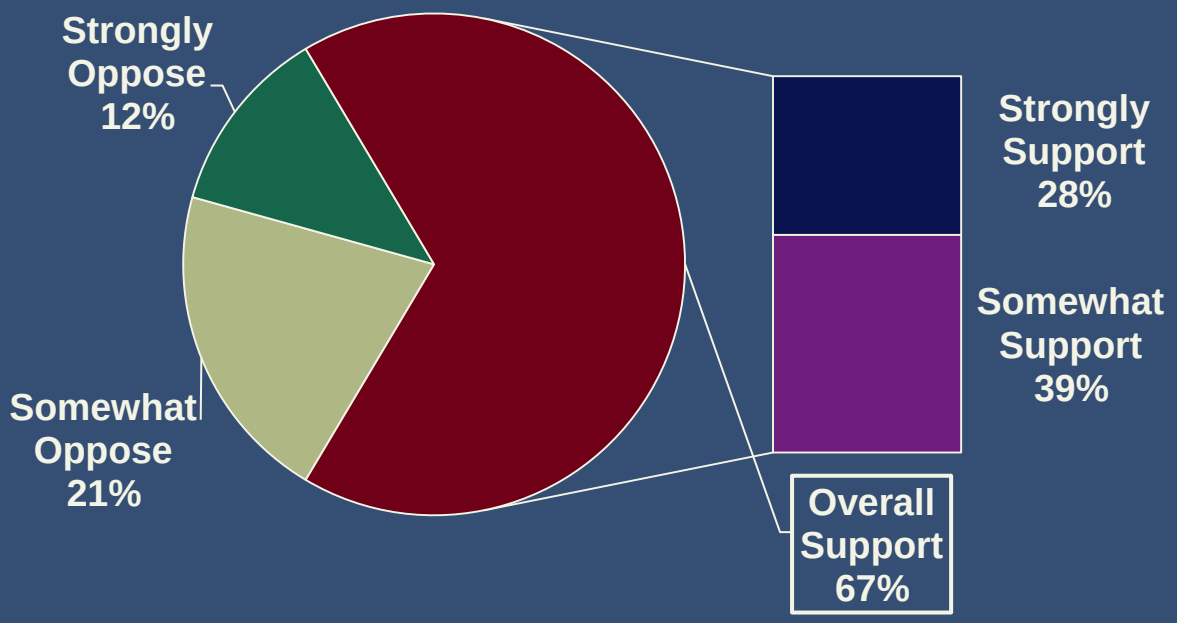
	Gender		Age				Attitude toward Home Size		Development of Single-Family Homes		
	Male	Female	18 to 44	45 to 54	55 to 64	65 and over	Right Size	Too Large	Strongly Support	Somewhat Support	Oppose
Sample size (n)	177	208	82	84	89	130	203	175	108	159	84
Strongly Support	**32.5%**	**42.3%**	**11.3%**	**29.6%**	**44.4%**	**55.7%**	**15.9%**	**63.3%**	41.7%	30.3%	42.0%
Somewhat Support	24.2%	30.3%	**45.8%**	**20.4%**	**24.7%**	**21.9%**	30.5%	25.9%	**17.7%**	**38.4%**	25.7%
Somewhat Oppose	**18.3%**	**9.6%**	11.3%	20.4%	11.1%	12.3%	**19.4%**	**7.5%**	9.0%	14.1%	15.9%
Strongly Oppose	25.1%	17.9%	**31.6%**	**29.6%**	19.8%	**10.0%**	**34.2%**	**3.3%**	**31.6%**	**17.1%**	**16.4%**

Note: Significant differences at the 95% confidence level between subgroups on any given survey item are denoted by colors: a **blue** mean score or percentage figure is statistically higher than a **red** number between comparative groups, e.g., male vs. female, etc.

Support for Private Fences on Public Land

GODBE RESEARCH
Gain Insight

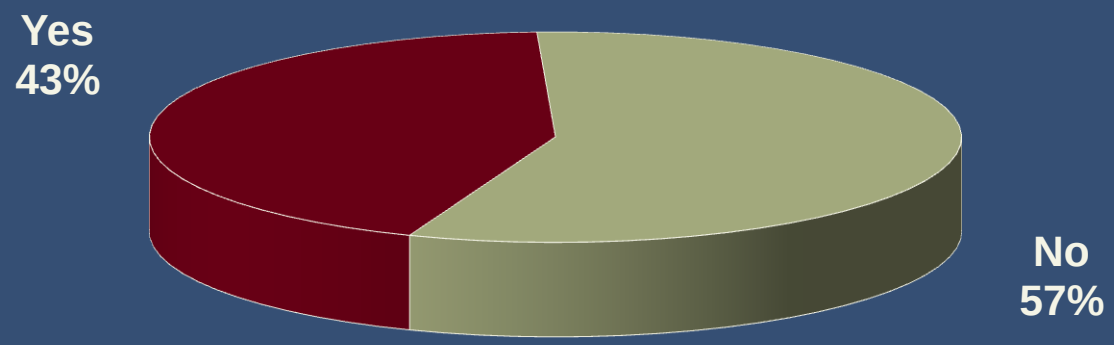
Approximately two-thirds of the residents support the current zoning ordinance that can be used to grant a license to property owners to allow private fences along streets and roadways and on other public land. In comparison, one-third of the residents indicated that they oppose this practice. (n = 368)



Recreation Program Attendance

GODBE RESEARCH
Gain Insight

Just under half of the residents reported that they or a member of their household had attended a recreation program, class, or event sponsored by Belvedere-Tiburon Recreation in the past 12 months. In comparison, 57 percent of the residents indicated that their household had not attended any programs. (n = 398)



Recreation Program Attendance

Subgroup Differences

GODBE RESEARCH
Gain Insight

The residents who reported that they or a member of their household had attended a recreation program, class or event sponsored by Belvedere-Tiburon Recreation within the past 12 months were more likely to be younger and have children in their household.

	Age				Children in the Household	
	18 to 44	45 to 54	55 to 64	65 and over	Yes	No
Sample size (n)	84	87	89	133	110	285
Yes	**55.2%**	**51.8%**	**32.1%**	39.7%	**70.0%**	**33.8%**
No	**44.8%**	**48.2%**	**67.9%**	60.3%	**30.0%**	**66.2%**

Note: Significant differences at the 95% confidence level between subgroups on any given survey item are denoted by colors: a **blue** mean score or percentage figure is statistically higher than a **red** number between comparative groups, e.g., male vs. female, etc.

Satisfaction with Availability of Programs

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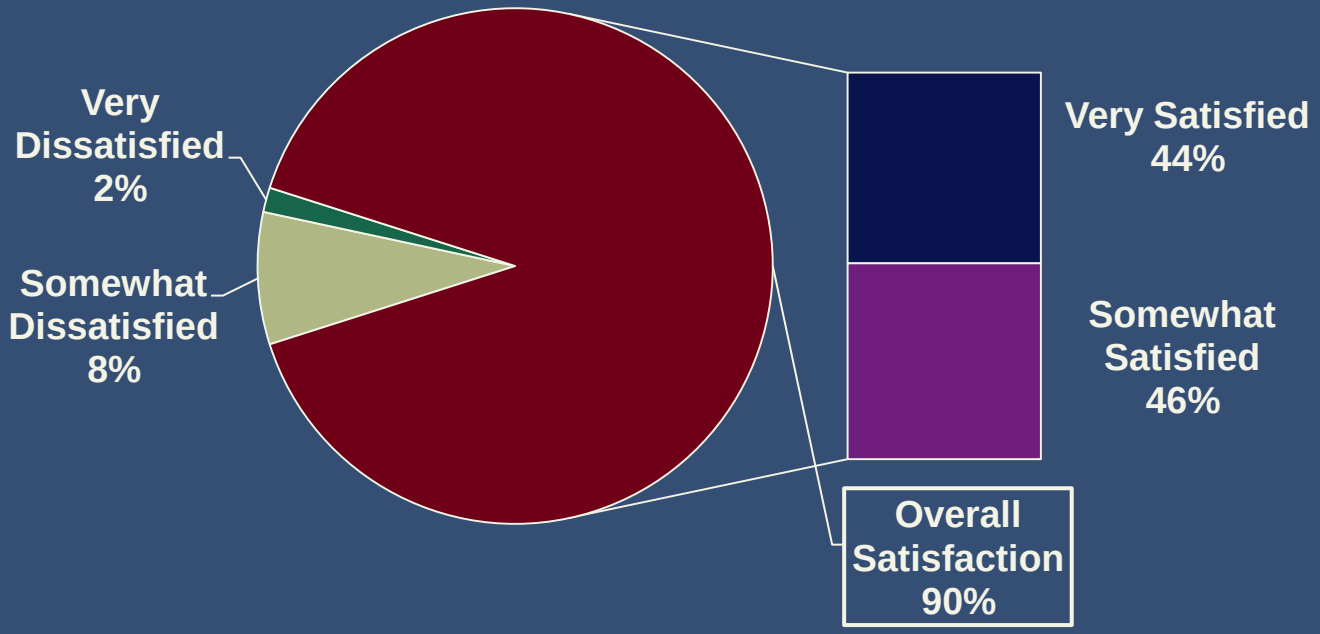
Gain Insight

Overall, 90 percent of the residents indicated that they are “very satisfied” (44%) or “somewhat satisfied” (46%) with the availability of recreation programs, classes and events in Belvedere and Tiburon. In comparison, just 10 percent of the residents were dissatisfied with the availability. This finding suggests that the moderate attendance of recreation programs, classes, and events found in the previous question does not necessarily reflect a lack of program availability. (n = 364)



Satisfaction with Availability of Programs

Subgroup Differences

GODBE RESEARCH
Gain Insight

The residents who do not have children in their household were just slightly less satisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon. As might be expected, the residents who had attended a recreation program were more satisfied with the availability of these programs than the residents who had not attended.

	Children in the Household		Attended recreation program	
	Yes	No	Yes	No
Sample size (n)	107	256	172	192
Very Satisfied	51.4%	41.7%	**62.0%**	**28.5%**
Somewhat Satisfied	45.6%	45.8%	**34.4%**	**56.0%**
Somewhat Dissatisfied	**3.0%**	**10.5%**	**3.6%**	**12.5%**
Very Dissatisfied	.0%	2.0%	.0%	2.9%

Note: Significant differences at the 95% confidence level between subgroups on any given survey item are denoted by colors: a **blue** mean score or percentage figure is statistically higher than a **red** number between comparative groups, e.g., male vs. female, etc.

Importance of Recreation Programs

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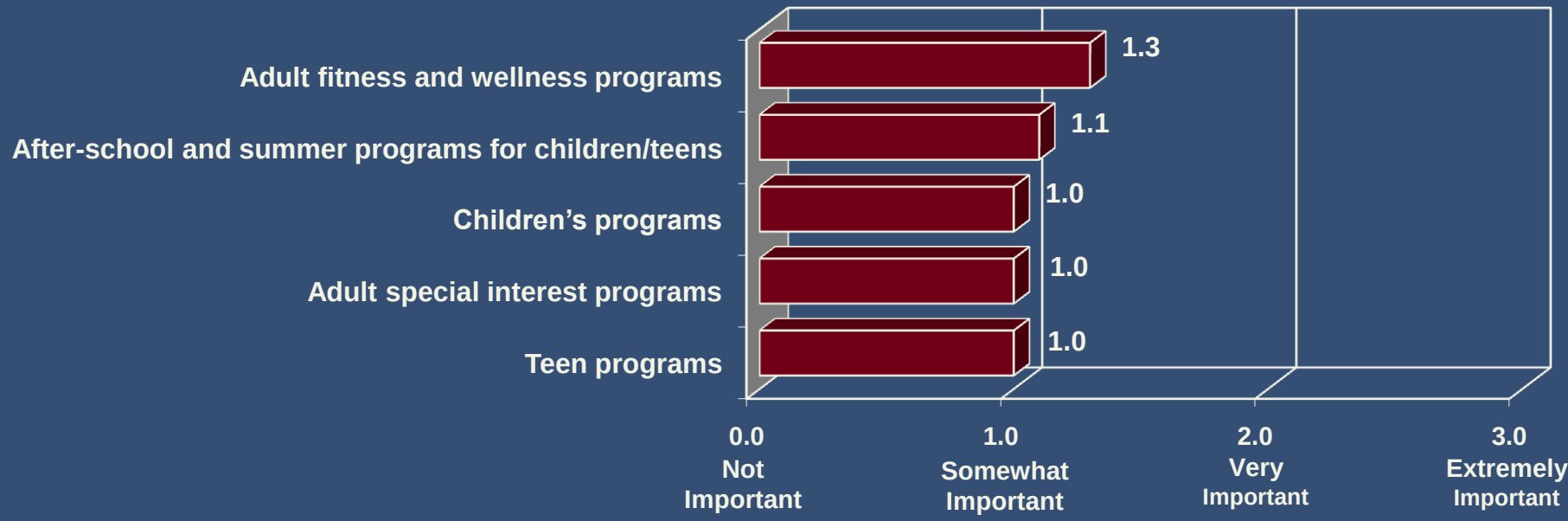
The survey presented five categories of recreational programs and classes, and asked the residents to rate the importance of the availability of each to their household. On average, each program category was rated as approximately "somewhat important," as indicated by mean scores near 1.0. Approximately 77 percent of the residents rated the availability of adult fitness and wellness programs, such as yoga or tennis, as at least somewhat important, whereas 54 percent of the residents rated the availability of teen programs as at least somewhat important. (n = 362 to 381)



Note: The above rating questions have been abbreviated for charting purposes; for the exact wording, please see the Topline report. The responses were recoded to calculate mean scores: "Extremely Important" = +3, "Very Important" = +2, "Somewhat Important" = +1, and "Not Important" = 0.

Importance of Recreation Programs
Subgroup Differences

GODBE RESEARCH
Gain Insight

As shown in the following table, the availability of programs for youth tended to be more important to the men, the younger residents, and the residents with children in their household. Conversely, the availability of programs for adults tended to be more important to the women, the older residents, and the residents who do not have children in their household. Finally, the residents who had attended a recreation program rated the availability of all five program categories as more important than their counterparts who had not attended.

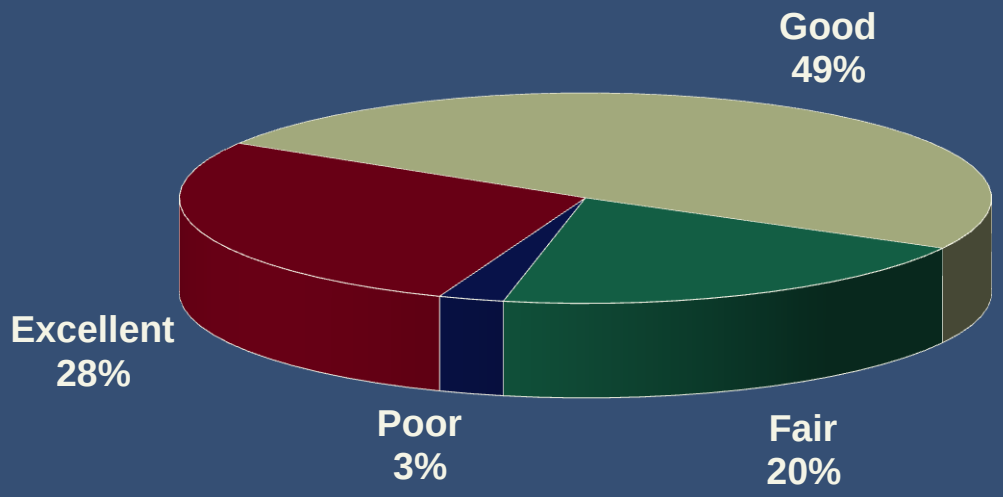
	Gender		Age				Children in the Household		Attended recreation program	
	Male	Female	18 to 44	45 to 54	55 to 64	65 and over	Yes	No	Yes	No
Adult fitness and wellness programs, such as yoga or tennis	1.1	1.4	1.2	1.2	1.4	1.2	1.1	1.3	1.4	1.2
After-school and summer programs for children and teens	1.2	1.0	1.6	1.1	.8	.8	1.8	.8	1.5	.7
Children's programs	1.2	.9	1.5	1.2	.7	.8	1.9	.7	1.5	.7
Adult special interest programs, such as bridge games or language classes	.8	1.2	.7	1.0	1.2	1.1	.8	1.1	1.2	.9
Teen programs	1.1	.9	1.2	1.0	.9	.9	1.4	.8	1.2	.8

Note: Significant differences at the 95% confidence level between subgroups on any given survey item are denoted by colors: a **blue** mean score or percentage figure is statistically higher than a **red** number between comparative groups, e.g., male vs. female, etc.

Traffic Flow within Belvedere

GODBE RESEARCH
Gain Insight

Approximately 3 out of 4 residents indicated a positive rating for traffic flow within the City of Belvedere. More specifically, 28 percent rated traffic flow as “excellent” and 49 percent rated it as “good.” On the other hand, 20 percent of the residents rated traffic flow as “fair,” and just 3 percent indicated a rating of “poor.” These results support the findings of earlier questions in the survey – just 12 percent of the residents described traffic safety or congestion as the most important issue for the future of Belvedere, and 34 percent of the residents rated reducing traffic congestion within the city as “very” or “extremely important.” (n = 393)



Traffic Flow within Belvedere

Subgroup Differences

GODBE RESEARCH
Gain Insight

A higher percentage of the women, the residents ages 18 to 44, and the residents of Belvedere Island rated traffic flow within Belvedere as "fair" when compared to their respective counterparts.

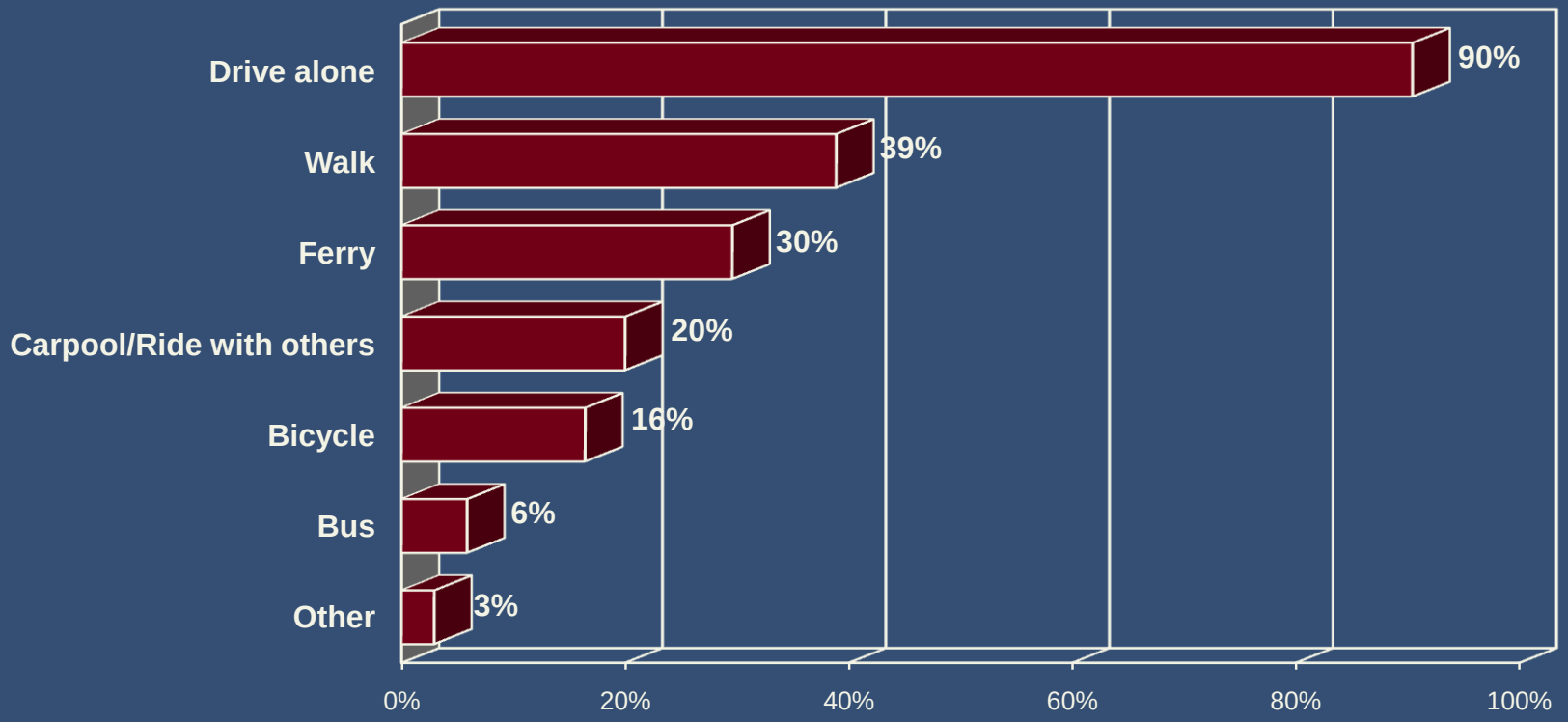
	Gender		Age				Area of Residence	
	Male	Female	18 to 44	45 to 54	55 to 64	65 and over	Belvedere Island	Belvedere Lagoon
Sample size (n)	173	215	84	84	89	131	217	141
Excellent	32.0%	24.7%	28.7%	37.0%	23.5%	24.0%	22.7%	35.1%
Good	52.4%	45.9%	24.3%	50.0%	56.8%	59.3%	46.4%	53.1%
Fair	12.4%	27.1%	40.4%	13.0%	18.5%	14.0%	29.2%	7.6%
Poor	3.2%	2.2%	6.6%	.0%	1.2%	2.7%	1.7%	4.2%

Note: Significant differences at the 95% confidence level between subgroups on any given survey item are denoted by colors: a **blue** mean score or percentage figure is statistically higher than a **red** number between comparative groups, e.g., male vs. female, etc.

Transportation Modes

GODBE RESEARCH
Gain Insight

By a wide margin, the residents most frequently reported that they drive alone to commute to work, school, or other places they visit most frequently. In a second tier of responses, 39 percent of the residents reported that they walk and 30 percent indicated that they take the ferry. (n = 391)



Transportation Modes
Subgroup Differences

GODBE RESEARCH
Gain Insight

Across key demographic subgroups, the most frequently reported transportation mode was “drive alone.” However, a higher percentage of the women than the men reported that they walk or carpool. Younger residents were more likely to indicate the ferry, bicycle, and bus than their older counterparts. Finally, the residents who rated traffic flow positively were more likely to report taking the ferry, whereas the residents who rated traffic flow negatively were more likely to report riding the bus or that they drive alone.

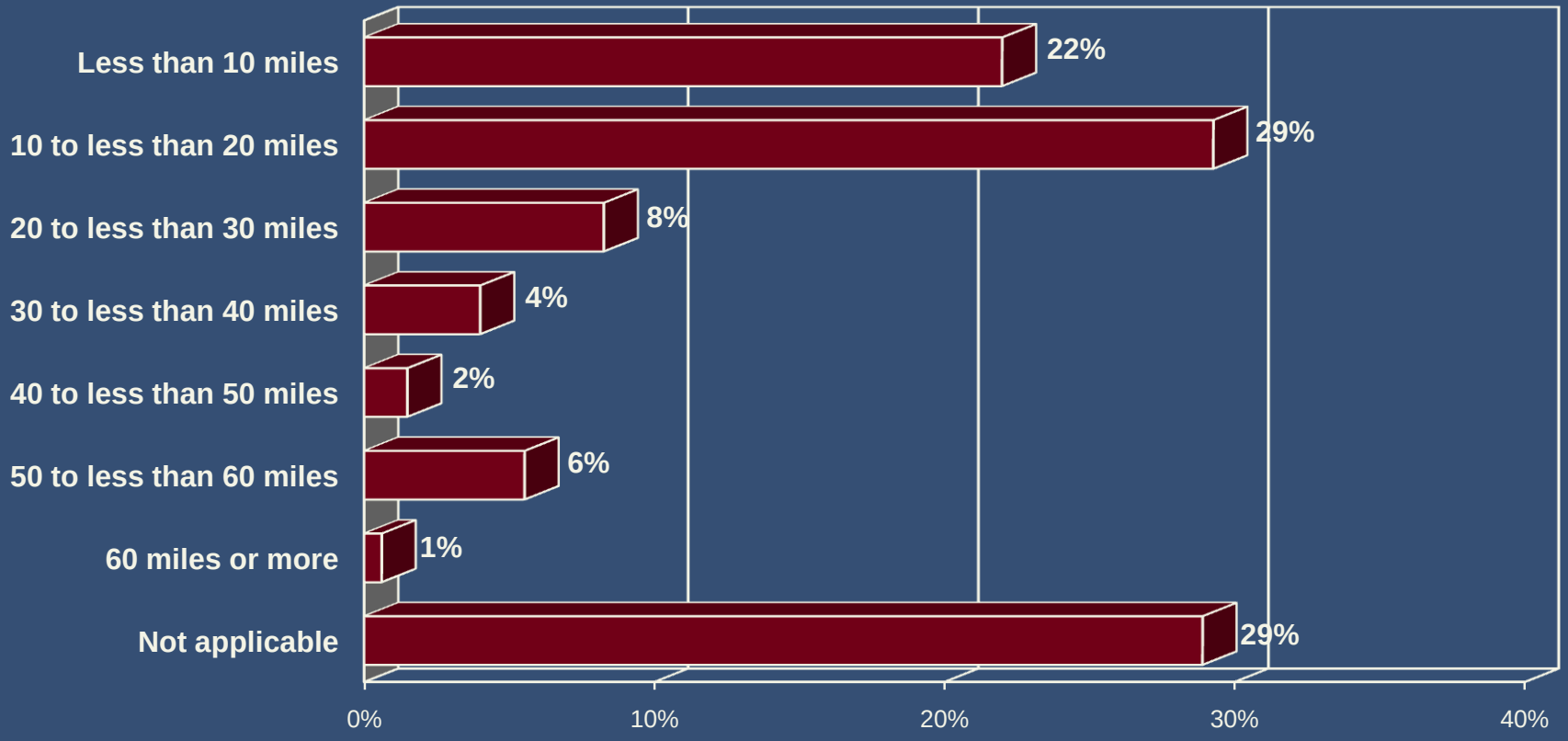
	Gender		Age				Traffic Flow Ratings		
	Male	Female	18 to 44	45 to 54	55 to 64	65 and over	Excellent	Good	Fair/Poor
Sample size (n)	174	212	84	86	87	130	105	193	90
Drive alone	89.0%	92.5%	95.6%	89.1%	86.1%	91.4%	93.3%	**86.1%**	**96.7%**
Walk	**32.8%**	**43.3%**	35.0%	32.7%	45.6%	41.4%	40.2%	38.0%	39.0%
Ferry	34.1%	25.1%	30.9%	**45.5%**	26.6%	**20.5%**	**38.0%**	**31.1%**	**16.8%**
Carpool/Ride with others	**14.5%**	**24.7%**	23.9%	23.6%	20.3%	15.5%	17.9%	19.6%	23.2%
Bicycle	16.9%	16.4%	19.5%	**29.1%**	**12.7%**	**9.1%**	17.7%	13.9%	19.5%
Bus	3.6%	7.8%	**17.3%**	**3.6%**	**2.5%**	**2.3%**	3.7%	**3.9%**	**12.1%**
Other	2.0%	3.7%	2.2%	3.6%	1.3%	4.1%	.6%	5.0%	1.3%

Note: Significant differences at the 95% confidence level between subgroups on any given survey item are denoted by colors: a **blue** mean score or percentage figure is statistically higher than a **red** number between comparative groups, e.g., male vs. female, etc.

Commute Distance

GODBE RESEARCH
Gain Insight

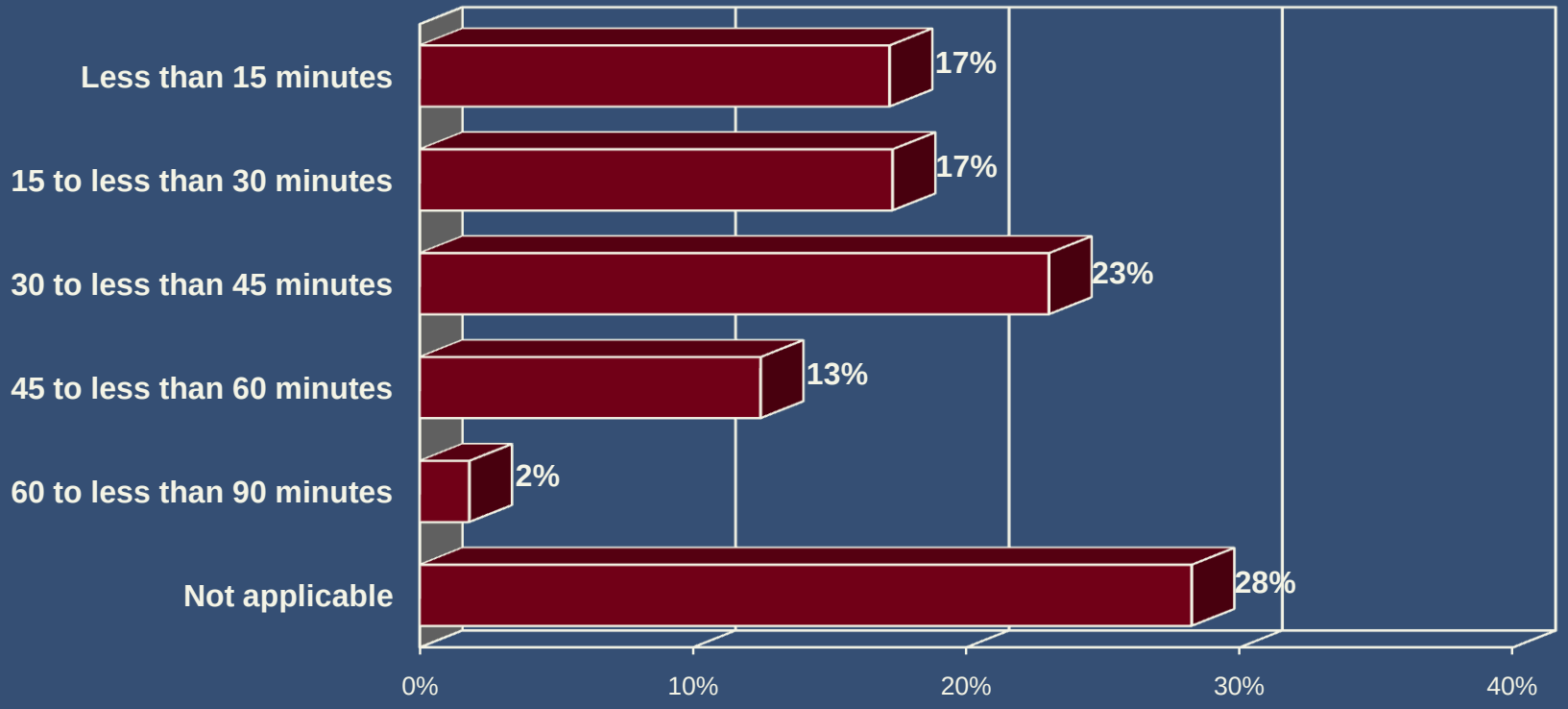
Approximately 22 percent of the residents reported a one-way commute from home to work or school of less than 10 miles. Another 29 percent indicated a one-way commute of 10 to less than 20 miles, and 21 percent of the residents indicated a one-way commute of 20 miles or more. Finally, 29 percent of the respondents indicated that the question was not applicable to them. (n = 367)



Commute Time

GODBE RESEARCH
Gain Insight

Overall, 34 percent of the residents reported that their one-way commute from home to work or school takes less than 30 minutes. Approximately 23 percent reported a commute of 30 to less than 45 minutes, and 15 percent indicated a commute of 45 minutes or more. The survey suggests that the average commute time for Belvedere residents continues to be similar to that of Marin County residents as a whole. The 2005-2007 American Community Survey conducted by the U.S. Census Bureau estimates that the average commute time for Marin County residents is just over 28 minutes.



Commute Distance and Time

Subgroup Differences

GODBE RESEARCH
Gain Insight

	Traffic Flow Ratings		
	Excellent	Good	Fair/Poor
Sample size (n)	101	177	86
Less than 10 miles	28.1%	22.0%	15.4%
10 to less than 20 miles	33.1%	27.3%	27.8%
20 to less than 30 miles	11.7%	6.1%	8.8%
30 to less than 40 miles	5.6%	3.4%	3.4%
40 to less than 50 miles	.0%	2.5%	1.3%
50 to less than 60 miles	1.5%	.0%	21.8%
60 miles or more	.0%	1.2%	.0%
Not applicable	20.0%	37.4%	21.4%

	Traffic Flow Ratings		
	Excellent	Good	Fair/Poor
Sample size (n)	101	175	84
Less than 15 minutes	27.7%	14.8%	10.1%
15 to less than 30 minutes	18.4%	21.5%	5.8%
30 to less than 45 minutes	30.0%	14.5%	32.9%
45 to less than 60 minutes	4.3%	9.8%	28.1%
60 to less than 90 minutes	1.5%	2.2%	1.3%
Not applicable	18.1%	37.2%	21.8%

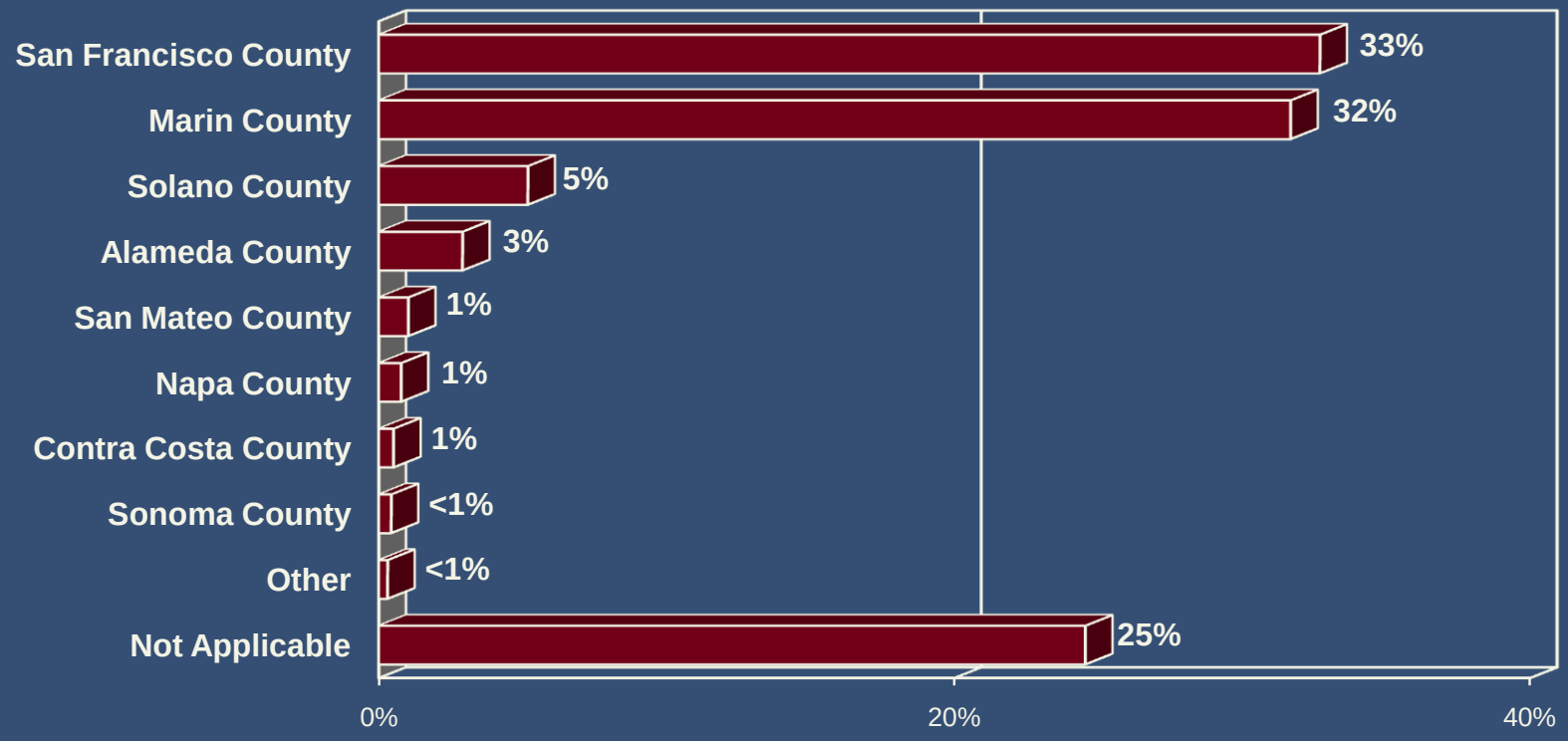
The residents who rated traffic flow within Belvedere negatively were more likely to indicate a one-way commute of 50 to less than 60 miles. Similarly, these residents also were more likely to report a one-way commute time of 30 to less than 60 minutes. To the extent that commute distance and time influences driver fatigue and attitudes, their longer commute from home to work or school may partially account for their negative ratings of traffic flow within Belvedere.

Note: Significant differences at the 95% confidence level between subgroups on any given survey item are denoted by colors: a **blue** mean score or percentage figure is statistically higher than a **red** number between comparative groups, e.g., male vs. female, etc.

Work or School Location

GODBE RESEARCH
Gain Insight

Approximately one-third of the residents reported that their work or school is located in San Francisco County, and another one-third indicated Marin County. (n = 361)



Work or School Location

Subgroup Differences

GODBE RESEARCH
Gain Insight

A higher percentage of the residents who rated traffic flow within Belvedere positively reported that their work or school is located in San Francisco County, or that they do not commute to work or school ("Not Applicable"). In contrast, a higher percentage of the residents who rated traffic flow within Belvedere negatively reported that their work or school is located in Solano County.

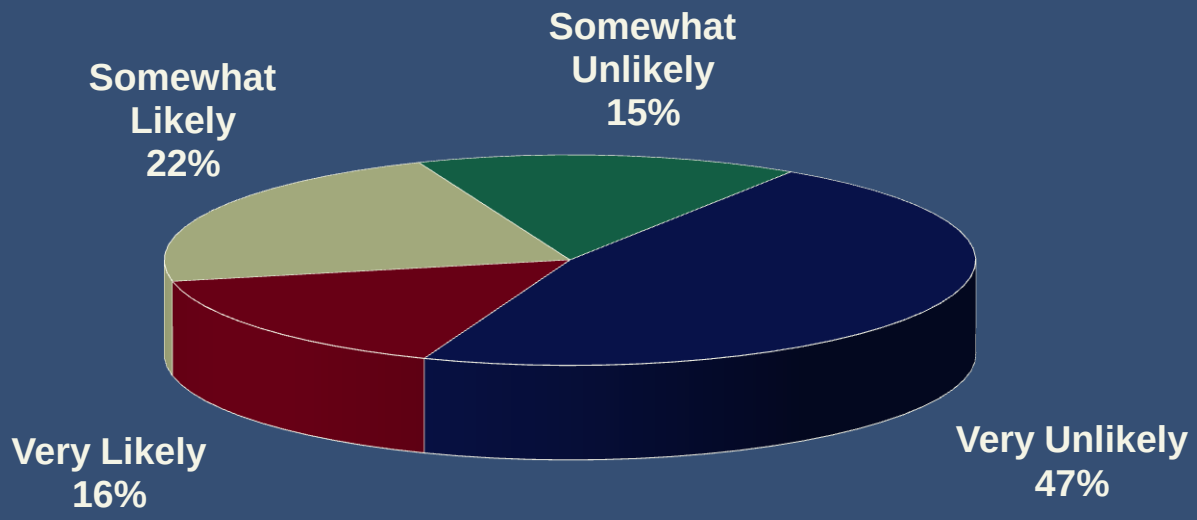
	Traffic Flow Ratings		
	Excellent	Good	Fair/Poor
Sample size (n)	102	173	84
San Francisco County	41.0%	33.4%	22.1%
Marin County	34.8%	27.8%	34.9%
Solano County	.0%	.6%	20.9%
Alameda County	4.2%	2.7%	1.8%
San Mateo County	3.1%	.3%	.0%
Napa County	.6%	1.3%	.0%
Contra Costa County	.0%	1.0%	.0%
Sonoma County	.0%	.9%	.0%
Other	.0%	.0%	1.3%
Not Applicable	16.4%	32.1%	18.9%

Note: Significant differences at the 95% confidence level between subgroups on any given survey item are denoted by colors: a **blue** mean score or percentage figure is statistically higher than a **red** number between comparative groups, e.g., male vs. female, etc.

Likely Use of Shuttle Service

GODBE RESEARCH
Gain Insight

Close to 2 out of 5 residents reported that they or a member of their household would be likely to ride a shuttle service if one were available from Belvedere to park-and-ride lots and bus stops along Highway 101. After discounting the “somewhat likely” responses to provide a more conservative estimate, this result suggests that one-quarter of Belvedere households would be likely to ride a shuttle service. Additional steps should be taken to verify that this rate of household use would sustain the shuttle service. (n = 387)



Likely Use of Shuttle Service

Subgroup Differences

GODBE RESEARCH
Gain Insight

A higher percentage of the women reported that their household would be likely to use a shuttle service than the men. Proportionately more of the residents who rated traffic flow within Belvedere negatively reported that they would be "very likely" to use a shuttle service. Finally, a higher percentage of the Belvedere Island residents indicated that their household would be "very unlikely" to use a shuttle service, whereas a higher percentage of the Belvedere Lagoon residents indicated that their household would be "somewhat unlikely" to use the service.

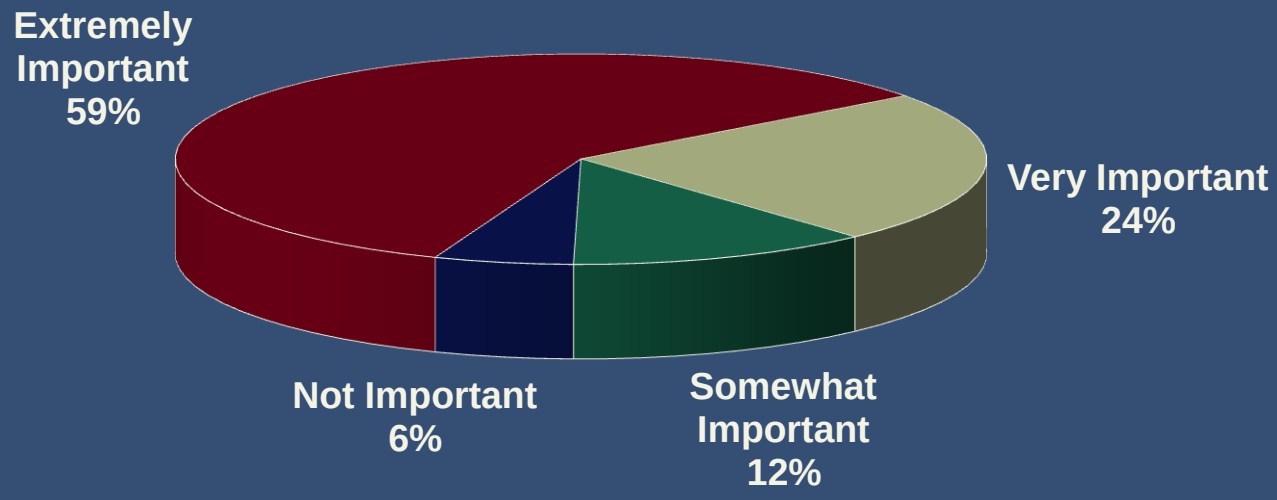
	Gender		Traffic Flow Ratings			Area of Residence	
	Male	Female	Excellent	Good	Fair/Poor	Belvedere Island	Belvedere Lagoon
Sample size (n)	171	211	110	188	89	215	140
Very Likely	6.7%	23.3%	14.5%	12.0%	25.3%	16.4%	17.4%
Somewhat Likely	24.2%	20.1%	24.4%	20.9%	22.5%	19.7%	23.6%
Somewhat Unlikely	13.6%	17.0%	11.5%	19.4%	11.5%	11.1%	21.9%
Very Unlikely	55.5%	39.7%	49.6%	47.7%	40.7%	52.8%	37.1%

Note: Significant differences at the 95% confidence level between subgroups on any given survey item are denoted by colors: a **blue** mean score or percentage figure is statistically higher than a **red** number between comparative groups, e.g., male vs. female, etc.

Tiburon Boulevard Traffic Flow

GODBE RESEARCH
Gain Insight

More than 9 out of 10 residents considered it important to encourage local parents to carpool or use school bus service to improve traffic flow along Tiburon Boulevard during the school year. Further, more than half of the residents indicated a rating of “extremely important.” The residents rated this issue as significantly more important than reducing traffic congestion within the City of Belvedere, as measured earlier in the survey (18% “extremely important” and 16% “very important”). (n = 391)



Tiburon Boulevard Traffic Flow

Subgroup Differences

GODBE RESEARCH
Gain Insight

In response to encouraging local parents to carpool or use school bus service to improve traffic flow along Tiburon Boulevard, the men tended to rate the issue as just slightly less important than the women. More specifically, a higher percentage of the men rated the issue as "very important" or "not important." The issue also was slightly less important to the younger residents than their older counterparts, and the residents with children in their household. Finally, importance ratings were lower among the Belvedere Island residents than the Belvedere Lagoon residents.

	Gender		Age				Children in the Household		Area of Residence	
	Male	Female	18 to 44	45 to 54	55 to 64	65 and over	Yes	No	Belvedere Island	Belvedere Lagoon
Sample size (n)	174	211	84	86	88	129	110	277	218	139
Extremely Important	54.1%	62.8%	48.2%	63.6%	67.5%	57.1%	59.1%	58.7%	**52.1%**	**67.9%**
Very Important	**28.1%**	**19.4%**	**8.8%**	21.8%	22.5%	**34.1%**	18.8%	25.5%	25.5%	21.8%
Somewhat Important	9.2%	14.7%	**34.1%**	**7.3%**	**5.0%**	**6.0%**	11.0%	12.6%	**15.6%**	**5.6%**
Not Important	**8.6%**	**3.2%**	8.8%	7.3%	5.0%	2.8%	**11.1%**	**3.2%**	6.9%	4.8%

Note: Significant differences at the 95% confidence level between subgroups on any given survey item are denoted by colors: a **blue** mean score or percentage figure is statistically higher than a **red** number between comparative groups, e.g., male vs. female, etc.

Appendix A:
Additional Respondent Information

Length of Residence (n = 397)

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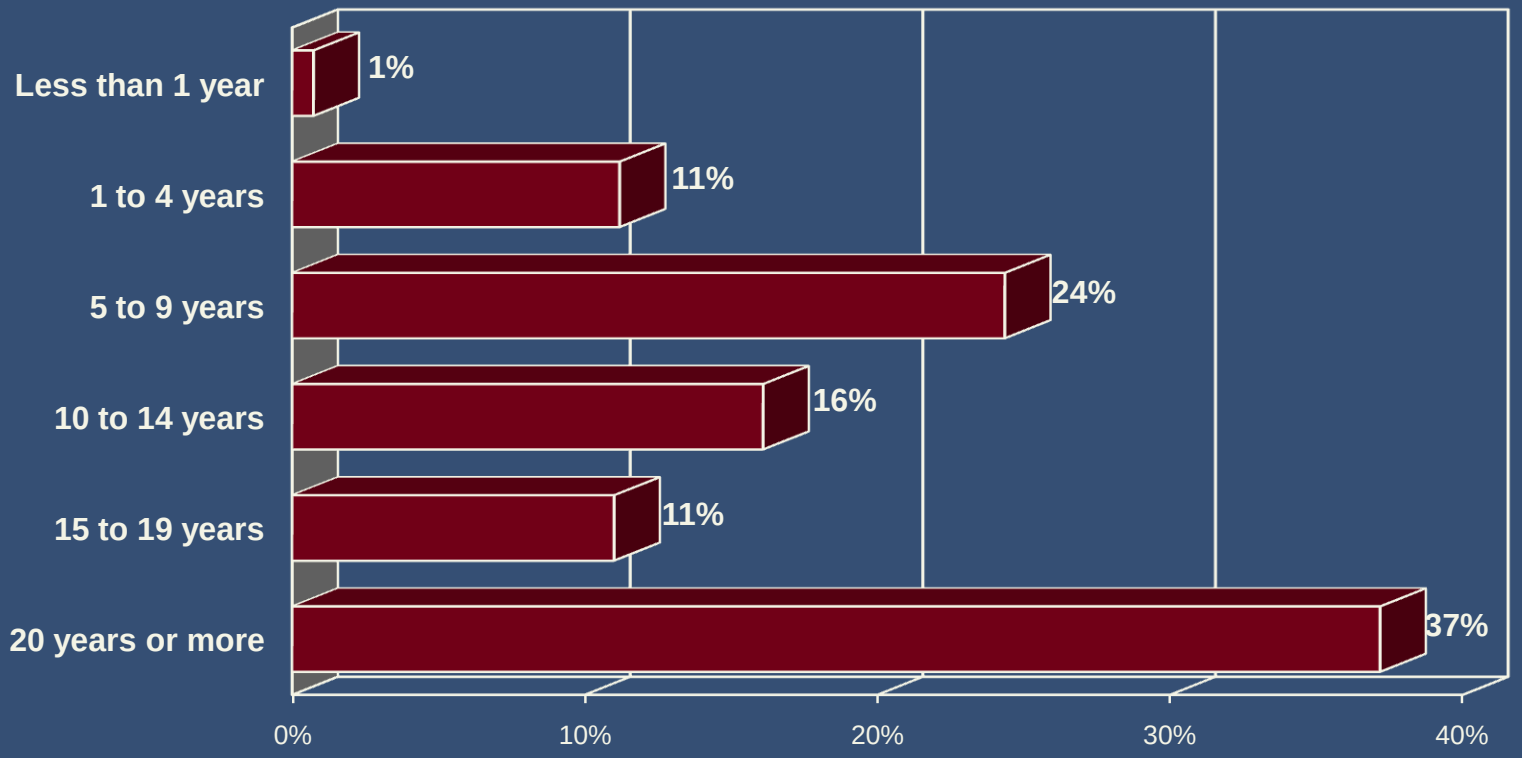
Gain Insight



Neighborhood (n = 396)

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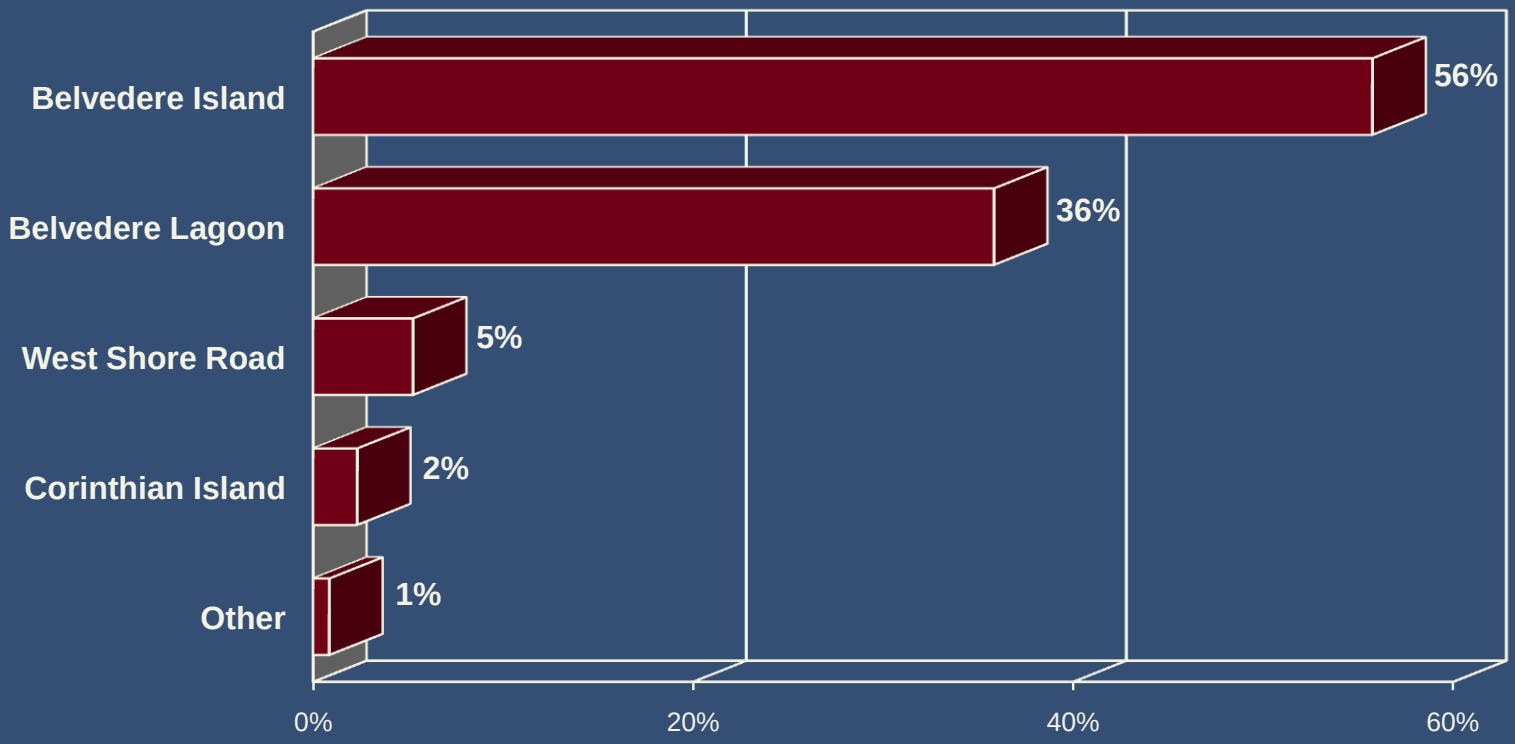

Homeownership Status (n = 396)

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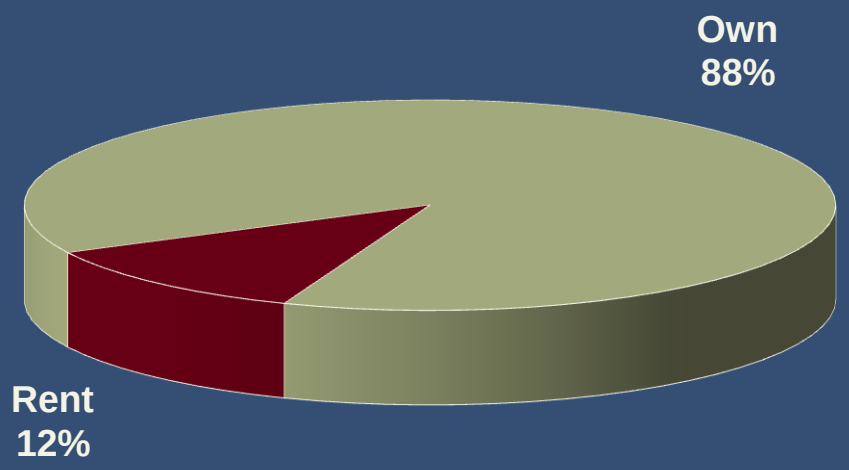
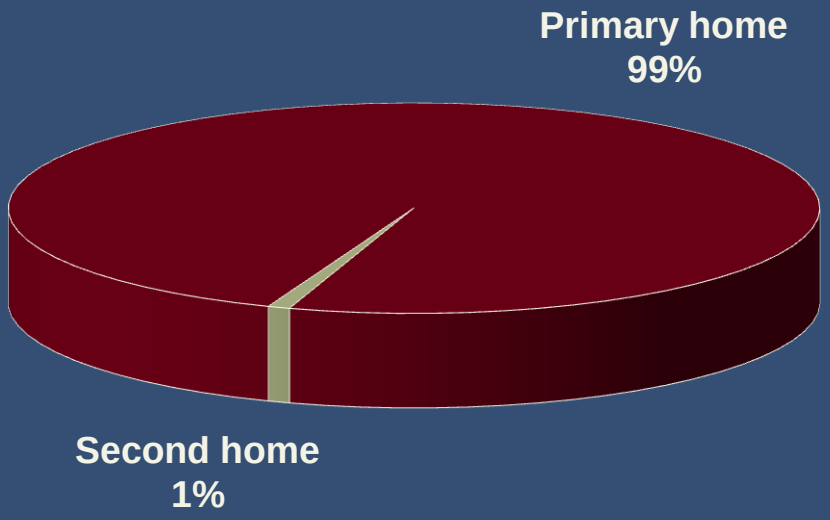


Primary or Secondary Home (n = 394)



Children in the Household (n = 395)

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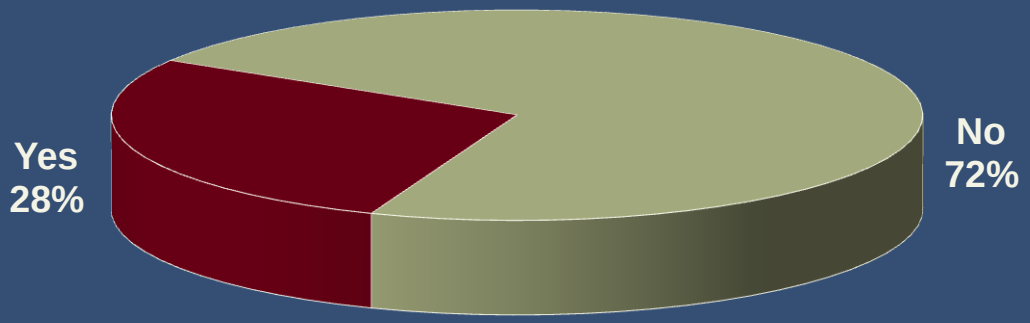
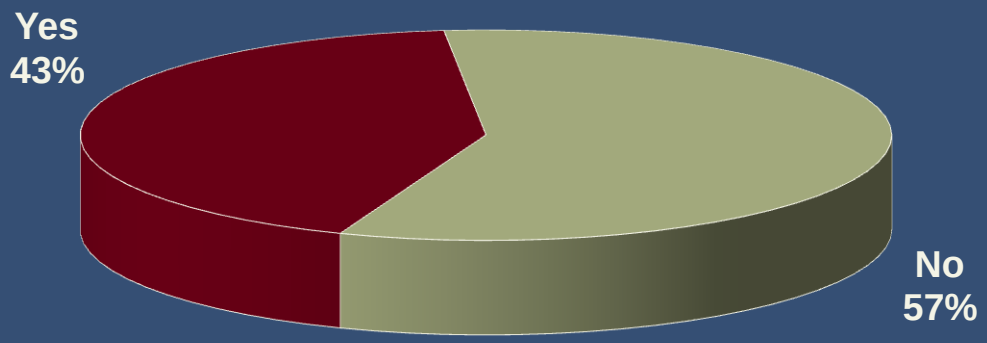


Seniors in the Household (n = 395)



Employment Status (n = 394)

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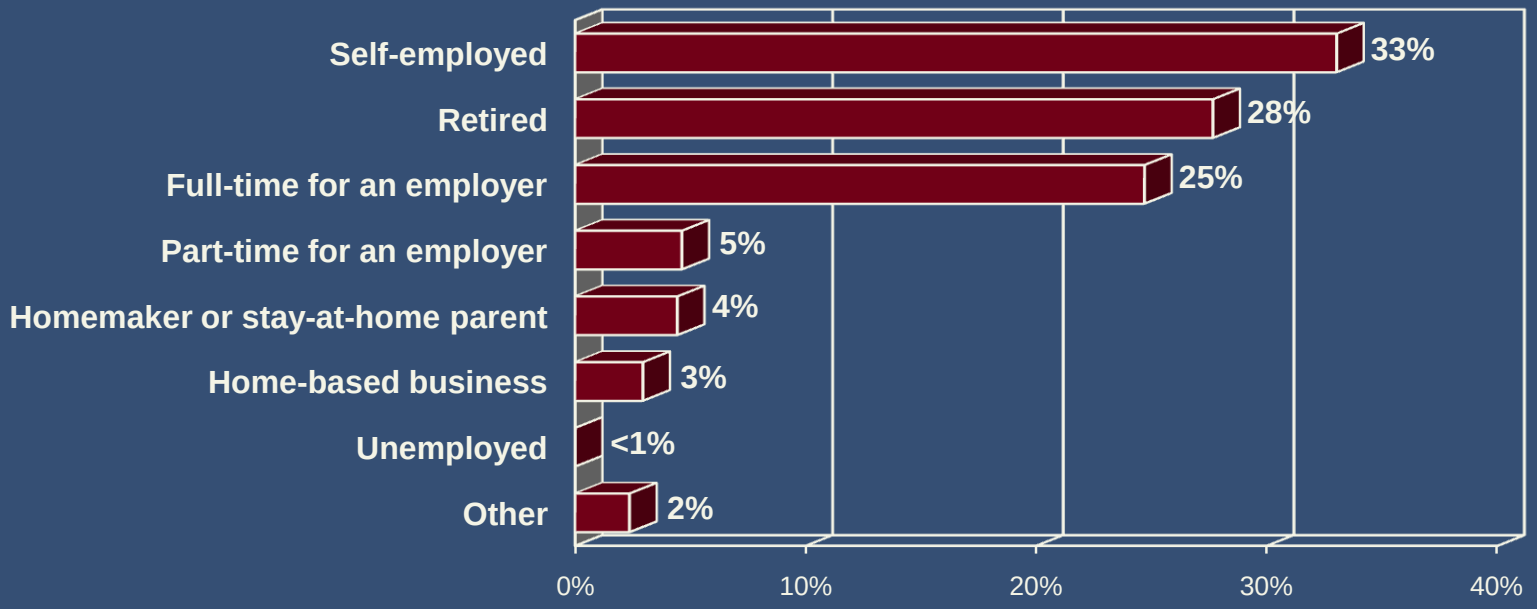
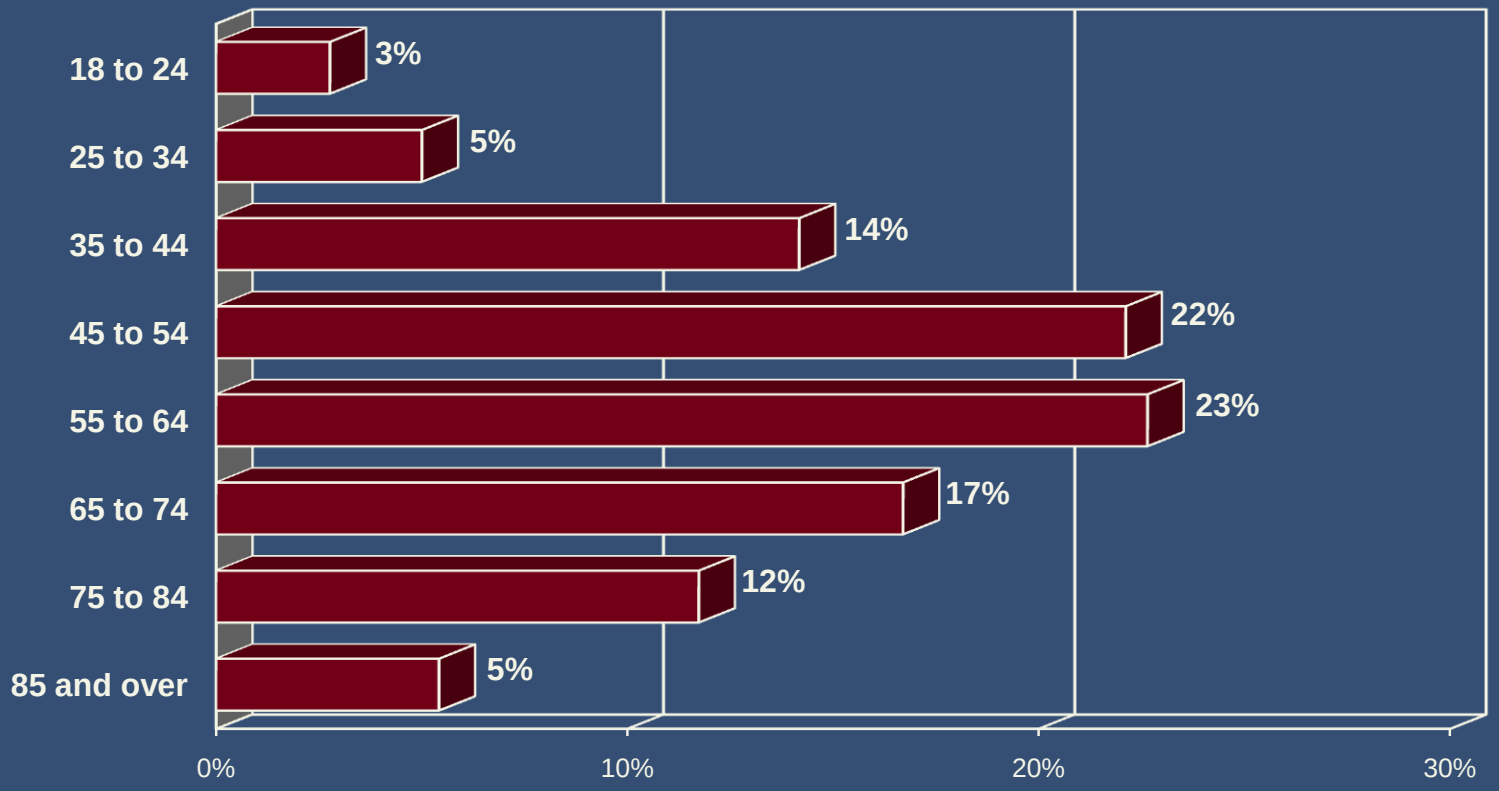
Gain Insight

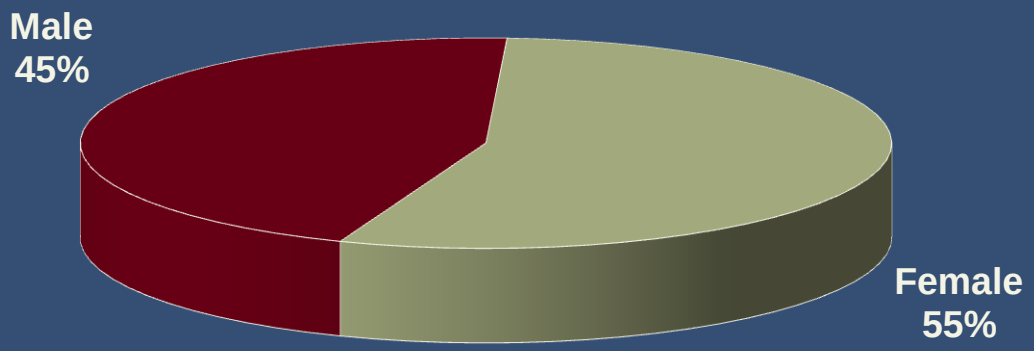


Age (n = 394)

GODBE RESEARCH
Gain Insight



Gender (n = 394)



Appendix B: Methodology

Survey Methodology

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Survey Parameters

Data collection was conducted via a mail survey, which consisted of 27 questions. One questionnaire, along with a cover letter and a pre-paid self-addressed return envelope, was mailed to each household in the City of Belvedere on July 17, 2009. Overall, 400 residents returned the survey by August 13*, representing a total universe of approximately 1,701 adult residents in the City (based on the 2000 U.S. Census). These study parameters resulted in a margin of error of plus or minus 4.3 percent. However, not all of the respondents completed the entire survey. This attrition of respondents is typical for mail surveys, and respondent counts for each question are provided in this report.

Sample and Weighting

Once collected, the sample of residents was compared with the 2000 U.S. Census data for the City of Belvedere to examine possible differences between the demographics of the sample of respondents and the actual universe. The data were weighted to correct any differences, and the results presented are representative of the population characteristics of adult residents in the City in terms of gender and age.

Questionnaire Methodology

Question 2 was open-ended and the residents' written responses have been coded to allow multiple response categories. Similarly, Question 12 allowed the residents surveyed to indicate multiple responses. For this reason, the response percentages sum to more than 100, and these represent the percent of the residents who indicated a particular response, rather than the percent of total responses.

** Surveys received after August 13 were not included in the analyses, as specified in the survey instructions.*

Margin of Error I

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Because a survey typically involves a limited number of people who are part of a larger population group, by mere chance alone there will almost always be some differences between a sample and the population from which it was drawn. These differences are known as “sampling error” and they are expected to occur regardless of how scientifically the sample has been selected. The advantage of a scientific sample is that we are able to calculate the sampling error. Sampling error is determined by four factors: the population size, the sample size, a confidence level, and the dispersion of responses.

The following table shows the possible sampling variation that applies to a percent result reported from a probability type sample. Because the sample of 400 respondents was drawn from the estimated population of approximately 1,701 adult residents in the City of Belvedere, one can be 95 percent confident that the margin of error due to sampling will not vary, plus or minus, by more than the indicated number of percent points from the result that would have been obtained if the interviews had been conducted with all persons in the universe. As the table on the following page indicates, the margin of error for all aggregate responses is between 2.6 and 4.3 percent for the survey.

This means that, for a given question with dichotomous response options (e.g., Yes/No) answered by all 400 respondents, one can be 95 percent confident that the difference between the percent breakdowns of the sample and those of the total population is no greater than 4.3 percent. The percent margin of error applies to both sides of the answer, so that for a question in which 50 percent of respondents indicated yes, one can be 95 percent confident that the actual percent of the population that would indicate yes is between 46 (50 minus 4.3) percent and 54 (50 plus 4.3) percent.

The margin of error for a given question also depends on the distribution of responses to the question. The 4.3 percent refers to dichotomous questions where opinions are evenly split in the sample with 50 percent of respondents saying yes and 50 percent saying no. If that same question were to receive a response in which 10 percent of the respondents say yes and 90 percent say no, then the margin of error would be no greater than plus or minus 2.6 percent. As the number of respondents in a particular subgroup (e.g., age) is smaller than the number of total respondents, the margin of error associated with estimating a given subgroup’s response will be higher. Due to the high margin of error, Godbe Research cautions against generalizing the results for subgroups that are comprised of 25 or fewer respondents.

Margin of Error II

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Gain Insight

n	Distribution of Responses				
	90% / 10%	80% / 20%	70% / 30%	60% / 40%	50% / 50%
800	1.5%	2.0%	2.3%	2.5%	2.5%
700	1.7%	2.3%	2.6%	2.8%	2.8%
600	1.9%	2.6%	3.0%	3.2%	3.2%
500	2.2%	2.9%	3.4%	3.6%	3.7%
400	**2.6%**	**3.4%**	**3.9%**	**4.2%**	**4.3%**
300	3.1%	4.1%	4.7%	5.0%	5.1%
200	3.9%	5.2%	6.0%	6.4%	6.5%
100	5.7%	7.6%	8.7%	9.3%	9.5%

Reading Crosstabulation

GODBE RESEARCH
Gain Insight

The questions discussed and analyzed in this report comprise a subset of various cross-tabulation tables available for each question. Only those subgroups that are of particular interest or that illustrate particular insights are included in the discussion. Should readers wish to conduct a closer analysis of subgroups for a given question, the complete breakdowns appear in Appendix E. These crosstabulation tables provide detailed information on the responses to each question by demographic and behavioral groups that were assessed in the survey. A typical crosstabulation table is shown here.

A short description of the item appears on the left-hand side of the table. The item sample size (n = 373) is presented in the first column of data under "Total."

The results to each possible answer choice of all respondents are presented in the first column of data under "Total." The aggregate number of respondents in each answer category is presented as a whole number, and the percent of the entire sample that this number represents is just below the whole number. In this example, among the total respondents, 306 respondents were "very satisfied" with the quality of life in the city, and this number of respondents equals 82 percent of the total sample size of 373. Next to the "Total" column are the other columns representing responses from the men and the women. The data from these columns are read in exactly the same fashion as the data in the "Total" column, although each group makes up a smaller percent of the entire sample.

		Gender		
		Total	Male	Female
In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?	Total	373	172	201
	Very Satisfied	306	138	168
		81.9%	80.3%	83.3%
	Somewhat Satisfied	50	28	22
		13.4%	16.1%	11.0%
	Somewhat Dissatisfied	13	4	9
		3.4%	2.4%	4.4%
	Very Dissatisfied	5	2	3
		1.3%	1.2%	1.3%

Subgroup Comparisons

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To test whether or not the differences found in percent results among subgroups are likely due to actual differences in opinions or behaviors – rather than the results of chance due to the random nature of the sampling design – a "z-test" was performed. In the headings of each column are labels, "A," "B," "C," etc. along with a description of the variable. The "z-test" is performed by comparing the percent in each cell with all other cells in the same row within a given variable (within Gender in the pictured table, for example).

The results from the "z-test" are displayed in a separate table below the crosstabulation table. If the percent in one cell is statistically different from the percent in another, the column label will be displayed in the cell from which it varies significantly. For instance, in the adjacent table, if a significantly higher percent of the male respondents (16%) report being "somewhat satisfied" with the quality of life in Belvedere than the percent of female respondents (11%); then the letter "B," which stands for female respondents, would appears under Column "A," which stands for male respondents. The letters in the table indicate the differences where one can be 95 percent confident that the results are due to actual differences in opinions or behaviors reported by subgroups of respondents.

It is important to note that the percent difference among subgroups is just one piece in the equation to determine whether or not two percentage figures are significantly different from each other. The variance associated with each data point is integral to determining significance. Therefore, two calculations may be different from each other, yet the difference may not be statistically significant according to the "z" statistic.

		Gender		
		Total	Male	Female
1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?	Total	373	172	201
	Very Satisfied	306	138	168
		81.9%	80.3%	83.3%
	Somewhat Satisfied	50	28	22
		13.4%	16.1%	11.0%
	Somewhat Dissatisfied	13	4	9
		3.4%	2.4%	4.4%
	Very Dissatisfied	5	2	3
		1.3%	1.2%	1.3%

		Gender	
		Male	Female
		(A)	(B)
1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?	Very Satisfied		
	Somewhat Satisfied	B	
	Somewhat Dissatisfied		
	Very Dissatisfied		

Understanding a Mean

In addition to the analysis of the percent of the responses, certain results are discussed with respect to a descriptive "mean." Means are the arithmetic averages of responses. For example, to derive respondents' importance ratings of different recreational programs, a number value is first assigned to each response category (in this case, Extremely Important = +3, Very Important = +2, Somewhat Important = +1, and Not Important = 0). The individual answer of each respondent is then assigned the corresponding number – from +3 to 0 in this example. Finally, all respondents' answers are averaged to produce a final score that reflects overall importance of a sport or recreational activity. The resulting mean makes the interpretation of the data considerably easier.

In the Crosstabulation tables, as well as in some tables and charts throughout the report, for Questions 3, 6 and 7 of the survey, the reader will find mean scores. These mean scores represent the average response of each group. The adjacent table shows the scales for all these questions. Responses of "DK/NA" were not included in the calculations of the means for any question.

Question	Measure	Scale	Values
Q3 and Q6	Importance Ratings	+3 to 0	+3 = "Extremely Important" +2 = "Very Important" +1 = "Somewhat Important" 0 = "Not Important"
Q7	Support Ratings	+2 to -2	+2 = "Strongly Support" +1 = "Somewhat Support" -1 = "Somewhat Oppose" -2 = "Strongly Oppose"

Means Comparisons

GODBE RESEARCH
Gain Insight

Only those subgroups that are of particular interest, or that illustrate a particular insight, are included in the discussion within the report with regard to mean scores. A typical crosstabulation of mean scores is shown in the adjacent table.

The aggregate mean score for each item in the question series is presented in the first column of the data under "Total." For example, among all the survey respondents, "Encouraging sustainable/green building practices" earned a mean importance score of 1.6. Next to the "Total" column are other columns representing the mean scores assigned to the respondents grouped by Gender.

The data from these columns are read in the same fashion as the data in the "Total" column. To test whether two mean scores are statistically different, a "t-test" is performed. As in the case of the "z-test" for percents, a statistically significant result is indicated by the letter representing the data column.

	Gender		
	Total	Male	Female
3A. Encouraging sustainable/green building practices	1.6	1.5	1.8
3B. Ensuring the City is prepared for an earthquake and other disasters	2.3	2.3	2.3
3C. Improving Belvedere-Tiburon Library services and facilities	1.1	1.0	1.2
3D. Improving walking paths, public lanes, and steps	1.5	1.5	1.6

	Gender	
	Male	Female
	(A)	(B)
3A. Encouraging sustainable/green building practices		A
3B. Ensuring the City is prepared for an earthquake and other disasters		
3C. Improving Belvedere-Tiburon Library services and facilities		A
3D. Improving walking paths, public lanes, and steps		

Appendix C: Topline Report

CITY OF BELVEDERE: 2009 Resident Survey
Topline Report
August 2009

The City of Belvedere commissioned Godbe Research to conduct a survey of residents to help inform the City's General Plan Update. The survey was conducted with the following research objectives: (a) survey resident satisfaction with the overall quality of life in the City; (b) assess the importance of local issues; and (c) gather resident feedback on parks and recreation facilities and services, residential and commercial development, and transportation and commuting issues.

SURVEY METHODOLOGY

Data collection was conducted via a mail survey, which consisted of 27 questions. One questionnaire, along with a cover letter and a pre-paid self-addressed return envelope, was mailed to each household in the City of Belvedere on July 17, 2009. Overall, 400 residents returned the survey by August 13*, representing a total universe of approximately 1,701 adult residents in the City (based on the 2000 U.S. Census). These study parameters resulted in a margin of error of plus or minus 4.3 percent. However, not all of the respondents completed the entire survey. This attrition of respondents is typical for mail surveys, and respondent counts for each question are provided in this report.

Once collected, the sample of residents was compared with the 2000 U.S. Census data for the City of Belvedere to examine possible differences between the demographics of the sample of respondents and the actual universe. The data were weighted to correct any differences, and the results presented are representative of the population characteristics of adult residents in the City in terms of gender and age.

QUESTIONNAIRE METHODOLOGY

Question 2 was open-ended and the residents' written responses have been coded to allow multiple response categories. Similarly, Question 12 allowed the residents surveyed to indicate multiple responses. For this reason, the response percentages sum to more than 100, and these represent the percent of the residents who indicated a particular response, rather than the percent of total responses.

MEAN SCORES AND ROUNDING

In addition to the percentage breakdown of responses to each question, results for the questions relating to importance of local issues (Q3) and availability of recreational programs and classes (Q6), as well as support for residential and commercial development (Q7), include mean scores. For example, to derive the overall importance of a local issue (Q3), a number value was assigned to each response category – in this case, "Extremely Important" = +3, "Very Important" = +2, "Somewhat Important" = +1, and "Not Important" = 0. The number values that correspond to respondents' answers were then averaged to produce a final score that reflects the overall importance of that issue. The resulting mean score makes the interpretation of the data considerably easier. Responses of "Don't Know" (DK/NA) were not included in the calculations of the means for any questions.

Conventional rounding rules apply to the percentages shown in this report, .5 or above was rounded up to the next number, and .4 or below was rounded down to the previous number. As a result, the percentages may not add up to 100 percent.

* *Surveys received after August 13 were not included in the analyses, as specified in the survey instructions.*

Local Issues

1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere? (n = 378)

Very Satisfied	82%
Somewhat Satisfied	13%
Somewhat Dissatisfied	3%
Very Dissatisfied	1%

2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? *Please write your response in the space below.* (n = 278)

Maintaining the character of the community	21%
Controlling the size of houses	14%
Traffic safety/congestion	12%
Upgrading/maintaining the infrastructure	10%
Bureaucratic/unfriendly planning department	8%
Rising sea level	8%
Managing growth/development	8%
Reducing deer population	7%
Maintaining public safety	7%
Sound financial management	5%
Improving retail stores/restaurant options	5%
Global warming/climate change	5%
Emergency preparedness	4%
Environmental sustainability	4%
Affordable housing	3%
Recreation/community programs	3%
Maintaining the quality of life	3%
Development of current City facilities	2%
Inappropriate vegetation	2%
Problems with City staff	2%
Parking	2%
High taxes	2%
Strict enforcement of building codes or design guidelines	2%
Noise	2%
Undergrounding utilities	1%
Harmony between neighbors	1%
Availability of public transportation	1%
Independent services and programs for residents	1%
Soil erosion	1%
Other	7%
Nothing specific	1%

3. Please consider the following issues in the City of Belvedere, and rate how important each is to you personally.

	Mean Score	Sample Size	Extremely Important	Very Important	Somewhat Important	Not Important
3A. Encouraging sustainable/green building practices	1.6	387	24%	27%	38%	11%
3B. Ensuring the City is prepared for an earthquake and other disasters	2.3	389	48%	33%	17%	2%
3C. Improving Belvedere-Tiburon Library services and facilities	1.1	391	8%	23%	44%	25%
3D. Improving walking paths, public lanes, and steps	1.5	387	15%	31%	46%	8%
3E. Improving existing sidewalks and providing new sidewalks where feasible	1.4	389	13%	28%	43%	16%
3F. Maintaining neighborhood parks	2.0	393	27%	51%	21%	1%
3G. Managing growth and development	2.2	386	44%	32%	20%	3%
3H. Maintaining seawalls and infrastructure for storm-related flooding	2.1	395	42%	33%	21%	4%
3I. Maintaining historic homes and landmarks	1.4	389	15%	24%	43%	18%
3J. Preserving Belvedere's unique character	2.3	387	47%	36%	15%	2%
3K. Preservation of open spaces	2.2	387	51%	25%	21%	3%
3L. Preserving residential scenic views	2.3	393	47%	35%	14%	4%
3M. Preventing wildfires	2.3	397	55%	24%	16%	5%
3N. Providing programs to reduce energy consumption and conserve natural resources	1.7	392	23%	34%	32%	11%
3O. Providing public transportation, carpooling, and other alternatives to driving alone	1.3	391	20%	18%	32%	30%
3P. Providing recreational programs and facilities	1.3	392	10%	31%	42%	17%
3Q. Building partnerships with neighboring communities to share services and facilities	1.6	393	16%	40%	34%	10%
3R. Reducing traffic congestion within the City of Belvedere	1.2	393	18%	16%	37%	30%

Mean Score Computation:
"Extremely Important" = +3, "Very Important" = +2, "Somewhat Important" = +1, and "Not Important" = 0.

Parks and Recreation Facilities and Services

4. In the past 12 months, have you or a member of your household attended any recreation program, class or event sponsored by Belvedere-Tiburon Recreation? (n = 398)

Yes	43%
No	57%

5. In general, are you satisfied or dissatisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon? (n = 364)

Very Satisfied	44%
Somewhat Satisfied	46%
Somewhat Dissatisfied	8%
Very Dissatisfied	2%

6. For each of the following recreational programs and classes, please rate if the availability in Belvedere is important to you or a member of your household.

	Mean Score	Sample Size	Extremely Important	Very Important	Somewhat Important	Not Important
6A. After-school and summer programs for children and teens	1.1	371	15%	22%	19%	44%
6B. Children's programs	1.0	368	13%	21%	24%	42%
6C. Teen programs	1.0	362	12%	20%	22%	46%
6D. Adult fitness and wellness programs, such as yoga or tennis	1.3	381	11%	27%	39%	23%
6E. Adult special interest programs, such as bridge games or language classes	1.0	382	8%	24%	31%	37%

Mean Score Computation:
"Extremely Important" = +3, "Very Important" = +2, "Somewhat Important" = +1, and "Not Important" = 0.

Residential and Commercial Development

7. Please rate whether you would support or oppose each of the following in Belvedere.

	Mean Score	Sample Size	Strongly Support	Somewhat Support	Somewhat Oppose	Strongly Oppose
7A. Development of single-family homes	0.7	356	30%	45%	13%	11%
7B. Development of second units to single-family homes	-0.1	377	16%	32%	27%	25%
7C. Development of condominiums	-0.7	380	10%	20%	32%	39%
7D. Development of apartments	-0.9	380	7%	16%	30%	46%
7E. Development of mixed-use buildings with shops or services on the first floor and condominiums on the upper floors	0.0	379	20%	33%	17%	30%
7F. Development of small shops, restaurants, and services	0.7	378	38%	36%	11%	15%

Mean Score Computation:
"Strongly Support" = +2, "Somewhat Support" = +1, "Somewhat Oppose" = -1, and "Strongly Oppose" = -2.

8. Please consider the new homes and additions to existing homes that have been built in Belvedere within the past 10 years. In general, do you think these homes are too small, the right size, or too large for the character of the city? (n = 386)

Too small	1%
The right size	53%
Too large	46%

9. The City of Belvedere has an Ordinance that regulates the size of new homes and additions to existing homes. This Ordinance could be revised to include an absolute limit, without exception, on the maximum house size permitted by the City which would be based on the size of the property. Would you support or oppose creating an absolute limit on maximum house size? (n = 390)

Strongly Support	37%
Somewhat Support	28%
Somewhat Oppose	14%
Strongly Oppose	21%

10. Pursuant to the Zoning Ordinance, the City of Belvedere can grant a license to property owners to allow private fences along streets and roadways and on other public land. In general, do you support or oppose this practice? (n = 368)

Strongly Support	28%
Somewhat Support	39%
Somewhat Oppose	21%
Strongly Oppose	12%

Transportation and Commuting

11. In general, how would you rate traffic flow within the City of Belvedere? (n = 393)

Excellent	28%
Good	49%
Fair	20%
Poor	3%

12. What type of transportation do you typically use to go to work, school, or other places you visit most frequently? *Please check all that apply*. (n = 391)

Drive alone	90%
Walk	39%
Ferry	30%
Carpool/Ride with others	20%
Bicycle	16%
Bus	6%
Other	3%

13. If applicable, how many miles is your one-way commute from home to work or school? (n = 367)

Less than 10 miles	22%
10 to less than 20 miles	29%
20 to less than 30 miles	8%
30 to less than 40 miles	4%
40 to less than 50 miles	2%
50 to less than 60 miles	6%
60 miles or more	1%
Not applicable	29%

14. If applicable, how many minutes does your one-way commute from home to work or school take? (n = 362)

Less than 15 minutes	17%
15 to less than 30 minutes	17%
30 to less than 45 minutes	23%
45 to less than 60 minutes	13%
60 to less than 90 minutes	2%
Not applicable	28%

15. If applicable, in which county is your work or school located? (n = 361)

San Francisco County	33%
Marin County	32%
Solano County	5%
Alameda County	3%
San Mateo County	1%
Napa County	1%
Contra Costa County	1%
Sonoma County	<1%
Other	<1%
Not Applicable	25%

16. If a shuttle service were available from Belvedere to park-and-ride lots and bus stops along Highway 101, such as the Strawberry Village Shopping Center or the Alto Shopping Center, how likely would you or a member of your household be to ride the shuttle service? *Please consider any household employees or staff in your response*. (n = 387)

Very Likely	16%
Somewhat Likely	22%
Somewhat Unlikely	15%
Very Unlikely	47%

17. During the elementary and middle school year, how important is it to encourage local parents to carpool or use school bus service to improve traffic flow along Tiburon Boulevard? (n = 391)

Extremely Important	59%
Very Important	24%
Somewhat Important	12%
Not Important	6%

Resident Information

Please share your demographic and household information – the following questions will only be used for statistical comparisons.

18. How many years have you lived in Belvedere? (n = 397)

Less than 1 year	1%
1 to 4 years	11%
5 to 9 years	24%
10 to 14 years	16%
15 to 19 years	11%
20 years or more	37%

19. Please check the neighborhood in which you live (n = 396):

Belvedere Island – including the west side of San Rafael Avenue	56%
Belvedere Lagoon – including Lower Beach Road	36%
West Shore Road	5%
Corinthian Island	2%
Other	1%

20. Do you currently rent or own your residence in Belvedere? (n = 396)

Own	88%
Rent	12%

21. Is this residence your primary home, or is it a second home? (n = 394)

Primary home	99%
Second home	1%

22. If this residence is a second home, how many months do you live in Belvedere during a typical year? (n = 7)

3 months to less than 6 months	3
6 months to less than 9 months	2
9 months to 12 months	2

23. Do any children under the age of 18 live in your household? (n = 395)

Yes	28%
No	72%

24. Including yourself, if applicable, do any adults age 65 and over live in your household? (n = 395)

Yes	43%
No	58%

25. Which of the following best describes your working status? (n = 394)

Self-employed	33%
Retired	28%
Full-time for an employer	25%
Part-time for an employer	5%
Homemaker or stay-at-home parent	4%
Home-based business	3%
Unemployed	<1%
Other	2%

26. Which of the following categories includes your age? (n = 394)

18 to 24	3%
25 to 34	5%
35 to 44	14%
45 to 54	22%
55 to 64	23%
65 to 74	17%
75 to 84	12%
85 and over	5%

27. What is your gender? (n = 394)

Male	45%
Female	55%

Verbatim Comments for Q2:

- Funding for flood and fire control
- Control the growing population
- Maintaining the character of Belvedere by careful and consistent approval for residencies and by continuing upgrading infrastructure at an economic pace consistent with revenues.
- Reduce the city's expensive and heavy handed oversight of minor construction and remodel projects. Fees are too high and approval process is too complicated.
- Traffic
- Continue competent city administrators and responsible fiscal management of city affairs.
- Continue to foster our unique community with concerts in the park, block parties and community activities.
- To maintain the character of the community by limiting inordinate growth
- Size of house need to be controlled. Lot size house destroy the nature of Belvedere
- Traffic Safety- especially the increasing difficulty of driving around bikes who do not share the road.
- Limit growth
- Control the size of houses. Too many monsters!
- Keeping the character of Old Belvedere! We do not need to help to build a larger library.
- Traffic
- No growth, including low income housing. We have no room. Tiburon Blvd. is too crowded. Impossible to drive at 8 AM and 1:30 PM
- Maintain our small town feeling.
- Install and maintain sidewalks on all flat roadways and the lagoon.
- Limit growth. Return to and then maintain the feeling of a village, a high quality village!
- Mixed-use development and "cities as ecosystems"
- Better control of wildlife such as deer and raccoons. Control of speed of construction traffic and contractors.
- Managing development- keep house sizes moderate.
- No additions to library- it's beautiful the way it is.
- Traffic control and noise control and population control
- Expanding the library. Reducing the max allowable size of single family houses. Reducing the allowable height of fences on the street side of the property.
- Bringing common sense to building/remodeling requirement. Absolutes don't work well.
- There is an outrageous deer problem in Belvedere that need to be addressed. Also, the Belvedere Planning Dept. must start acting as an alias to builder and homeowners and not the enemy. Finally it needs to be put in stone that development of the alley behind Cove Rd. would destroy many homeowners real estate value and therefore is not allowed.
- To limit population density/building as to preserve unique small town character. Continue with concerts in the park as one way of community building.
- Managing growth; development to maintain Belvedere's unique character.
- Overdevelopment and merging of lots to create large or compound type homes, i.e., two homes on one old and with continuous fences. . Good retail services.
- Ability to maintain current utility, fire: safety services. Ability to maintain or limit growth.
- Maintaining an affordable family community
- Traffic on 2 lane Tiburon Blvd.
- Thinning out the deer!!
- Getting neighbors to cooperate with each other without city help in regard to noise, views, maintenance, landscape, and home exteriors in a reasonable manner and with sensitivity for all affected.

- To conserve resources and maintain village atmosphere, i.e., remove current hi-intensity street lamps with lower lights on lampposts. Also, combine police with Tiburon to save costs.
- Limit home sizes on the island. Providing for pedestrian safety on San Rafael Ave Beach Road and Tiburon Blvd, especially commuting car speed and provide crosswalks.
- Continuous harmony and no development.
- Boardwalk-commercial
- Sea level rising.
- Keeping the friendly and small town atmosphere of knowing our neighbors.
- Keeping to plan single family homes. Traffic and parking safety of person and property.
- Preventing overbuilding of huge houses.
- To keep Belvedere the safe, quiet, tranquil place to live and enjoy.
- Reasonable response to the needs of resident and not overly burdensome restrictions.
- Preparation for future disasters; maintaining seawalls and infrastructure and guard against flooding, earthquakes, fire, etc.
- Sensible and common sense rules on housing permits as to house size, rules on what a tear down, or renovation is and strong penalties for breaking the rules.
- Not to raise tax on seniors.
- Overdevelopment of existing facilities such as the Boardwalk Shopping Center and the library. Thereby taking away the small-town environment and sense of community.
- Ensuring there are sufficient tax revenues to support education and infrastructure.
- Developing a reasonable balance between property rights and regulation that allows our community to develop a less elitist and exclusionary image/atmosphere, with more neighborly and community feel.
- Preserve its unique nature.
- Maintaining city services without significantly rising taxes and fees.
- To resist the temptation to allow overbuilding as the older owners sell their homes and move on.
- Maintaining infrastructure at reasonable cost. Avoiding fixed pension costs of employees...
- Improving and creating shops, restaurants and services within walking distance of SFYC, so that people do not have to get in a car to obtain these things.
- Managing growth and development to maintain unique character and quality of life/small town feel.
- Reducing deer population for safety reasons.
- Safety and continuing to have a place where our children can grow up happy and safe.
- Belvedere/Tiburon needs a top-quality high school across from the Boardwalk Market.
- Rise in ocean level.
- Avoid multiple use properties as too large homes add units.
- Portable water/Global warming
- Increase in amount and speed of traffic-especially on Golden Gate Ave.
- Threat of rising sea levels and earthquakes destroying our community.
- Maintaining its independence as a city. Including provision of Municipal services.
- Maintain safety and unique beauty of town and residences.
- Preventing flooding from rising sea levels
- A pharmacy
- Graying of population
- Fixing the seawall to prevent flooding, but also allowing the amazing views to be available. We do not want a huge concrete structure that will impede views and be an eyesore.
- Maintaining quality of life
- Maintaining quaint "village" look and not becoming overrun with mega-mansions on tiny lots. No more houses like the Price's on Peninsula Rd.
- Maintaining the quality of the infrastructure.

- The deer population and its effect on our flora and fauna.
- Don't change anything!
- Proper upgrading of utilities and sewer and wastewater systems.
- Let fewer rude=snobbish people move here and enforce traffic laws better. Lower speed limit on island.
- I don't know- would think there is more than one. Certainly, giving residents who want to build a fence, plant flowers do something that impacts no one a hard time and letting large home go up on the lagoon is a problem.
- How downtown life in Belvedere/Tiburon is. Need to keep quality entertainments, restaurants, shops available.
- Possible rising water-Global Warming
- Solve affordable housing dilemma by working with BLC to put Comi/res units on Boardwalk. Continued attention to reducing cost of city government. Support reasonable expansion plans of the library.
- Complete all undergrounding
- City staff should serve the citizens of Belvedere, not their own bureaucratic goals. In particular planning department staff should be conservative and interpret rules and guidelines flexibility and not an adversarial attitude toward permit applicants. Staff should be facilitators, not "strict enforcers".
- For residents to have a real say in areas that effect them- like underground. I feel it has been unfairly mandated.
- Encouraging sustainability in new construction renovations, all local businesses, schools and infrastructure (muni-government)
- The planning department is too adversarial…bureaucratic minutia rather than big picture…which should only be about preserving the county of Belvedere.
- People really should be nice to each other. This is a major complaint of many citizens from planning with their blank "you're doomed" faces to the old folks that think the young folks are out to make life miserable. Just be happy and greet difference in a kind manor!
- Controlling size of houses.
- To retain the small community ambiance.
- The increase traffic along Tiburon Blvd. to and from 101. Evacuation concerns should be addressed.
- Preserving the character of their community.
- Global Warming
- Overbuilding! Especially on the lagoon on San Rafael Ave. Houses too tall and too large! Loss of privacy and sun. Loss of good relationships.
- Maintaining an adequate reserve fund
- Finish undergrounding wires
- Global Warming
- Use of the lagoon-swimming, etc.
- Maintaining the small community spirit and beauty of Belvedere.
- That the city remains financially secure.
- Maintain the charm of Belvedere which makes it so unique. As an aside- deer are becoming a tremendous nuisance.
- Expanding the library.
- Too much growth.
- Global Warming. Becoming greener. Seriously recycling. Disaster preparation-safety exit planning.
- Deer, erosion
- Environmental sustainability
- Deal with the deer problem. Need better landscape and flowers in all public places. Improve shops on Tiburon Blvd. and Main Street. We need high-end fashion and excellent restaurants.

- Maintaining Belvedere's small town atmosphere and community involvement.
- Preservation of character and quality of Belvedere homes and infrastructure.
- The ability of resident to upgrade their properties to buildup new standards...i.e., energy, water, access, electrically heat exterior
- Remove deer completely! Let's have flowers instead.
- Keeping houses under control.
- Parking is so limited. The more resident on the island the more difficult it is to park, drive entertain.
- Global warming and associated sea rise.
- We do not need a "nanny government". I really long for a Pre-1972 Belvedere government. So much nicer!!
- Maintaining high home quality without our building. Maintaining a crime free environment. Maintaining community.
- Global warming leading to rising bay waters affecting the integrity of the sea wall protecting homes.
- Adapting to climate change in the form of rising sea levels, and mitigating climate through policy and incentives.
- To preserve the size and character of Belvedere and to increase number of community- based events (-i.e., concert in the park, parades, Friday on main-) which encourage neighbor lines and inclusion of all ages in participation. We should all know each other.
- Traffic on Tiburon Blvd.
- Not acquiescing to pressure to grant variances to build mega mansions
- Crime control
- Maintaining and improving life style,
- No more building of new homes or businesses.
- Beautification of the community and maintenance of its unique architectural character and particularly Corinthian and Belvedere islands.
- Traffic on Tiburon Blvd! It is terrible!!!
- Reducing the deer population. Traffic congestion on Tiburon Blvd.
- Keeping the "status quo"
- Preserving small town feel and unique character of the Belvedere community
- Managing growth and development. Also some concern about level of Bay.
- Rising sea levels. Increased traffic on Tiburon Blvd. Lack of good food shopping.
- Traffic in and out of Belvedere-to the freeway.
- Preservation of its charm and upgrading the homes.
- Keeping government small and friendly.
- Making preparation to survive bit earthquake and being cut off from water, food, shelter, medical aid, for an extended period of time.
- My greatest concern is that certain residents use their position on commissions (such as the planning commissions) to impose their personal views and taste rather than adhering to existing ordinances, which provide sufficient protection as is.
- Maintaining the community spirit and involvement.
- No high rise buildings.
- It is a disservice and a disgrace to continue to allow design review members serve which have no architectural or design background or education. To allow these unqualified people o make design decisions is the BIGGEST mistake for Belvedere!!!
- Keeping Belvedere's wonderful small town presence and keeping too much city oversight out of residents' eyes; especially in the permit process.
- We need stores (5-10; pharmacy) and bus transportation to commute ferry and school bus.
- Fiscal conservations-maintain a city budget surplus.
- Traffic, both bicycles and cars. Noise from garden works. Global warming affects on the waterfront.
- Property values. Supporting Reed Schools.

- Quality construction of sites.
- Handling the deer situation- no more gates. No more homes left in complete disarray.
- Preserving access to Angel Island as a State Park. Reducing traffic congestion on Tiburon Blvd. Maintaining low level of crime.
- New seawall
- Reigning in the bureaucracy and treating everyone equally.
- Preserve the natural beauty.
- Site control/planning commission decisions
- Not to make house too large on small lots!!
- Maintaining the unique character of Belvedere
- Design review
- Transportation for the senior population; controlling the deer infestation; controlling large trucks on narrow streets like Bella Vista, Beach Road, etc.
- Street maintenance
- Keeping our city small and well cared for.
- Candid, cooperative…neighborly relations.
- I am worried that escalating taxes will drive many middle income residents out of Belvedere. Projects such as undergrounding are costly for the average citizen.
- Safety, keeping our community clean community events.
- Infrastructure, water, sewer, electrical, and installing underground fiber optical and streets
- Not losing its gracious character-no more over-sized houses.
- Control deer population
- House size and design
- Just keep doing what we're doing but enforce speed laws!
- Safety and a good market
- Quality of life: construction noise and traffic
- Appropriate development of single family dwellings that are evaluated on a case by case basis to ensure they maintain the unique character of Belvedere.
- To provide housing (with or without assisted living accommodation) transportation from to nearest bus station
- Retain character
- Sense of community. Local shops, activities all ages or incomes
- Size-medium size house so owners participate in our community-large 2nd/3rd home are often vacant.
- Less government, the city has way too much power when it comes to design review, the worst I have ever seen.
- To maintain a most beautiful area-not to construct huge mansions.
- Keeping shops, restaurants, galleries in town by supporting them even if they are in Tiburon.
- To have little more rules and regulations for bicyclers to me and many more looks like they have more rights than drivers.
- Having more lighting in our wavy roads.
- Flooding, traffic congestion, parking
- Traffic and careful monitoring of commercial business. Area of use should remain limited and the hours of limited, regarding noise issues.
- Expanding library. Easier for citizen to get through planning process. Very difficult process with many traps and pitfalls; not user-friendly.
- To maintain the peace just as it is now.
- Manage growth and development so city does not become larger, more congested and houses larger.

- Affordable housing for seniors with Belvedere roots.
- Get downtown in business-not just restaurants and dress shops- it looks awful!
- Keep it as it is!
- Maintain specialness and beauty of the Island.
- To keep its natural beauty assets.
- Preserve Belvedere's unique character and to encourage as many environmentally sound programs (housing, transportation, schools)
- Deer…as in too many- eating all our plants- traffic….most drivers-do not drive the speed posted-most exceed the speed limit posted.
- The important issues in my view it to maintain the beauty and frankly the exclusivity of Belvedere in the future when there may be challenges to "update" things that are quite fine the way they are.
- Managing growth, development. Also maintaining our own police department.
- Preventing overbuilding
- Maintain a town atmosphere, low key status quo. Keep city involvement to a minimum; keep city expenditures to a minimum. Do not spend more on surveys. Keep it simple.
- With most of the garages turned into storage/rec rooms parking will be a major problem even with smaller vehicles it's an issue that needs to be addressed. Setbacks for garages are at the minimum now and things will only get worse as time goes by.
- Maintaining the excellent quality of life.
- Street lights
- Preserving Belvedere's unique character.
- Construction of larger homes.
- Keeping it a small lovely community
- Availability of second unit and more off street walking space.
- Keep property taxes affordable, not everybody is wealthy.
- Maintaining harmony and happiness among the residents and staff of city.
- Earthquake response
- We have loved and treasured living in this beautiful and unique community for 34 years and are satisfied with everything here.
- Emergency plan in the event of a major disaster like earthquake that can then trigger fire, flooding, etc.
- Keep it as it is-not too much oversize residence.
- Traffic on Tiburon Blvd.
- Preserve the character of Belvedere; limit the size of new home/remodels. Preserve view; preserve historical homes.
- Affordable housing for "upper middle-class"
- Maintaining the infrastructure at the current tax rate.
- Density
- Better quality of City Management!!!
- Management of growth
- Completion of utility undergrounding
- Crime
- Creating a more harmonious process for home improvements for the citizens of Belvedere. The current process created an atmosphere of animosity, fueled by anger and frustration. This is the conversation one hears repeatedly in the streets in the evenings and weekends. The Planning Process!
- Maintain and enhance quality of life in Belvedere which includes such matters as sound fiscal management, expanding library building to offer the additional space and services needed and enjoyed by the community and limit size of houses.

- Continued tear down of older homes and building of giant home that dwarf their neighbors and are out of character with the island. Eventually you can envision our little island overrun with huge mansion which would be a shame.
- Get rid of eucalyptus trees, limits construction, limit large scale homes.
- More useful businesses in town, drug store.
- On the Boardwalk, I would like to see a Dollar and Cents store with special items along with small shops, restaurants and services. Move office space upstairs.
- Bring Belvedere's over the top "keep up with neighbors" new construction and add-ons to an eco sustainable level. Less is better!
- Housing-provide housing in all price ranges to be affordable to the work force and seniors, and meet the state mandated affordability responsibility.
- Traffic on Tiburon Blvd.
- Continued participation of maximum number of residents as volunteers in city functions.
- I don't know if this is the single most important issue, but, think one of the most intolerable things about life here is the traffic on Tiburon Blvd. during the school terms.
- Overbuilding! Especially on the lagoon on San Rafael Ave. Houses too tall and too large! Loss of privacy and sun. Loss of good relationships.
- Highway traffic- Tiburon Blvd.
- Road condition and traffic management.
- Disaster preparedness
- The charm of Belvedere was the simplicity of life. I'm afraid that's gone but try to keep things simple. We moved here in 1947 so I have a different view than most. Keep the area.
- Maintaining the status quo: Low-crime, high residency rate, friendly community, safe streets, good DRB.
- Undergrounding whole city (wires)
- Maintaining a clean, safe environment for our family.
- Keep current manager. Keep new Building in similar style. No barrier along San Rafael Ave.
- Reduce the bureaucracy on approved projects/ Important to speed up issuance of Bldg. permits and Bldg. inspections in order for contractors to meet deadlines.
- Preserving Belvedere's unique character.
- Affordable frequent public transportation/useable adult parks
- Deer problem- I truly can NOT believe that something can't be done about this problem. It will only get worse and someone i.e., child or pet will get badly injured. Concern: house too large for property-like mega mansions.
- Security, traffic, roads maintenance.
- Downsizing the deer.
- Maintaining a pharmacy
- Allowing residents to renovate or build environmentally-friendly homes
- Keep the houses smaller on the Lagoon-lots too small!
- Parking, traffic, and too many residential and commercial building houses too large for the lot. Ensuring the City is prepared for an earthquake and other disasters.
- Flood and earthquake preparedness!
- Creating a fair process to remodel/rebuild one's home without putting neighbors against each other. That is, removed arbitrary standards imposed by neighbors and replace with objective standards enforced by staff.
- Emergency planning and implementation, especially related to Global Warming (fire and flood).
- Over-building of the community.
- Safety-no crime!
- Avoidance of overbuilding
- The potential effects of rising sea level as a consequence of global warming/climate change. Traffic along CA-131.

- Provide improved traffic flow-somehow-from City to Highway
- Fire safety-lots of Eucalyptus trees could ignite the island.
- I'm most concerned that our city will lose its charm and scale.
- Self sustaining without state or federal mandates/subsidies.
- Maintaining the beautiful entranceways to the city.
- Degenerating landscape environment-erosion (deer), overgrown trees (Inc. over power lines) and inappropriate (inc. high water use) vegetation.
- Maintaining the rural, natural environment that intertwines through the City while allowing for renewal of homes.
- Don't buy into more government, more regulation, and more compliance. Less is more.
- Green retrofitting and green construction (3A and 3Q). Also: noise control and mid-day ferry service to ferry building in San Francisco.
- Maintaining the status quo.
- Accommodating its aging population needs (incl. moderate cost housing), while encouraging new families to the city.
- Unreasonable/arbitrary staff design review!
- Keeping Belvedere's eclectic charm.
- Improving the level of service of the building department. They are the single worst aspect of this city government. Aside from incompetent, they are mean-spirited and uncaring of the costs being incurred due to their inabilities to perform their jobs efficiently. They are holding us back from improving!
- Security
- How to provide services to a growing elderly population. Dealing with rise in sea level…if that really does happen.
- Continuing proper zoning requirements
- At minimum preserve existing and better yet continually improve tranquility and quality of life in Belvedere.
- Continue the careful work done by the current volunteers and staff.
- Safety, good roads.
- Maintaining a large enough percentage of the population in the form of young families.
- Climate: flooding
- Constant exceptions and approvals to building and zoning ordinances need to stop.
- Preservation- historic homes, Lower Beach Rd. open space to old building.
- Traffic going in and out of Tiburon Blvd.
- Improving the relationship between City staff and residents. That includes education and understanding of all interests, and ongoing efforts to work together and in cooperation for the benefit of the community.
- Keeping the homes a reasonable size and not cutting down the trees-even for a view.
- Managing growth and development.
- Too much power a planning department. One person is the gatekeeper/decision-maker causing great conflicts to the residents of Belvedere. Who want to build/remodel? You should send out a survey to folks who have used planning!
- Repair and create a continuous sidewalk on San Rafael. It is dangerous to have to zigzag across the street to be on the sidewalk this is crazy! Walking is the best exercise and very green.
- Stop the nitpicking of homeowners who wish to make only small insignificant alterations, or repairs to their homes!!
- Consider survey answers from all.
- To create "Community Centers"…such as: intensified development of the Boardwalk: Commercial Living. Buy the two small properties at the park and restore the park as open space to its original configuration…what a great place it could be!!
- Maintaining existing charming character-

- Backed-up traffic on Tub. Blvd. Long waits to come in or leave the peninsula. Only will get worse.
- Nothing stands out
- Strictly enforce zoning laws. Avoid variances.
- Keeping the charm, trees, and privacy between homes - planning for sea rise.
- Maintain character of the island community. Keep development under control. Encourage environmental responsibility.
- Retain its character, restrict mega-mansions, and maintain the infrastructure.
- Too many large homes. Loss of wild life like deer or open space.
- Maintaining the community (rural) feeling. Continue to hold to a master plan for size of homes - density, protection of views, etc.
- Realistic priorities. Managing growth and overdevelopment. Island needs maintenance & infrastructure improvements. Getting rid of deer, clearing bush/weeds, repaving, roadside reflectors, gutters, etc. No more "fluff" like benches, kiddie's parks, and sponsoring commercial events to attract more tourists.
- Planning process seems cumbersome. Particularly when resident owners are trying to improve their properties.
- Police protection and presence. AM traffic on Tiburon Blvd.
- Do not allow building of massive homes. Build condos for older folks.

Appendix D: Questionnaire

CITY of BELVEDERE

450 San Rafael Avenue • Belvedere CA 94920-2336
Tel.: 415.435.3838 • Fax: 415.435.0430
www.cityofbelvedere.org

July 17, 2009

<Name>
<Address>

Dear <Name>:

The City of Belvedere is in the process of updating the City's General Plan, which guides growth and land development of the community for both the current period and the long term. Your input is vital to this planning process, and will help us to develop strategies that are appropriate for our community.

To help inform the City's General Plan Update, we are inviting your household to complete the attached resident survey. Please have only one adult member of the household complete the survey. The surveys will be collected and tabulated by Godbe Research, an independent market research firm commissioned to conduct this survey on behalf of the City. Responses will be kept anonymous at all times and no individualized data will ever be reported or shared.

Please return your completed survey in the enclosed pre-paid envelope by August 10, 2009.

We sincerely hope that you will take a few minutes to complete this important survey. Thank you for your time and participation. We look forward to your feedback!

Sincerely,

George J. Rodericks
City Manager
City of Belvedere

enclosures

City of Belvedere General Plan Update: Resident Survey

The City of Belvedere commissioned this survey to gather resident feedback to help inform the City's General Plan Update. **Please return your completed survey in the enclosed envelope by August 10, 2009**. Thank you for your time!

LOCAL ISSUES:

1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?

Very satisfied | Somewhat satisfied | Somewhat dissatisfied | Very dissatisfied

2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? *Please write your response in the space below.*

3. Please consider the following issues in the City of Belvedere, and rate how important each is to you personally.

	Extremely Important	Very Important	Somewhat Important	Not Important
A. Encouraging sustainable/green building practices				
B. Ensuring the City is prepared for an earthquake and other disasters				
C. Improving Belvedere-Tiburon Library services and facilities				
D. Improving walking paths, public lanes, and steps				
E. Improving existing sidewalks and providing new sidewalks where feasible				
F. Maintaining neighborhood parks				
G. Managing growth and development				
H. Maintaining seawalls and infrastructure for storm-related flooding				
I. Maintaining historic homes and landmarks				
J. Preserving Belvedere's unique character				
K. Preservation of open spaces				
L. Preserving residential scenic views				
M. Preventing wildfires				
N. Providing programs to reduce energy consumption and conserve natural resources				
O. Providing public transportation, carpooling, and other alternatives to driving alone				
P. Providing recreational programs and facilities				
Q. Building partnerships with neighboring communities to share services and facilities				
R. Reducing traffic congestion within the City of Belvedere				

PARKS AND RECREATION FACILITIES AND SERVICES:

4. In the past 12 months, have you or a member of your household attended any recreation program, class or event sponsored by Belvedere-Tiburon Recreation?

Yes No

5. In general, are you satisfied or dissatisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon?

Very satisfied | Somewhat satisfied | Somewhat dissatisfied | Very dissatisfied

6. For each of the following recreational programs and classes, please rate if the availability in Belvedere is important to you or a member of your household.

	Extremely Important	Very Important	Somewhat Important	Not Important
A. After-school and summer programs for children and teens				
B. Children's programs				
C. Teen programs				
D. Adult fitness and wellness programs, such as yoga or tennis				
E. Adult special interest programs, such as bridge games or language classes				

RESIDENTIAL AND COMMERCIAL DEVELOPMENT:

7. Please rate whether you would support or oppose each of the following in Belvedere.

	Strongly Support	Somewhat Support	Somewhat Oppose	Strongly Oppose
A. Development of single-family homes				
B. Development of second units to single-family homes				
C. Development of condominiums				
D. Development of apartments				
E. Development of mixed-use buildings with shops or services on the first floor and condominiums on the upper floors				
F. Development of small shops, restaurants, and services				

8. Please consider the new homes and additions to existing homes that have been built in Belvedere within the past 10 years. In general, do you think these homes are too small, the right size, or too large for the character of the city?

Too small | The right size | Too large

9. The City of Belvedere has an Ordinance that regulates the size of new homes and additions to existing homes. This Ordinance could be revised to include an absolute limit, without exception, on the maximum house size permitted by the City which would be based on the size of the property. Would you support or oppose creating an absolute limit on maximum house size?

Strongly support | Somewhat support | Somewhat oppose | Strongly oppose

10. Pursuant to the Zoning Ordinance, the City of Belvedere can grant a license to property owners to allow private fences along streets and roadways and on other public land. In general, do you support or oppose this practice?

Strongly support | Somewhat support | Somewhat oppose | Strongly oppose

TRANSPORTATION AND COMMUTING:

11. In general, how would you rate traffic flow within the City of Belvedere?

Excellent | Good | Fair | Poor

12. What type of transportation do you typically use to go to work, school, or other places you visit most frequently? *Please check all that apply.*

Bicycle
Bus
Carpool/Ride with others
Drive alone
Ferry
Light rail/Train
Vanpool
Walk
Other, please write your answer _____

13. If applicable, how many miles is your <u>one-way</u> commute from home to work or school?

Less than 10 miles
10 to less than 20 miles
20 to less than 30 miles
30 to less than 40 miles
40 to less than 50 miles
50 to less than 60 miles
60 miles or more
Not applicable

14. If applicable, how many minutes does your <u>one-way</u> commute from home to work or school take?

Less than 15 minutes
15 to less than 30 minutes
30 to less than 45 minutes
45 to less than 60 minutes
60 to less than 90 minutes
90 minutes or more
Not applicable

15. If applicable, in which county is your work or school located?

Alameda County
Contra Costa County
Marin County
Napa County
San Francisco County
San Mateo County
Santa Clara County
Solano County
Sonoma County
Other
Not applicable

16. If a shuttle service were available from Belvedere to park-and-ride lots and bus stops along Highway 101, such as the Strawberry Village Shopping Center or the Alto Shopping Center, how likely would you or a member of your household be to ride the shuttle service? *Please consider any household employees or staff in your response.*

Very likely | Somewhat likely | Somewhat unlikely | Very unlikely

17. During the elementary and middle school year, how important is it to encourage local parents to carpool or use school bus service to improve traffic flow along Tiburon Boulevard?

Extremely important | Very important | Somewhat important | Not important

RESIDENT INFORMATION: Please share your demographic and household information – the following questions will only be used for statistical comparisons.

18. How many years have you lived in Belvedere?

Less than 1 year
1 to 4 years
5 to 9 years
10 to 14 years
15 to 19 years
20 years or more

19. Please check the neighborhood in which you live:

Belvedere Island – including the west side of San Rafael Avenue
Belvedere Lagoon – including Lower Beach Road
Corinthian Island
West Shore Road
Other, please write your answer _____

20. Do you currently rent or own your residence in Belvedere?

Rent
Own

21. Is this residence your primary home, or is it a second home?

Primary home *(Skip ahead to Question 23)*
Second home *(Continue to Question 22)*

22. If this residence is a second home, how many months do you live in Belvedere during a typical year?

Less than 3 months
3 months to less than 6 months
6 months to less than 9 months
9 months to 12 months

23. Do any children under the age of 18 live in your household?

Yes
No

24. Including yourself, if applicable, do any adults age 65 and over live in your household?

Yes
No

25. Which of the following best describes your working status?

Full-time for an employer
Part-time for an employer
Self-employed
Home-based business
Other, please write your answer _____
Unemployed
Homemaker or stay-at-home parent
Retired
Student

26. Which of the following categories includes your age?

18 to 24
25 to 34
35 to 44
45 to 54
55 to 64
65 to 74
75 to 84
85 and over

27. What is your gender?

Male
Female

Thank you again for your time and participation!

Appendix E: Crosstabulation Tables

		Gender		
		Total	Male	Female
1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?	Total	373	172	201
	Very Satisfied	306 81.9%	138 80.3%	168 83.3%
	Somewhat Satisfied	50 13.4%	28 16.1%	22 11.0%
	Somewhat Dissatisfied	13 3.4%	4 2.4%	9 4.4%
	Very Dissatisfied	5 1.3%	2 1.2%	3 1.3%

Comparisons of Column Proportions[a,b]

		Gender	
		Male	Female
		(A)	(B)
1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?	Very Satisfied		
	Somewhat Satisfied		
	Somewhat Dissatisfied		
	Very Dissatisfied		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Age			
		Total	18 to 44	45 to 54	55 to 64
1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?	Total	374	82	82	84
	Very Satisfied	306 81.9%	71 86.5%	59 71.7%	67 80.3%
	Somewhat Satisfied	50 13.4%	9 11.3%	16 18.9%	13 15.8%
	Somewhat Dissatisfied	13 3.4%	2 2.3%	5 5.7%	2 2.6%
	Very Dissatisfied	5 1.3%	0 .0%	3 3.8%	1 1.3%

		Age
		65 and over
1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?	Total	125
	Very Satisfied	108 86.7%
	Somewhat Satisfied	12 9.5%
	Somewhat Dissatisfied	4 3.3%
	Very Dissatisfied	1 .5%

Comparisons of Column Proportions[b,c]

		Age			
		18 to 44	45 to 54	55 to 64	65 and over
		(A)	(B)	(C)	(D)
1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?	Very Satisfied				B
	Somewhat Satisfied				
	Somewhat Dissatisfied				
	Very Dissatisfied	[a] .			

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Length of Residence		
		Total	Less than 5 years	5 to 9 years
1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?	Total	378	47	93
	Very Satisfied	310 82.1%	42 88.2%	76 82.0%
	Somewhat Satisfied	50 13.2%	6 11.8%	15 15.7%
	Somewhat Dissatisfied	13 3.4%	0 .0%	1 .6%
	Very Dissatisfied	5 1.3%	0 .0%	2 1.7%

		Length of Residence	
		10 to 19 years	20 years or more
1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?	Total	95	142
	Very Satisfied	71 74.6%	121 85.1%
	Somewhat Satisfied	17 18.3%	12 8.7%
	Somewhat Dissatisfied	6 6.0%	7 4.6%
	Very Dissatisfied	1 1.2%	2 1.5%

Comparisons of Column Proportions[b,c]

		Length of Residence		
		Less than 5 years	5 to 9 years	10 to 19 years
		(A)	(B)	(C)
1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?	Very Satisfied			
	Somewhat Satisfied			
	Somewhat Dissatisfied	a .		
	Very Dissatisfied	a .		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

Comparisons of Column Proportions[b,c]

		Length of Residence
		20 years or more
		(D)
1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?	Very Satisfied	
	Somewhat Satisfied	
	Somewhat Dissatisfied	
	Very Dissatisfied	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Area of Residence		
		Total	Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road
1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?	Total	374	209	135
	Very Satisfied	306 81.9%	163 77.6%	120 88.7%
	Somewhat Satisfied	50 13.4%	32 15.5%	14 10.5%
	Somewhat Dissatisfied	13 3.4%	11 5.1%	0 .0%
	Very Dissatisfied	5 1.3%	4 1.8%	1 .8%

		Area of Residence	
		Corinthian Island	West Shore Road
1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?	Total	9	21
	Very Satisfied	6 68.1%	18 86.8%
	Somewhat Satisfied	1 13.8%	2 10.3%
	Somewhat Dissatisfied	2 18.1%	1 2.8%
	Very Dissatisfied	0 .0%	0 .0%

Comparisons of Column Proportions[b,c]

		Area of Residence		
		Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road	Corinthian Island
		(A)	(B)	(C)
1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?	Very Satisfied			
	Somewhat Satisfied			
	Somewhat Dissatisfied		a .	
	Very Dissatisfied			a .

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

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Comparisons of Column Proportions[b,c]

		Area of Residence
		West Shore Road
		(D)
1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?	Very Satisfied Somewhat Satisfied Somewhat Dissatisfied Very Dissatisfied	[a]

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Homeownership Status		
		Total	Rent	Own
1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?	Total	376	43	333
	Very Satisfied	308 82.0%	42 97.2%	267 80.1%
	Somewhat Satisfied	50 13.3%	1 1.4%	49 14.8%
	Somewhat Dissatisfied	13 3.4%	1 1.4%	12 3.7%
	Very Dissatisfied	5 1.3%	0 .0%	5 1.4%

Comparisons of Column Proportions[b,c]

		Homeownership Status	
		Rent	Own
		(A)	(B)
1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?	Very Satisfied Somewhat Satisfied Somewhat Dissatisfied Very Dissatisfied	B [a]	A

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Children in the Household		
		Total	Yes	No
1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?	Total	375	104	271
	Very Satisfied	309 82.4%	83 79.9%	226 83.4%
	Somewhat Satisfied	48 12.9%	16 15.3%	32 11.9%
	Somewhat Dissatisfied	13 3.4%	5 4.8%	8 2.9%
	Very Dissatisfied	5 1.3%	0 .0%	5 1.8%

Comparisons of Column Proportions[b,c]

		Children in the Household	
		Yes	No
		(A)	(B)
1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?	Very Satisfied Somewhat Satisfied Somewhat Dissatisfied Very Dissatisfied	[a]	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Seniors in the Household		
		Total	Yes	No
1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?	Total	375	160	215
	Very Satisfied	307 82.0%	139 86.8%	168 78.4%
	Somewhat Satisfied	50 13.3%	13 8.2%	37 17.2%
	Somewhat Dissatisfied	13 3.4%	6 4.0%	7 3.0%
	Very Dissatisfied	5 1.3%	2 1.1%	3 1.4%

Comparisons of Column Proportions[a,b]

		Seniors in the Household	
		Yes	No
		(A)	(B)
1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?	Very Satisfied	B	
	Somewhat Satisfied		A
	Somewhat Dissatisfied		
	Very Dissatisfied		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

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		Employment Status			
		Total	Full-time	Self-Employed/Home-based Business	Retired
1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?	Total	373	92	134	105
	Very Satisfied	308 82.6%	75 81.5%	107 79.3%	92 88.3%
	Somewhat Satisfied	49 13.1%	14 15.2%	20 14.7%	9 8.4%
	Somewhat Dissatisfied	13 3.5%	3 3.3%	7 5.2%	3 2.8%
	Very Dissatisfied	3 .9%	0 .0%	1 .8%	1 .6%

		Employment Status
		Other
1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?	Total	42
	Very Satisfied	34 81.4%
	Somewhat Satisfied	6 14.9%
	Somewhat Dissatisfied	0 .0%
	Very Dissatisfied	2 3.7%

Comparisons of Column Proportions[b,c]

		Employment Status			
		Full-time	Self-Employed/Home-based Business	Retired	Other
		(A)	(B)	(C)	(D)
1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?	Very Satisfied				
	Somewhat Satisfied				
	Somewhat Dissatisfied				
	Very Dissatisfied	a .			a .

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

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		Satisfaction with Quality of Life		
		Total	Very Satisfied	Somewhat Satisfied
1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?	Total	378	310	50
	Very Satisfied	310 82.1%	310 100.0%	0 .0%
	Somewhat Satisfied	50 13.2%	0 .0%	50 100.0%
	Somewhat Dissatisfied	13 3.4%	0 .0%	0 .0%
	Very Dissatisfied	5 1.3%	0 .0%	0 .0%

		Satisfaction with Quality of Life
		Dissatisfied
1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?	Total	18
	Very Satisfied	0 .0%
	Somewhat Satisfied	0 .0%
	Somewhat Dissatisfied	13 72.8%
	Very Dissatisfied	5 27.2%

Comparisons of Column Proportions[b,c]

		Satisfaction with Quality of Life		
		Very Satisfied	Somewhat Satisfied	Dissatisfied
		(A)	(B)	(C)
1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?	Very Satisfied	a .	a .	a .
	Somewhat Satisfied	a .	a .	a .
	Somewhat Dissatisfied	a .	a .	
	Very Dissatisfied	a .	a .	

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		Participation in Recreation programs, classes or events		
		Total	Yes	No
1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?	Total	377	162	215
	Very Satisfied	310 82.2%	134 82.5%	176 82.0%
	Somewhat Satisfied	49 13.1%	24 15.0%	25 11.7%
	Somewhat Dissatisfied	13 3.4%	3 1.9%	10 4.6%
	Very Dissatisfied	5 1.3%	1 .7%	4 1.7%

Comparisons of Column Proportions[a,b]

		Participation in Recreation programs, classes or events	
		Yes	No
		(A)	(B)
1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?	Very Satisfied		
	Somewhat Satisfied		
	Somewhat Dissatisfied		
	Very Dissatisfied		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

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b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Perceived Size of Homes		
		Total	Right Size	Too Large
1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?	Total	361	195	166
	Very Satisfied	296 82.2%	163 83.6%	134 80.5%
	Somewhat Satisfied	48 13.2%	27 13.9%	21 12.5%
	Somewhat Dissatisfied	12 3.2%	3 1.8%	8 5.0%
	Very Dissatisfied	5 1.3%	2 .8%	3 2.0%

Comparisons of Column Proportions[a,b]

		Perceived Size of Homes	
		Right Size	Too Large
		(A)	(B)
1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?	Very Satisfied		
	Somewhat Satisfied		
	Somewhat Dissatisfied		
	Very Dissatisfied		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Traffic Flow Ratings			
		Total	Excellent	Good	Fair/Poor
1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?	Total	372	106	181	84
	Very Satisfied	306 82.2%	95 89.0%	139 76.9%	72 85.2%
	Somewhat Satisfied	48 13.0%	5 5.2%	35 19.5%	8 8.9%
	Somewhat Dissatisfied	13 3.5%	6 5.8%	3 1.8%	3 4.0%
	Very Dissatisfied	5 1.3%	0 .0%	3 1.8%	2 1.8%

Comparisons of Column Proportions[b,c]

		Traffic Flow Ratings		
		Excellent	Good	Fair/Poor
		(A)	(B)	(C)
1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?	Very Satisfied	B		
	Somewhat Satisfied		A	
	Somewhat Dissatisfied			
	Very Dissatisfied	a		

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		Support for Development of Single Family Homes		
		Total	Strongly Support	Somewhat Support
1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?	Total	339	104	151
	Very Satisfied	276 81.3%	88 84.8%	120 79.6%
	Somewhat Satisfied	49 14.6%	12 11.3%	27 17.7%
	Somewhat Dissatisfied	10 2.8%	2 2.4%	3 2.0%
	Very Dissatisfied	4	2	1

		Support for Development of Single Family Homes
		Oppose
1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?	Total	83
	Very Satisfied	67 80.1%
	Somewhat Satisfied	11 12.9%
	Somewhat Dissatisfied	4 5.1%
	Very Dissatisfied	2 1.9%

Comparisons of Column Proportions[a,b]

		Support for Development of Single Family Homes		
		Strongly Support	Somewhat Support	Oppose
		(A)	(B)	(C)
1. In general, are you satisfied or dissatisfied with quality of life in the City of Belvedere?	Very Satisfied			
	Somewhat Satisfied			
	Somewhat Dissatisfied			
	Very Dissatisfied			

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Gender		
		Total	Male	Female
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Total	274	138	136
	Affordable housing	7 2.6%	3 2.4%	4 2.8%
	Managing growth/development	20 7.3%	9 6.6%	11 8.0%
	Controlling the size of houses	36 13.2%	17 12.1%	19 14.3%
	Development of current City facilities	6 2.3%	4 2.9%	2 1.7%
	Emergency preparedness	11 4.1%	5 3.4%	7 4.9%
	Global warming/climate change	12 4.5%	5 3.8%	7 5.3%
	Maintaining character of the community	57 20.8%	29 21.3%	28 20.2%
	Maintaining public safety	17 6.4%	5 3.8%	12 9.0%
	Maintaining the quality of life	7 2.6%	4 2.8%	3 2.4%
	Parking	5 1.8%	3 2.0%	2 1.7%
	Recreation/community programs	9 3.2%	4 2.8%	5 3.6%
	Reducing deer population	19 7.0%	8 5.7%	11 8.3%
	Rising sea level	21 7.8%	11 7.7%	11 7.9%
	Soil erosion	2	0	2

		Gender		
		Total	Male	Female
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Soil erosion	.7%	.0%	1.4%
	Traffic safety/congestion	33 11.9%	15 10.6%	18 13.3%
	Upgrading/maintaining the infrastructure	27 9.9%	15 11.2%	12 8.6%
	Improving retail stores/restaurant options	13 4.6%	3 2.5%	9 6.8%
	Sound financial management	13 4.8%	6 4.4%	7 5.2%
	Noise	4 1.5%	1 .4%	3 2.6%
	Strict enforcement of building codes/design guidelines	4 1.6%	1 .8%	3 2.4%
	Undergrounding utilities	4 1.5%	3 2.1%	1 .8%
	High taxes	5 1.7%	3 2.2%	2 1.1%
	Bureaucratic/unfriendly planning department	23 8.3%	15 10.8%	8 5.8%
	Environmental sustainability	10 3.5%	2 1.6%	8 5.6%
	Incompetent/unfriendly City staff	5 2.0%	4 2.8%	2 1.1%
	Harmony between neighbors	3 1.2%	2 1.6%	1 .9%
	Availability of public transportation	3 1.1%	1 .4%	2 1.7%
	Independent services and programs for residents	3 1.0%	1 .9%	2 1.1%
	Inappropriate vegetation	6 2.1%	3 2.3%	3 2.0%
	Other	20 7.4%	12 8.7%	8 6.0%
	Nothing specific	3 1.1%	2 1.3%	1 .8%

Comparisons of Column Proportions[b,c]

		Gender	
		Male	Female
		(A)	(B)
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Affordable housing Managing growth/development Controlling the size of houses Development of current City facilities Emergency preparedness Global warming/climate change Maintaining character of the community Maintaining public safety Maintaining the quality of life Parking Recreation/community programs Reducing deer population Rising sea level Soil erosion Traffic safety/congestion Upgrading/maintaining the infrastructure Improving retail stores/restaurant options Sound financial management Noise Strict enforcement of building codes/design guidelines Undergrounding utilities High taxes Bureaucratic/unfriendly planning department Environmental sustainability Incompetent/unfriendly City staff Harmony between neighbors	[a] .	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

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Comparisons of Column Proportions[b,c]

		Gender	
		Male	Female
		(A)	(B)
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Availability of public transportation		
	Independent services and programs for residents		
	Inappropriate vegetation		
	Other		
	Nothing specific		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

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c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Age			
		Total	18 to 44	45 to 54	55 to 64
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Total	275	41	67	68
	Affordable housing	9 3.2%	0 .0%	5 7.0%	1 1.6%
	Managing growth/development	20 7.2%	0 .0%	6 9.3%	7 9.7%
	Controlling the size of houses	36 13.1%	2 4.5%	3 4.7%	12 17.7%
	Development of current City facilities	6 2.3%	0 .0%	0 .0%	3 4.8%
	Emergency preparedness	11 4.1%	6 13.6%	0 .0%	2 3.2%
	Global warming/climate change	12 4.5%	4 9.1%	5 7.0%	1 1.6%
	Maintaining character of the community	58 20.9%	4 9.1%	11 16.3%	20 29.0%
	Maintaining public safety	17 6.3%	4 9.1%	6 9.3%	3 4.8%
	Maintaining the quality of life	7 2.6%	0 .0%	3 4.7%	1 1.6%
	Parking	5 1.8%	0 .0%	2 2.3%	1 1.6%
	Recreation/community programs	9 3.2%	0 .0%	5 7.0%	1 1.6%
	Reducing deer population	19	4	5	7

		Age
		65 and over
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Total	99
	Affordable housing	3 3.0%
	Managing growth/development	7 7.2%
	Controlling the size of houses	19 19.2%
	Development of current City facilities	3 3.0%
	Emergency preparedness	4 3.6%
	Global warming/climate change	3 3.0%
	Maintaining character of the community	23 23.4%
	Maintaining public safety	4 4.2%
	Maintaining the quality of life	3 3.0%
	Parking	2 2.4%
	Recreation/community programs	3 3.0%
	Reducing deer population	4

		Age			
		Total	18 to 44	45 to 54	55 to 64
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Reducing deer population	7.0%	9.1%	7.0%	9.7%
	Rising sea level	21 7.8%	9 22.7%	3 4.7%	7 9.7%
	Soil erosion	2 .7%	2 4.5%	0 .0%	0 .0%
	Traffic safety/congestion	33 11.9%	2 4.5%	8 11.6%	9 12.9%
	Upgrading/maintaining the infrastructure	27 9.9%	4 9.1%	16 23.3%	4 6.5%
	Improving retail stores/restaurant options	12 4.2%	0 .0%	3 4.7%	4 6.5%
	Sound financial management	13 4.8%	4 9.1%	3 4.7%	2 3.2%
	Noise	4 1.5%	0 .0%	0 .0%	1 1.6%
	Strict enforcement of building codes/design guidelines	4 1.6%	0 .0%	2 2.3%	1 1.6%
	Undergrounding utilities	4 1.4%	0 .0%	0 .0%	2 3.2%
	High taxes	5 1.7%	2 4.5%	2 2.3%	0 .0%
	Bureaucratic/unfriendly planning department	23 8.3%	6 13.6%	5 7.0%	7 9.7%
	Environmental sustainability	10 3.7%	4 9.1%	3 4.7%	1 1.6%
	Incompetent/unfriendly City staff	5 2.0%	0 .0%	3 4.7%	0 .0%
	Harmony between neighbors	3 1.2%	0 .0%	2 2.3%	0 .0%
	Availability of public transportation	3 1.1%	0 .0%	0 .0%	0 .0%
	Independent services and programs for residents	3 1.0%	0 .0%	2 2.3%	0 .0%
	Inappropriate vegetation	6 2.1%	0 .0%	5 7.0%	1 1.6%
	Other	20 7.3%	4 9.1%	6 9.3%	6 8.1%
	Nothing specific	3 1.0%	0 .0%	0 .0%	1 1.6%

		Age
		65 and over
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Reducing deer population	4.2%
	Rising sea level	2 2.4%
	Soil erosion	0 .0%
	Traffic safety/congestion	14 14.4%
	Upgrading/maintaining the infrastructure	4 3.6%
	Improving retail stores/restaurant options	4 4.2%
	Sound financial management	4 4.2%
	Noise	3 3.0%
	Strict enforcement of building codes/design guidelines	2 1.8%
	Undergrounding utilities	2 1.8%
	High taxes	1 1.2%
	Bureaucratic/unfriendly planning department	6 6.0%
	Environmental sustainability	2 2.4%
	Incompetent/unfriendly City staff	2 2.4%
	Harmony between neighbors	2 1.8%
	Availability of public transportation	3 3.0%
	Independent services and programs for residents	1 1.2%
	Inappropriate vegetation	0 .0%
	Other	5 4.8%
	Nothing specific	2 1.8%

Comparisons of Column Proportions[b,c]

		Age			
		18 to 44	45 to 54	55 to 64	65 and over
		(A)	(B)	(C)	(D)
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Affordable housing	a .			
	Managing growth/development	a .			
	Controlling the size of houses				B
	Development of current City facilities	a .	a .		
	Emergency preparedness		a .		
	Global warming/climate change				
	Maintaining character of the community				
	Maintaining public safety				
	Maintaining the quality of life	a .			
	Parking	a .			
	Recreation/community programs	a .			
	Reducing deer population				
	Rising sea level	B D			
	Soil erosion		a .	a .	a .
	Traffic safety/congestion				
	Upgrading/maintaining the infrastructure		C D		
	Improving retail stores/restaurant options	a .			
	Sound financial management				
	Noise	a .	a .		
	Strict enforcement of building codes/design guidelines	a .			
	Undergrounding utilities	a .	a .		
	High taxes			a .	
	Bureaucratic/unfriendly planning department				
	Environmental sustainability				
	Incompetent/unfriendly City staff	a .		a .	
	Harmony between neighbors	a .		a .	
	Availability of public transportation	a .	a .	a .	

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Comparisons of Column Proportions[b,c]

		Age			
		18 to 44	45 to 54	55 to 64	65 and over
		(A)	(B)	(C)	(D)
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Independent services and programs for residents	a .		a .	
	Inappropriate vegetation	a .			a .
	Other				
	Nothing specific	a .	a .		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Length of Residence		
		Total	Less than 5 years	5 to 9 years
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Total	276	38	60
	Affordable housing	9 3.2%	0 .0%	2 2.6%
	Managing growth/development	21 7.6%	2 5.7%	5 8.9%
	Controlling the size of houses	37 13.4%	3 8.6%	5 8.4%
	Development of current City facilities	6 2.3%	0 .0%	0 .0%
	Emergency preparedness	11 4.1%	2 4.9%	0 .0%
	Global warming/climate change	12 4.5%	3 8.6%	5 8.9%
	Maintaining character of the community	59 21.2%	9 23.6%	11 19.0%
	Maintaining public safety	17 6.3%	1 2.9%	6 10.4%
	Maintaining the quality of life	7 2.6%	1 2.9%	2 3.6%
	Parking	5 1.8%	1 1.6%	1 1.0%
	Recreation/community programs	9 3.2%	0 .0%	3 4.5%
	Reducing deer population	19 6.9%	5 11.9%	6 9.4%
	Rising sea level	21	7	4

		Length of Residence	
		10 to 19 years	20 years or more
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Total	69	110
	Affordable housing	4 6.3%	3 2.6%
	Managing growth/development	3 4.2%	11 9.6%
	Controlling the size of houses	9 12.7%	20 18.2%
	Development of current City facilities	2 3.3%	4 3.6%
	Emergency preparedness	5 7.2%	5 4.1%
	Global warming/climate change	2 3.1%	2 1.6%
	Maintaining character of the community	13 18.8%	25 23.0%
	Maintaining public safety	4 5.4%	6 5.8%
	Maintaining the quality of life	2 3.1%	2 1.6%
	Parking	3 3.9%	1 1.1%
	Recreation/community programs	3 4.5%	3 2.7%
	Reducing deer population	3 4.1%	6 5.6%
	Rising sea level	6	4

		Length of Residence		
		Total	Less than 5 years	5 to 9 years
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Rising sea level	7.7%	18.4%	6.3%
	Soil erosion	2 .7%	2 4.9%	0 .0%
	Traffic safety/congestion	33 11.8%	5 14.0%	6 10.7%
	Upgrading/maintaining the infrastructure	27 9.9%	4 9.8%	10 16.9%
	Improving retail stores/restaurant options	13 4.6%	2 4.1%	4 7.3%
	Sound financial management	13 4.8%	2 4.9%	2 4.1%
	Noise	4 1.5%	2 4.5%	0 .0%
	Strict enforcement of building codes/design guidelines	4 1.6%	2 4.1%	1 1.0%
	Undergrounding utilities	4 1.4%	1 2.9%	0 .0%
	High taxes	4 1.5%	2 4.9%	0 .0%
	Bureaucratic/unfriendly planning department	23 8.2%	2 4.9%	5 7.7%
	Environmental sustainability	10 3.7%	5 12.1%	2 2.6%
	Incompetent/unfriendly City staff	5 2.0%	2 4.1%	1 1.0%
	Harmony between neighbors	3 1.2%	1 1.6%	0 .0%
	Availability of public transportation	3 1.1%	1 1.6%	0 .0%
	Independent services and programs for residents	3 1.0%	0 .0%	2 2.6%
	Inappropriate vegetation	6 2.1%	0 .0%	2 2.6%
	Other	20 7.3%	2 5.8%	9 14.6%
	Nothing specific	3 1.0%	0 .0%	0 .0%

		Length of Residence	
		10 to 19 years	20 years or more
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Rising sea level	9.1%	4.1%
	Soil erosion	0 .0%	0 .0%
	Traffic safety/congestion	3 4.9%	18 16.0%
	Upgrading/maintaining the infrastructure	8 11.5%	6 5.0%
	Improving retail stores/restaurant options	1 1.6%	6 5.1%
	Sound financial management	3 4.5%	6 5.2%
	Noise	0 .0%	2 2.1%
	Strict enforcement of building codes/design guidelines	1 .9%	2 1.5%
	Undergrounding utilities	2 2.5%	1 1.1%
	High taxes	2 3.1%	0 .0%
	Bureaucratic/unfriendly planning department	8 11.0%	9 8.0%
	Environmental sustainability	2 2.7%	2 2.1%
	Incompetent/unfriendly City staff	2 2.3%	2 1.6%
	Harmony between neighbors	0 .0%	3 2.5%
	Availability of public transportation	1 .9%	2 1.6%
	Independent services and programs for residents	0 .0%	1 1.1%
	Inappropriate vegetation	3 3.9%	2 1.4%
	Other	3 4.0%	7 6.0%
	Nothing specific	0 .0%	3 2.6%

Comparisons of Column Proportions[b,c]

		Length of Residence	
		Less than 5 years	5 to 9 years
		(A)	(B)
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Affordable housing	a .	
	Managing growth/development		
	Controlling the size of houses		
	Development of current City facilities	a .	a .
	Emergency preparedness		a .
	Global warming/climate change		
	Maintaining character of the community		
	Maintaining public safety		
	Maintaining the quality of life		
	Parking		
	Recreation/community programs	a .	
	Reducing deer population		
	Rising sea level	D	
	Soil erosion		a .
	Traffic safety/congestion		
	Upgrading/maintaining the infrastructure		
	Improving retail stores/restaurant options		
	Sound financial management		
	Noise		a .
	Strict enforcement of building codes/design guidelines		
	Undergrounding utilities		a .
	High taxes		a .
	Bureaucratic/unfriendly planning department		
	Environmental sustainability		
	Incompetent/unfriendly City staff		
	Harmony between neighbors		a .
	Availability of public transportation		a .

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a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before

Comparisons of Column Proportions[b,c]

		Length of Residence	
		10 to 19 years	20 years or more
		(C)	(D)
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Affordable housing		
	Managing growth/development		
	Controlling the size of houses		
	Development of current City facilities		
	Emergency preparedness		
	Global warming/climate change		
	Maintaining character of the community		
	Maintaining public safety		
	Maintaining the quality of life		
	Parking		
	Recreation/community programs		
	Reducing deer population		
	Rising sea level		
	Soil erosion	a .	a .
	Traffic safety/congestion		
	Upgrading/maintaining the infrastructure		
	Improving retail stores/restaurant options		
	Sound financial management		
	Noise	a .	
	Strict enforcement of building codes/design guidelines		
	Undergrounding utilities		
	High taxes		a .
	Bureaucratic/unfriendly planning department		
	Environmental sustainability		
	Incompetent/unfriendly City staff		
	Harmony between neighbors	a .	
	Availability of public transportation		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

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Comparisons of Column Proportions[b,c]

		Length of Residence	
		Less than 5 years	5 to 9 years
		(A)	(B)
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Independent services and programs for residents	a .	
	Inappropriate vegetation	a .	
	Other		
	Nothing specific	a .	a .

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

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c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

Comparisons of Column Proportions[b,c]

		Length of Residence	
		10 to 19 years	20 years or more
		(C)	(D)
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Independent services and programs for residents	a .	
	Inappropriate vegetation		
	Other		
	Nothing specific	a .	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Area of Residence		
		Total	Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Total	274	141	107
	Affordable housing	9 3.2%	3 1.9%	5 5.0%
	Managing growth/development	21 7.6%	10 7.3%	10 9.4%
	Controlling the size of houses	36 13.3%	18 13.0%	17 16.3%
	Development of current City facilities	6 2.3%	4 2.8%	2 2.1%
	Emergency preparedness	11 4.1%	2 1.2%	7 6.2%
	Global warming/climate change	12 4.6%	3 1.9%	8 7.6%
	Maintaining character of the community	57 21.0%	35 25.0%	21 19.4%
	Maintaining public safety	17 6.4%	12 8.6%	3 3.2%
	Maintaining the quality of life	7 2.6%	5 3.8%	2 1.7%
	Parking	5 1.8%	3 2.3%	2 1.7%
	Recreation/community programs	9 3.2%	2 1.5%	5 5.0%
	Reducing deer population	19 7.0%	16 11.0%	2 1.7%
	Rising sea level	21 7.8%	5 3.7%	16 15.1%
	Soil erosion	2 .7%	2 1.3%	0 .0%
	Traffic safety/congestion	32 11.7%	14 9.7%	14 13.3%
	Upgrading/maintaining the infrastructure	27 10.0%	15 10.5%	9 8.6%
	Improving retail stores/restaurant options	12 4.3%	3 2.3%	8 7.8%
	Sound financial management	13 4.8%	10 7.4%	1 1.1%
	Noise	4 1.5%	1 .8%	2 2.1%
	Strict enforcement of building codes/design guidelines	4	2	2

		Area of Residence	
		Corinthian Island	West Shore Road
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Total	9	17
	Affordable housing	1 6.9%	0 .0%
	Managing growth/development	0 .0%	1 3.5%
	Controlling the size of houses	0 .0%	1 3.5%
	Development of current City facilities	0 .0%	0 .0%
	Emergency preparedness	1 6.9%	2 14.6%
	Global warming/climate change	0 .0%	2 9.3%
	Maintaining character of the community	0 .0%	1 7.1%
	Maintaining public safety	0 .0%	2 11.1%
	Maintaining the quality of life	0 .0%	0 .0%
	Parking	0 .0%	0 .0%
	Recreation/community programs	1 13.8%	0 .0%
	Reducing deer population	0 .0%	2 10.1%
	Rising sea level	0 .0%	0 .0%
	Soil erosion	0 .0%	0 .0%
	Traffic safety/congestion	3 33.5%	1 7.1%
	Upgrading/maintaining the infrastructure	0 .0%	3 18.6%
	Improving retail stores/restaurant options	0 .0%	0 .0%
	Sound financial management	0 .0%	2 9.3%
	Noise	1 6.9%	0 .0%
	Strict enforcement of building codes/design guidelines	1	0

		Area of Residence		
		Total	Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Strict enforcement of building codes/design guidelines	1.6%	1.6%	1.5%
	Undergrounding utilities	4 1.5%	3 2.4%	1 .6%
	High taxes	5 1.7%	4 2.8%	1 .6%
	Bureaucratic/unfriendly planning department	23 8.3%	12 8.5%	9 8.6%
	Environmental sustainability	10 3.8%	6 4.5%	3 3.1%
	Incompetent/unfriendly City staff	5 2.0%	3 1.9%	1 1.1%
	Harmony between neighbors	3 1.2%	2 1.5%	1 1.1%
	Availability of public transportation	3 1.1%	2 1.3%	1 .6%
	Independent services and programs for residents	3 1.0%	1 .4%	2 2.0%
	Inappropriate vegetation	6 2.1%	4 3.0%	0 .0%
	Other	20 7.4%	10 7.3%	9 8.7%
	Nothing specific	3 1.1%	1 .8%	2 1.6%

		Area of Residence	
		Corinthian Island	West Shore Road
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Strict enforcement of building codes/design guidelines	6.9%	.0%
	Undergrounding utilities	0 .0%	0 .0%
	High taxes	0 .0%	0 .0%
	Bureaucratic/unfriendly planning department	2 18.1%	0 .0%
	Environmental sustainability	1 6.9%	0 .0%
	Incompetent/unfriendly City staff	0 .0%	2 9.3%
	Harmony between neighbors	0 .0%	0 .0%
	Availability of public transportation	1 6.9%	0 .0%
	Independent services and programs for residents	0 .0%	0 .0%
	Inappropriate vegetation	0 .0%	2 9.3%
	Other	1 6.9%	0 .0%
	Nothing specific	0 .0%	0 .0%

Comparisons of Column Proportions[b,c]

		Area of Residence	
		Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road
		(A)	(B)
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Affordable housing		
	Managing growth/development		
	Controlling the size of houses		
	Development of current City facilities		
	Emergency preparedness		
	Global warming/climate change		
	Maintaining character of the community		
	Maintaining public safety		
	Maintaining the quality of life		
	Parking		
	Recreation/community programs		
	Reducing deer population	B	
	Rising sea level		A
	Soil erosion		a.
	Traffic safety/congestion		
	Upgrading/maintaining the infrastructure		
	Improving retail stores/restaurant options		A
	Sound financial management		
	Noise		
	Strict enforcement of building codes/design guidelines		
	Undergrounding utilities		
	High taxes		
	Bureaucratic/unfriendly planning department		
	Environmental sustainability		
	Incompetent/unfriendly City staff		

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Comparisons of Column Proportions[b,c]

		Area of Residence	
		Corinthian Island	West Shore Road
		(C)	(D)
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Affordable housing		a.
	Managing growth/development	a.	
	Controlling the size of houses	a.	
	Development of current City facilities	a.	a.
	Emergency preparedness		A
	Global warming/climate change	a.	
	Maintaining character of the community	a.	
	Maintaining public safety	a.	
	Maintaining the quality of life	a.	a.
	Parking	a.	a.
	Recreation/community programs	A	a.
	Reducing deer population	a.	
	Rising sea level	a.	a.
	Soil erosion	a.	a.
	Traffic safety/congestion		
	Upgrading/maintaining the infrastructure	a.	
	Improving retail stores/restaurant options	a.	a.
	Sound financial management	a.	
	Noise		a.
	Strict enforcement of building codes/design guidelines		a.
	Undergrounding utilities	a.	a.
	High taxes	a.	a.
	Bureaucratic/unfriendly planning department		a.
	Environmental sustainability		a.
	Incompetent/unfriendly City staff	a.	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

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c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

Comparisons of Column Proportions[b,c]

		Area of Residence	
		Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road
		(A)	(B)
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Harmony between neighbors		
	Availability of public transportation		
	Independent services and programs for residents		
	Inappropriate vegetation		[a] .
	Other		
	Nothing specific		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

Comparisons of Column Proportions[b,c]

		Area of Residence	
		Corinthian Island	West Shore Road
		(C)	(D)
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Harmony between neighbors	[a] .	[a] .
	Availability of public transportation		[a] .
	Independent services and programs for residents	[a] .	[a] .
	Inappropriate vegetation	[a] .	
	Other		[a] .
	Nothing specific	[a] .	[a] .

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Homeownership Status		
		Total	Rent	Own
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Total	275	30	246
	Affordable housing	7 2.6%	1 4.0%	6 2.4%
	Managing growth/development	21 7.6%	4 13.0%	17 6.9%
	Controlling the size of houses	37 13.4%	5 15.7%	32 13.2%
	Development of current City facilities	6 2.3%	1 2.0%	6 2.3%
	Emergency preparedness	11 4.1%	0 .0%	11 4.6%
	Global warming/climate change	12 4.5%	1 2.0%	12 4.8%
	Maintaining character of the community	59 21.2%	8 25.5%	51 20.7%
	Maintaining public safety	17 6.3%	4 13.0%	14 5.5%
	Maintaining the quality of life	7 2.6%	1 4.0%	6 2.4%
	Parking	5 1.8%	1 4.0%	4 1.6%
	Recreation/community programs	9 3.2%	4 13.0%	5 2.0%
	Reducing deer population	19 6.9%	2 6.3%	17 7.0%
	Rising sea level	21 7.8%	1 2.0%	21 8.5%
	Soil erosion	2 .7%	2 6.3%	0 .0%
	Traffic safety/congestion	33 11.9%	7 23.8%	26 10.4%
	Upgrading/maintaining the infrastructure	27 9.9%	5 15.6%	23 9.2%
	Improving retail stores/restaurant options	13 4.6%	2 5.3%	11 4.5%
	Sound financial management	13 4.8%	1 4.0%	12 4.9%
	Noise	4 1.5%	0 .0%	4 1.7%
	Strict enforcement of building codes/design guidelines	4 1.6%	0 .0%	4 1.8%
	Undergrounding utilities	4 1.4%	0 .0%	4 1.6%
	High taxes	5 1.7%	0 .0%	5 1.9%

		Homeownership Status		
		Total	Rent	Own
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Bureaucratic/unfriendly planning department	23 8.3%	1 2.0%	22 9.0%
	Environmental sustainability	10 3.7%	1 2.0%	10 3.9%
	Incompetent/unfriendly City staff	5 2.0%	1 2.0%	5 2.0%
	Harmony between neighbors	3 1.2%	1 2.0%	3 1.1%
	Availability of public transportation	3 1.1%	0 .0%	3 1.2%
	Independent services and programs for residents	3 1.0%	2 5.3%	1 .5%
	Inappropriate vegetation	6 2.1%	0 .0%	6 2.3%
	Other	20 7.3%	4 12.0%	17 6.8%
	Nothing specific	3 1.0%	0 .0%	3 1.2%

Comparisons of Column Proportions[b,c]

		Homeownership Status	
		Rent	Own
		(A)	(B)
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Affordable housing		
	Managing growth/development		
	Controlling the size of houses		
	Development of current City facilities		
	Emergency preparedness	[a] .	
	Global warming/climate change		
	Maintaining character of the community		
	Maintaining public safety		
	Maintaining the quality of life		
	Parking		
	Recreation/community programs	B	

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Comparisons of Column Proportions[b,c]

		Homeownership Status	
		Rent	Own
		(A)	(B)
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Reducing deer population		
	Rising sea level		
	Soil erosion		[a] .
	Traffic safety/congestion	B	
	Upgrading/maintaining the infrastructure		
	Improving retail stores/restaurant options		
	Sound financial management		
	Noise	[a] .	
	Strict enforcement of building codes/design guidelines	[a] .	
	Undergrounding utilities	[a] .	
	High taxes	[a] .	
	Bureaucratic/unfriendly planning department		
	Environmental sustainability		
	Incompetent/unfriendly City staff		
	Harmony between neighbors		
	Availability of public transportation	[a] .	
	Independent services and programs for residents	B	
	Inappropriate vegetation	[a] .	
	Other		
	Nothing specific	[a] .	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Children in the Household		
		Total	Yes	No
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Total	276	87	189
	Affordable housing	9 3.2%	4 4.2%	5 2.7%
	Managing growth/development	21 7.6%	3 3.6%	18 9.4%
	Controlling the size of houses	37 13.4%	5 5.7%	32 17.0%
	Development of current City facilities	6 2.3%	0 .0%	6 3.3%
	Emergency preparedness	11 4.1%	6 6.4%	6 3.0%
	Global warming/climate change	12 4.5%	8 9.6%	4 2.2%
	Maintaining character of the community	59 21.2%	11 13.0%	47 24.9%
	Maintaining public safety	17 6.3%	5 5.2%	13 6.8%
	Maintaining the quality of life	7 2.6%	2 1.9%	5 2.9%
	Parking	5 1.8%	2 1.8%	3 1.8%
	Recreation/community programs	9 3.2%	3 3.6%	6 3.0%
	Reducing deer population	19 6.9%	4 4.3%	15 8.2%
	Rising sea level	21 7.7%	11 12.1%	11 5.7%
	Soil erosion	2 .7%	2 2.1%	0 .0%
	Traffic safety/congestion	33 11.8%	3 3.0%	30 15.9%
	Upgrading/maintaining the infrastructure	27 9.9%	8 9.2%	19 10.1%
	Improving retail stores/restaurant options	12 4.4%	3 3.0%	9 5.0%
	Sound financial management	13 4.8%	6 7.3%	7 3.6%
	Noise	4 1.5%	0 .0%	4 2.2%
	Strict enforcement of building codes/design guidelines	4 1.6%	2 1.8%	3 1.5%
	Undergrounding utilities	4 1.4%	1 1.3%	3 1.5%
	High taxes	5 1.7%	3 3.9%	1 .6%

		Children in the Household		
		Total	Yes	No
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Bureaucratic/unfriendly planning department	23 8.2%	9 10.1%	14 7.4%
	Environmental sustainability	10 3.7%	7 7.8%	3 1.8%
	Incompetent/unfriendly City staff	5 2.0%	3 3.6%	2 1.3%
	Harmony between neighbors	3 1.2%	0 .0%	3 1.8%
	Availability of public transportation	2 .9%	0 .0%	2 1.3%
	Independent services and programs for residents	3 1.0%	0 .0%	3 1.5%
	Inappropriate vegetation	6 2.1%	2 1.8%	4 2.2%
	Other	20 7.3%	10 11.0%	11 5.6%
	Nothing specific	3 1.0%	0 .0%	3 1.5%

Comparisons of Column Proportions[b,c]

		Children in the Household	
		Yes	No
		(A)	(B)
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Affordable housing		
	Managing growth/development		
	Controlling the size of houses		A
	Development of current City facilities	a.	
	Emergency preparedness		
	Global warming/climate change	B	
	Maintaining character of the community		A
	Maintaining public safety		
	Maintaining the quality of life		
	Parking		
	Recreation/community programs		

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a. This category is not used in comparisons because its column proportion is equal to zero or one.

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c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

Comparisons of Column Proportions[b,c]

		Children in the Household	
		Yes	No
		(A)	(B)
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Reducing deer population		
	Rising sea level		
	Soil erosion		[a] .
	Traffic safety/congestion		A
	Upgrading/maintaining the infrastructure		
	Improving retail stores/restaurant options		
	Sound financial management		
	Noise	[a] .	
	Strict enforcement of building codes/design guidelines		
	Undergrounding utilities		
	High taxes	B	
	Bureaucratic/unfriendly planning department		
	Environmental sustainability	B	
	Incompetent/unfriendly City staff		
	Harmony between neighbors	[a] .	
	Availability of public transportation	[a] .	
	Independent services and programs for residents	[a] .	
	Inappropriate vegetation		
	Other		
	Nothing specific	[a] .	

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		Seniors in the Household		
		Total	Yes	No
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Total	274	116	158
	Affordable housing	9 3.2%	3 2.6%	6 3.6%
	Managing growth/development	21 7.6%	9 7.9%	12 7.4%
	Controlling the size of houses	37 13.5%	22 18.6%	15 9.8%
	Development of current City facilities	6 2.3%	3 2.6%	3 2.1%
	Emergency preparedness	11 4.1%	4 3.1%	8 4.9%
	Global warming/climate change	12 4.5%	4 3.5%	8 5.3%
	Maintaining character of the community	59 21.3%	30 25.5%	29 18.3%
	Maintaining public safety	17 6.3%	5 4.7%	12 7.6%
	Maintaining the quality of life	7 2.6%	3 2.6%	4 2.7%
	Parking	5 1.8%	2 2.0%	3 1.7%
	Recreation/community programs	7 2.6%	3 2.6%	4 2.7%
	Reducing deer population	19 7.0%	6 5.0%	13 8.4%
	Rising sea level	21 7.8%	5 3.9%	17 10.6%
	Soil erosion	2 .7%	0 .0%	2 1.2%
	Traffic safety/congestion	32 11.5%	15 13.2%	16 10.3%
	Upgrading/maintaining the infrastructure	27 9.9%	5 4.0%	23 14.2%
	Improving retail stores/restaurant options	11 4.0%	4 3.6%	7 4.4%
	Sound financial management	13 4.8%	5 4.5%	8 5.0%
	Noise	4 1.5%	4 3.5%	0 .0%
	Strict enforcement of building codes/design guidelines	4 1.6%	2 1.5%	3 1.7%
	Undergrounding utilities	4 1.5%	3 2.5%	1 .7%
	High taxes	5 1.7%	1 1.0%	3 2.2%

		Seniors in the Household		
		Total	Yes	No
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Bureaucratic/unfriendly planning department	23 8.3%	7 6.1%	16 9.9%
	Environmental sustainability	10 3.8%	5 4.3%	5 3.3%
	Incompetent/unfriendly City staff	5 2.0%	2 2.0%	3 2.0%
	Harmony between neighbors	3 1.2%	2 1.5%	2 1.0%
	Availability of public transportation	3 1.1%	3 2.6%	0 .0%
	Independent services and programs for residents	3 1.0%	1 1.0%	2 1.0%
	Inappropriate vegetation	6 2.1%	0 .0%	6 3.6%
	Other	20 7.4%	4 3.6%	16 10.1%
	Nothing specific	3 1.0%	2 1.5%	1 .7%

Comparisons of Column Proportions[b,c]

		Seniors in the Household	
		Yes	No
		(A)	(B)
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Affordable housing Managing growth/development Controlling the size of houses Development of current City facilities Emergency preparedness Global warming/climate change Maintaining character of the community Maintaining public safety Maintaining the quality of life Parking Recreation/community programs	B	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

Comparisons of Column Proportions[b,c]

		Seniors in the Household	
		Yes	No
		(A)	(B)
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Reducing deer population		
	Rising sea level		A
	Soil erosion	a .	
	Traffic safety/congestion		
	Upgrading/maintaining the infrastructure		A
	Improving retail stores/restaurant options		
	Sound financial management		
	Noise		a .
	Strict enforcement of building codes/design guidelines		
	Undergrounding utilities		
	High taxes		
	Bureaucratic/unfriendly planning department		
	Environmental sustainability		
	Incompetent/unfriendly City staff		
	Harmony between neighbors		
	Availability of public transportation		a .
	Independent services and programs for residents		
	Inappropriate vegetation	a .	
	Other		A
	Nothing specific		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

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		Employment Status			
		Total	Full-time	Self-Employed/Home-based Business	Retired
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Total	273	60	110	82
	Affordable housing	9 3.2%	2 2.6%	5 4.4%	2 2.2%
	Managing growth/development	21 7.7%	5 9.0%	4 4.1%	7 8.9%
	Controlling the size of houses	37 13.6%	2 2.8%	17 15.4%	16 19.0%
	Development of current City facilities	6 2.3%	0 .0%	3 2.6%	3 4.2%
	Emergency preparedness	11 4.2%	3 4.9%	3 2.8%	3 4.2%
	Global warming/climate change	12 4.6%	2 3.6%	5 4.8%	3 4.2%
	Maintaining character of the community	59 21.4%	10 16.1%	24 22.1%	21 25.3%
	Maintaining public safety	17 6.4%	3 4.9%	9 8.6%	4 5.4%
	Maintaining the quality of life	7 2.6%	3 4.4%	2 1.4%	2 2.9%
	Parking	5 1.8%	1 1.8%	2 2.0%	2 2.2%
	Recreation/community programs	9 3.2%	3 5.2%	4 3.5%	2 2.2%
	Reducing deer population	18 6.4%	3 4.4%	5 4.3%	5 6.3%
	Rising sea level	21 7.8%	3 4.7%	13 12.2%	2 2.8%
	Soil erosion	2 .7%	0 .0%	0 .0%	0 .0%
	Traffic safety/congestion	33 12.0%	4 7.0%	12 10.7%	15 18.2%
	Upgrading/maintaining the infrastructure	27 10.0%	12 20.2%	11 9.7%	3 3.5%
	Improving retail stores/restaurant options	12 4.2%	3 5.2%	3 3.0%	4 4.3%
	Sound financial management	13 4.8%	7 12.4%	3 2.6%	3 3.6%
	Noise	4 1.5%	0 .0%	0 .0%	3 4.2%
	Strict enforcement of building codes/design guidelines	4 1.6%	0 .0%	2 2.0%	2 2.8%
	Undergrounding utilities	4 1.5%	0 .0%	1 1.1%	3 3.4%

		Employment Status
		Other
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Total	21
	Affordable housing	1 2.8%
	Managing growth/development	4 17.3%
	Controlling the size of houses	3 13.1%
	Development of current City facilities	0 .0%
	Emergency preparedness	2 8.7%
	Global warming/climate change	2 7.3%
	Maintaining character of the community	4 17.6%
	Maintaining public safety	1 2.8%
	Maintaining the quality of life	1 2.8%
	Parking	0 .0%
	Recreation/community programs	0 .0%
	Reducing deer population	5 23.9%
	Rising sea level	3 13.8%
	Soil erosion	2 8.7%
	Traffic safety/congestion	2 8.3%
	Upgrading/maintaining the infrastructure	2 7.3%
	Improving retail stores/restaurant options	2 7.4%
	Sound financial management	0 .0%
	Noise	1 2.8%
	Strict enforcement of building codes/design guidelines	0 .0%
	Undergrounding utilities	0 .0%

		Employment Status			
		Total	Full-time	Self-Employed/Home-based Business	Retired
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	High taxes	5 1.7%	3 5.7%	1 .5%	1 .7%
	Bureaucratic/unfriendly planning department	22 7.9%	6 9.5%	11 9.8%	4 4.9%
	Environmental sustainability	10 3.8%	2 2.6%	6 5.4%	3 3.5%
	Incompetent/unfriendly City staff	5 2.0%	1 1.0%	4 3.4%	1 1.4%
	Harmony between neighbors	3 1.2%	2 3.6%	0 .0%	1 1.4%
	Availability of public transportation	3 1.1%	0 .0%	0 .0%	2 2.2%
	Independent services and programs for residents	3 1.0%	2 2.6%	0 .0%	1 1.4%
	Inappropriate vegetation	4 1.5%	2 2.6%	1 1.0%	0 .0%
	Other	20 7.4%	6 10.1%	7 6.8%	6 6.8%
	Nothing specific	3 1.1%	0 .0%	1 1.1%	2 2.1%

		Employment Status
		Other
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	High taxes	0 .0%
	Bureaucratic/unfriendly planning department	1 5.5%
	Environmental sustainability	0 .0%
	Incompetent/unfriendly City staff	0 .0%
	Harmony between neighbors	0 .0%
	Availability of public transportation	1 5.5%
	Independent services and programs for residents	0 .0%
	Inappropriate vegetation	2 7.3%
	Other	1 5.1%
	Nothing specific	0 .0%

Comparisons of Column Proportions[b,c]

		Employment Status			
		Full-time	Self-Employed/Home-based Business	Retired	Other
		(A)	(B)	(C)	(D)
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Affordable housing				
	Managing growth/development				
	Controlling the size of houses			A	
	Development of current City facilities	a .			a .
	Emergency preparedness				
	Global warming/climate change				
	Maintaining character of the community				
	Maintaining public safety				
	Maintaining the quality of life				
	Parking				a .
	Recreation/community programs				a .
	Reducing deer population				B
	Rising sea level				
	Soil erosion	a .	a .	a .	
	Traffic safety/congestion				
	Upgrading/maintaining the infrastructure	C			
	Improving retail stores/restaurant options				
	Sound financial management	B			a .
	Noise	a .	a .		
	Strict enforcement of building codes/design guidelines	a .			a .
	Undergrounding utilities	a .			a .
	High taxes				a .
	Bureaucratic/unfriendly planning department				
	Environmental sustainability				a .
	Incompetent/unfriendly City staff				a .
	Harmony between neighbors		a .		a .

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Comparisons of Column Proportions[b,c]

		Employment Status			
		Full-time	Self-Employed/Home-based Business	Retired	Other
		(A)	(B)	(C)	(D)
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Availability of public transportation	a .	a .		
	Independent services and programs for residents		a .		a .
	Inappropriate vegetation			a .	
	Other				
	Nothing specific	a .			a .

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Satisfaction with Quality of Life		
		Total	Very Satisfied	Somewhat Satisfied
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Total	270	218	37
	Affordable housing	8 3.0%	8 3.5%	1 1.6%
	Managing growth/development	20 7.5%	17 7.8%	1 1.6%
	Controlling the size of houses	37 13.7%	29 13.5%	5 13.6%
	Development of current City facilities	6 2.3%	6 2.9%	0 .0%
	Emergency preparedness	11 4.2%	10 4.7%	1 3.0%
	Global warming/climate change	11 4.0%	11 5.0%	0 .0%
	Maintaining character of the community	57 21.1%	50 22.9%	7 17.6%
	Maintaining public safety	17 6.4%	15 7.0%	2 5.8%
	Maintaining the quality of life	7 2.7%	4 2.0%	2 5.8%
	Parking	4 1.5%	2 .8%	2 5.8%
	Recreation/community programs	9 3.2%	7 3.0%	2 5.8%
	Reducing deer population	19 7.1%	13 6.1%	3 7.1%

		Satisfaction with Quality of Life
		Dissatisfied
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Total	15
	Affordable housing	0 .0%
	Managing growth/development	3 17.3%
	Controlling the size of houses	3 17.3%
	Development of current City facilities	0 .0%
	Emergency preparedness	0 .0%
	Global warming/climate change	0 .0%
	Maintaining character of the community	1 3.8%
	Maintaining public safety	0 .0%
	Maintaining the quality of life	1 3.8%
	Parking	0 .0%
	Recreation/community programs	0 .0%
	Reducing deer population	3 20.2%

		Satisfaction with Quality of Life		
		Total	Very Satisfied	Somewhat Satisfied
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Rising sea level	21 7.9%	21 9.8%	0 .0%
	Soil erosion	2 .7%	2 .9%	0 .0%
	Traffic safety/congestion	32 11.9%	30 13.7%	2 4.2%
	Upgrading/maintaining the infrastructure	27 10.1%	20 9.2%	5 13.7%
	Improving retail stores/restaurant options	13 4.7%	11 4.8%	2 5.8%
	Sound financial management	13 4.9%	11 5.3%	1 3.0%
	Noise	3 1.3%	3 1.3%	0 .0%
	Strict enforcement of building codes/design guidelines	4 1.6%	3 1.5%	1 3.2%
	Undergrounding utilities	4 1.5%	3 1.6%	1 1.6%
	High taxes	4 1.5%	3 1.6%	1 1.6%
	Bureaucratic/unfriendly planning department	22 8.2%	9 4.3%	7 19.0%
	Environmental sustainability	10 3.8%	9 4.2%	0 .0%
	Incompetent/unfriendly City staff	5 2.0%	2 .8%	2 4.2%
	Harmony between neighbors	3 1.2%	2 .8%	2 4.2%
	Availability of public transportation	2 .9%	1 .5%	1 3.2%
	Independent services and programs for residents	3 1.0%	3 1.3%	0 .0%
	Inappropriate vegetation	6 2.1%	3 1.2%	0 .0%
	Other	20 7.5%	14 6.6%	5 13.9%
	Nothing specific	3 1.1%	3 1.3%	0 .0%

		Satisfaction with Quality of Life
		Dissatisfied
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Rising sea level	0 .0%
	Soil erosion	0 .0%
	Traffic safety/congestion	1 3.8%
	Upgrading/maintaining the infrastructure	2 14.0%
	Improving retail stores/restaurant options	0 .0%
	Sound financial management	1 3.8%
	Noise	1 3.8%
	Strict enforcement of building codes/design guidelines	0 .0%
	Undergrounding utilities	0 .0%
	High taxes	0 .0%
	Bureaucratic/unfriendly planning department	6 37.0%
	Environmental sustainability	1 7.2%
	Incompetent/unfriendly City staff	2 14.0%
	Harmony between neighbors	0 .0%
	Availability of public transportation	0 .0%
	Independent services and programs for residents	0 .0%
	Inappropriate vegetation	3 20.2%
	Other	1 3.8%
	Nothing specific	0 .0%

Comparisons of Column Proportions[b,c]

		Satisfaction with Quality of Life	
		Very Satisfied	Somewhat Satisfied
		(A)	(B)
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Affordable housing		
	Managing growth/development		
	Controlling the size of houses		
	Development of current City facilities		[a] .
	Emergency preparedness		
	Global warming/climate change		[a] .
	Maintaining character of the community		
	Maintaining public safety		
	Maintaining the quality of life		
	Parking		A
	Recreation/community programs		
	Reducing deer population		
	Rising sea level		[a] .
	Soil erosion		[a] .
	Traffic safety/congestion		
	Upgrading/maintaining the infrastructure		
	Improving retail stores/restaurant options		
	Sound financial management		
	Noise		[a] .
	Strict enforcement of building codes/design guidelines		
	Undergrounding utilities		
	High taxes		
	Bureaucratic/unfriendly planning department		A
	Environmental sustainability		[a] .
	Incompetent/unfriendly City staff		
	Harmony between neighbors		
	Availability of public transportation		

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Comparisons of Column Proportions[b,c]

		Satisfaction with Quality of Life
		Dissatisfied
		(C)
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Affordable housing	[a] .
	Managing growth/development	
	Controlling the size of houses	
	Development of current City facilities	[a] .
	Emergency preparedness	[a] .
	Global warming/climate change	[a] .
	Maintaining character of the community	
	Maintaining public safety	[a] .
	Maintaining the quality of life	
	Parking	[a] .
	Recreation/community programs	[a] .
	Reducing deer population	
	Rising sea level	[a] .
	Soil erosion	[a] .
	Traffic safety/congestion	
	Upgrading/maintaining the infrastructure	
	Improving retail stores/restaurant options	[a] .
	Sound financial management	
	Noise	
	Strict enforcement of building codes/design guidelines	[a] .
	Undergrounding utilities	[a] .
	High taxes	[a] .
	Bureaucratic/unfriendly planning department	A
	Environmental sustainability	
	Incompetent/unfriendly City staff	A
	Harmony between neighbors	[a] .
	Availability of public transportation	[a] .

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before

Comparisons of Column Proportions[b,c]

		Satisfaction with Quality of Life	
		Very Satisfied	Somewhat Satisfied
		(A)	(B)
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Independent services and programs for residents		[a] .
	Inappropriate vegetation		[a] .
	Other		
	Nothing specific		[a] .

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

Comparisons of Column Proportions[b,c]

		Satisfaction with Quality of Life
		Dissatisfied
		(C)
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Independent services and programs for residents	[a] .
	Inappropriate vegetation	A
	Other	
	Nothing specific	[a] .

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Participation in Recreation programs, classes or events	
		Total	Yes
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Total	277	131
	Affordable housing	8 2.9%	4 3.3%
	Managing growth/development	21 7.5%	8 5.8%
	Controlling the size of houses	38 13.7%	12 9.2%
	Development of current City facilities	6 2.3%	2 1.8%
	Emergency preparedness	11 4.1%	8 6.5%
	Global warming/climate change	12 4.5%	10 7.8%
	Maintaining character of the community	59 21.1%	24 18.7%
	Maintaining public safety	18 6.6%	8 5.9%
	Maintaining the quality of life	7 2.6%	4 2.9%
	Parking	5 1.8%	1 .5%
	Recreation/community programs	9 3.1%	6 4.5%
	Reducing deer population	19 6.9%	8 6.3%
	Rising sea level	21 7.7%	13 10.1%
	Soil erosion	2 .7%	2 1.4%
	Traffic safety/congestion	34 12.1%	16 12.1%
	Upgrading/maintaining the infrastructure	27 9.8%	11 8.1%
	Improving retail stores/restaurant options	13 4.6%	4 2.9%
	Sound financial management	13 4.8%	7 5.0%
	Noise	4 1.5%	1 .9%
	Strict enforcement of building codes/design guidelines	4 1.6%	4 2.9%
	Undergrounding utilities	4	2

		Participation in Recreation programs, classes or events
		No
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Total	147
	Affordable housing	4 2.6%
	Managing growth/development	13 9.1%
	Controlling the size of houses	26 17.7%
	Development of current City facilities	4 2.7%
	Emergency preparedness	3 2.0%
	Global warming/climate change	2 1.6%
	Maintaining character of the community	34 23.2%
	Maintaining public safety	11 7.2%
	Maintaining the quality of life	3 2.3%
	Parking	4 3.0%
	Recreation/community programs	3 2.0%
	Reducing deer population	11 7.4%
	Rising sea level	8 5.6%
	Soil erosion	0 .0%
	Traffic safety/congestion	18 12.1%
	Upgrading/maintaining the infrastructure	17 11.4%
	Improving retail stores/restaurant options	9 6.0%
	Sound financial management	7 4.5%
	Noise	3 2.0%
	Strict enforcement of building codes/design guidelines	1 .4%
	Undergrounding utilities	2

		Participation in Recreation programs, classes or events	
		Total	Yes
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Undergrounding utilities	1.4%	1.3%
	High taxes	5 1.7%	2 1.9%
	Bureaucratic/unfriendly planning department	23 8.2%	12 8.8%
	Environmental sustainability	10 3.7%	7 5.7%
	Incompetent/unfriendly City staff	5 2.0%	3 2.1%
	Harmony between neighbors	3 1.2%	3 2.1%
	Availability of public transportation	3 1.1%	1 .9%
	Independent services and programs for residents	3 1.0%	3 2.1%
	Inappropriate vegetation	6 2.1%	0 .0%
	Other	20 7.3%	12 9.1%
	Nothing specific	3 1.0%	0 .0%

		Participation in Recreation programs, classes or events
		No
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Undergrounding utilities	1.6%
	High taxes	2 1.5%
	Bureaucratic/unfriendly planning department	11 7.7%
	Environmental sustainability	3 2.0%
	Incompetent/unfriendly City staff	3 1.9%
	Harmony between neighbors	1 .4%
	Availability of public transportation	2 1.2%
	Independent services and programs for residents	0 .0%
	Inappropriate vegetation	6 3.9%
	Other	8 5.6%
	Nothing specific	3 2.0%

Comparisons of Column Proportions[b,c]

		Participation in Recreation programs, classes or events	
		Yes	No
		(A)	(B)
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Affordable housing	B	A
	Managing growth/development		
	Controlling the size of houses		
	Development of current City facilities		
	Emergency preparedness		
	Global warming/climate change		
	Maintaining character of the community		
	Maintaining public safety		
	Maintaining the quality of life		
	Parking		
	Recreation/community programs		
	Reducing deer population		
	Rising sea level		[a] .
	Soil erosion		
	Traffic safety/congestion		
	Upgrading/maintaining the infrastructure		
	Improving retail stores/restaurant options		
	Sound financial management		
	Noise		
	Strict enforcement of building codes/design guidelines		
	Undergrounding utilities		
	High taxes		
	Bureaucratic/unfriendly planning department		
	Environmental sustainability		
	Incompetent/unfriendly City staff		
	Harmony between neighbors		

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Comparisons of Column Proportions[b,c]

		Participation in Recreation programs, classes or events	
		Yes	No
		(A)	(B)
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Availability of public transportation		
	Independent services and programs for residents		[a] .
	Inappropriate vegetation	[a] .	
	Other		
	Nothing specific	[a] .	

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a. This category is not used in comparisons because its column proportion is equal to zero or one.

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c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Perceived Size of Homes		
		Total	Right Size	Too Large
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Total	270	146	123
	Affordable housing	9 3.2%	3 2.3%	5 4.4%
	Managing growth/development	21 7.8%	3 1.8%	18 14.8%
	Controlling the size of houses	38 14.1%	7 4.7%	31 25.2%
	Development of current City facilities	6 2.3%	3 1.9%	3 2.8%
	Emergency preparedness	11 4.2%	7 4.5%	5 3.9%
	Global warming/climate change	12 4.6%	10 6.9%	2 1.9%
	Maintaining character of the community	57 21.0%	22 15.0%	35 28.2%
	Maintaining public safety	18 6.8%	8 5.7%	10 8.1%
	Maintaining the quality of life	7 2.4%	3 2.2%	3 2.7%
	Parking	3 1.1%	0 .0%	3 2.3%
	Recreation/community programs	9 3.2%	4 2.9%	5 3.7%
	Reducing deer population	17 6.4%	10 6.9%	7 5.9%

		Perceived Size of Homes		
		Total	Right Size	Too Large
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Rising sea level	21 7.9%	12 7.9%	10 8.0%
	Traffic safety/congestion	34 12.5%	15 10.3%	19 15.0%
	Upgrading/maintaining the infrastructure	27 10.1%	21 14.1%	7 5.3%
	Improving retail stores/restaurant options	12 4.5%	7 5.1%	5 3.7%
	Sound financial management	13 4.9%	9 5.9%	5 3.7%
	Noise	4 1.5%	3 2.0%	1 1.0%
	Strict enforcement of building codes/design guidelines	4 1.6%	3 2.2%	1 1.0%
	Undergrounding utilities	4 1.5%	3 2.0%	1 .9%
	High taxes	5 1.7%	4 2.7%	1 .5%
	Bureaucratic/unfriendly planning department	22 8.2%	19 12.8%	3 2.7%
	Environmental sustainability	10 3.8%	6 4.4%	4 3.1%
	Incompetent/unfriendly City staff	5 1.8%	3 1.9%	2 1.7%
	Harmony between neighbors	3 1.2%	0 .0%	3 2.7%
	Availability of public transportation	3 1.1%	1 .8%	2 1.4%
	Independent services and programs for residents	3 1.0%	2 1.5%	1 .5%
	Inappropriate vegetation	6 2.1%	3 2.1%	3 2.2%
	Other	20 7.5%	12 8.4%	8 6.4%
	Nothing specific	3 1.1%	2 1.6%	1 .5%

Comparisons of Column Proportions[b,c]

		Perceived Size of Homes	
		Right Size	Too Large
		(A)	(B)
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Affordable housing		
	Managing growth/development		A
	Controlling the size of houses		A
	Development of current City facilities		
	Emergency preparedness		
	Global warming/climate change		
	Maintaining character of the community		A
	Maintaining public safety		
	Maintaining the quality of life		
	Parking	[a] .	
	Recreation/community programs		
	Reducing deer population		
	Rising sea level		
	Traffic safety/congestion		
	Upgrading/maintaining the infrastructure	B	
	Improving retail stores/restaurant options		
	Sound financial management		
	Noise		
	Strict enforcement of building codes/design guidelines		
	Undergrounding utilities		
	High taxes		
	Bureaucratic/unfriendly planning department	B	
	Environmental sustainability		
	Incompetent/unfriendly City staff		
	Harmony between neighbors	[a] .	
	Availability of public transportation		

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Comparisons of Column Proportions[b,c]

		Perceived Size of Homes	
		Right Size	Too Large
		(A)	(B)
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Independent services and programs for residents		
	Inappropriate vegetation		
	Other		
	Nothing specific		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

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		Traffic Flow Ratings			
		Total	Excellent	Good	Fair/Poor
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Total	273	83	145	45
	Affordable housing	9 3.2%	2 2.1%	5 3.6%	2 3.8%
	Managing growth/development	20 7.4%	5 5.9%	7 5.0%	8 18.2%
	Controlling the size of houses	38 13.9%	12 14.3%	22 14.9%	5 10.2%
	Development of current City facilities	6 2.3%	3 3.5%	3 1.9%	1 1.3%
	Emergency preparedness	11 4.2%	6 7.2%	5 3.3%	1 1.3%
	Global warming/climate change	12 4.6%	4 5.1%	6 4.5%	2 3.8%
	Maintaining character of the community	56 20.6%	18 21.3%	32 22.4%	6 13.8%
	Maintaining public safety	18 6.7%	7 8.4%	10 6.8%	2 3.5%
	Maintaining the quality of life	6 2.1%	1 .7%	4 3.1%	1 1.3%
	Parking	3 1.3%	1 .7%	3 2.0%	0 .0%
	Recreation/community programs	9 3.2%	2 2.6%	4 2.7%	3 6.1%
	Reducing deer population	19 7.0%	6 6.7%	11 7.5%	3 6.1%
	Rising sea level	21 7.8%	9 10.4%	12 8.0%	1 2.4%

		Traffic Flow Ratings			
		Total	Excellent	Good	Fair/Poor
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Soil erosion	2 .7%	0 .0%	2 1.3%	0 .0%
	Traffic safety/congestion	33 12.1%	6 7.2%	14 9.8%	13 28.5%
	Upgrading/maintaining the infrastructure	25 9.2%	5 6.3%	13 9.3%	6 14.1%
	Improving retail stores/restaurant options	13 4.6%	5 5.8%	8 5.4%	0 .0%
	Sound financial management	13 4.8%	2 2.7%	5 3.8%	5 12.0%
	Noise	4 1.5%	1 1.4%	1 .4%	2 5.1%
	Strict enforcement of building codes/design guidelines	4 1.6%	2 1.9%	1 .8%	2 3.8%
	Undergrounding utilities	4 1.5%	2 2.1%	2 1.5%	0 .0%
	High taxes	5 1.7%	0 .0%	3 1.9%	2 4.1%
	Bureaucratic/unfriendly planning department	23 8.3%	11 13.0%	9 6.2%	3 6.6%
	Environmental sustainability	10 3.8%	3 3.3%	5 3.2%	3 6.6%
	Incompetent/unfriendly City staff	5 2.0%	1 1.4%	4 3.0%	0 .0%
	Harmony between neighbors	3 1.2%	1 .7%	3 1.9%	0 .0%
	Availability of public transportation	3 1.1%	0 .0%	2 1.2%	1 2.6%
	Independent services and programs for residents	3 1.0%	2 1.9%	1 .4%	1 1.3%
	Inappropriate vegetation	6 2.1%	0 .0%	4 2.9%	2 3.5%
	Other	20 7.4%	7 8.6%	10 6.7%	3 7.5%
	Nothing specific	3 1.1%	2 2.7%	1 .4%	0 .0%

Comparisons of Column Proportions[b,c]

		Traffic Flow Ratings		
		Excellent	Good	Fair/Poor
		(A)	(B)	(C)
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Affordable housing			
	Managing growth/development			B
	Controlling the size of houses			
	Development of current City facilities			
	Emergency preparedness			
	Global warming/climate change			
	Maintaining character of the community			
	Maintaining public safety			
	Maintaining the quality of life			
	Parking			a .
	Recreation/community programs			
	Reducing deer population			
	Rising sea level			
	Soil erosion	a .		a .
	Traffic safety/congestion			A B
	Upgrading/maintaining the infrastructure			
	Improving retail stores/restaurant options			a .
	Sound financial management			
	Noise			
	Strict enforcement of building codes/design guidelines			
	Undergrounding utilities			a .
	High taxes	a .		
	Bureaucratic/unfriendly planning department			
	Environmental sustainability			
	Incompetent/unfriendly City staff			a .
	Harmony between neighbors			a .

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Comparisons of Column Proportions[b,c]

		Traffic Flow Ratings		
		Excellent	Good	Fair/Poor
		(A)	(B)	(C)
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Availability of public transportation	[a] .		
	Independent services and programs for residents			
	Inappropriate vegetation	[a] .		
	Other			
	Nothing specific			[a] .

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Support for Development of Single Family Homes		
		Total	Strongly Support	Somewhat Support
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Total	251	79	97
	Affordable housing	8 3.0%	1 .8%	5 5.4%
	Managing growth/development	19 7.7%	10 12.5%	6 5.7%
	Controlling the size of houses	34 13.5%	13 16.1%	11 11.5%
	Development of current City facilities	6 2.3%	0 .0%	3 3.5%
	Emergency preparedness	10 4.1%	1 1.5%	2 1.8%
	Global warming/climate change	12 4.7%	2 2.7%	8 8.1%
	Maintaining character of the community	55 21.8%	19 23.6%	24 25.0%
	Maintaining public safety	18 7.1%	6 8.0%	6 6.6%
	Maintaining the quality of life	7 2.9%	2 2.7%	3 2.8%
	Parking	4 1.8%	1 .8%	3 2.8%
	Recreation/community programs	7 2.6%	2 2.2%	2 1.8%
	Reducing deer population	17 7.0%	3 4.2%	5 5.0%

		Support for Development of Single Family Homes
		Oppose
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Total	75
	Affordable housing	2 2.2%
	Managing growth/development	4 5.3%
	Controlling the size of houses	10 13.4%
	Development of current City facilities	2 3.0%
	Emergency preparedness	7 9.7%
	Global warming/climate change	2 2.5%
	Maintaining character of the community	12 15.8%
	Maintaining public safety	5 6.8%
	Maintaining the quality of life	2 3.0%
	Parking	1 1.5%
	Recreation/community programs	3 4.1%
	Reducing deer population	9 12.3%

		Support for Development of Single Family Homes		
		Total	Strongly Support	Somewhat Support
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Rising sea level	20 7.9%	5 5.9%	9 9.6%
	Soil erosion	2 .7%	0 .0%	0 .0%
	Traffic safety/congestion	32 13.0%	10 12.2%	12 12.6%
	Upgrading/maintaining the infrastructure	26 10.3%	4 5.4%	13 13.6%
	Improving retail stores/restaurant options	9 3.6%	3 3.7%	3 2.8%
	Sound financial management	11 4.6%	4 4.9%	3 2.8%
	Noise	4 1.6%	1 1.5%	3 3.0%
	Strict enforcement of building codes/design guidelines	4 1.8%	3 3.4%	1 1.2%
	Undergrounding utilities	4 1.6%	2 2.2%	2 2.4%
	High taxes	4 1.6%	2 2.0%	0 .0%
	Bureaucratic/unfriendly planning department	18 7.1%	7 8.8%	6 6.5%
	Environmental sustainability	9 3.5%	5 5.9%	3 3.2%
	Incompetent/unfriendly City staff	5 2.2%	1 .8%	3 3.4%
	Harmony between neighbors	3 1.1%	2 2.0%	0 .0%
	Availability of public transportation	2 .9%	1 1.5%	1 1.2%
	Independent services and programs for residents	3 1.1%	3 3.5%	0 .0%
	Inappropriate vegetation	6 2.3%	2 2.0%	0 .0%
	Other	20 7.8%	7 9.5%	8 7.9%
	Nothing specific	3 1.1%	1 1.5%	1 1.1%

		Support for Development of Single Family Homes
		Oppose
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Rising sea level	6 7.9%
	Soil erosion	2 2.5%
	Traffic safety/congestion	11 14.2%
	Upgrading/maintaining the infrastructure	8 11.1%
	Improving retail stores/restaurant options	3 4.4%
	Sound financial management	5 6.4%
	Noise	0 .0%
	Strict enforcement of building codes/design guidelines	1 .8%
	Undergrounding utilities	0 .0%
	High taxes	2 3.3%
	Bureaucratic/unfriendly planning department	5 6.2%
	Environmental sustainability	1 1.5%
	Incompetent/unfriendly City staff	2 2.1%
	Harmony between neighbors	1 1.6%
	Availability of public transportation	0 .0%
	Independent services and programs for residents	0 .0%
	Inappropriate vegetation	4 5.6%
	Other	4 6.0%
	Nothing specific	1 .8%

Comparisons of Column Proportions[b,c]

		Support for Development of Single Family Homes	
		Strongly Support	Somewhat Support
		(A)	(B)
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Affordable housing		
	Managing growth/development		
	Controlling the size of houses		
	Development of current City facilities	a .	
	Emergency preparedness		
	Global warming/climate change		
	Maintaining character of the community		
	Maintaining public safety		
	Maintaining the quality of life		
	Parking		
	Recreation/community programs		
	Reducing deer population		
	Rising sea level		
	Soil erosion	a .	a .
	Traffic safety/congestion		
	Upgrading/maintaining the infrastructure		
	Improving retail stores/restaurant options		
	Sound financial management		
	Noise		
	Strict enforcement of building codes/design guidelines		
	Undergrounding utilities		
	High taxes		a .
	Bureaucratic/unfriendly planning department		
	Environmental sustainability		
	Incompetent/unfriendly City staff		
	Harmony between neighbors		a .
	Availability of public transportation		

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Comparisons of Column Proportions[b,c]

		Support for Development of Single Family Homes
		Oppose
		(C)
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Affordable housing	
	Managing growth/development	
	Controlling the size of houses	
	Development of current City facilities	
	Emergency preparedness	
	Global warming/climate change	
	Maintaining character of the community	
	Maintaining public safety	
	Maintaining the quality of life	
	Parking	
	Recreation/community programs	
	Reducing deer population	
	Rising sea level	
	Soil erosion	
	Traffic safety/congestion	
	Upgrading/maintaining the infrastructure	
	Improving retail stores/restaurant options	
	Sound financial management	
	Noise	a .
	Strict enforcement of building codes/design guidelines	
	Undergrounding utilities	a .
	High taxes	
	Bureaucratic/unfriendly planning department	
	Environmental sustainability	
	Incompetent/unfriendly City staff	
	Harmony between neighbors	
	Availability of public transportation	a .

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before

Comparisons of Column Proportions[b,c]

		Support for Development of Single Family Homes	
		Strongly Support	Somewhat Support
		(A)	(B)
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Independent services and programs for residents		a .
	Inappropriate vegetation		a .
	Other		
	Nothing specific		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

Comparisons of Column Proportions[b,c]

		Support for Development of Single Family Homes
		Oppose
		(C)
2. Looking ahead to the next 20 years, what do you think is the single, most important issue for the future of the City of Belvedere? Please write your response in the space below.	Independent services and programs for residents	a .
	Inappropriate vegetation	
	Other	
	Nothing specific	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

	Gender		
	Total	Male	Female
3A. Encouraging sustainable/green building practices	1.6	1.5	1.8
3B. Ensuring the City is prepared for an earthquake and other disasters	2.3	2.3	2.3
3C. Improving Belvedere-Tiburon Library services and facilities	1.1	1.0	1.2
3D. Improving walking paths, public lanes, and steps	1.5	1.5	1.6
3E. Improving existing sidewalks and providing new sidewalks where feasible	1.4	1.2	1.5
3F. Maintaining neighborhood parks	2.0	2.0	2.1
3G. Managing growth and development	2.2	2.1	2.2
3H. Maintaining seawalls and infrastructure for storm-related flooding	2.1	2.0	2.2
3I. Maintaining historic homes and landmarks	1.4	1.2	1.5
3J. Preserving Belvedere's unique character	2.3	2.2	2.3
3K. Preservation of open spaces	2.2	2.1	2.3
3L. Preserving residential scenic views	2.2	2.2	2.3
3M. Preventing wildfires	2.3	2.2	2.4
3N. Providing programs to reduce energy consumption and conserve natural resources	1.7	1.5	1.9
3O. Providing public transportation, carpooling, and other alternatives to driving alone	1.3	1.0	1.5
3P. Providing recreational programs and facilities	1.3	1.2	1.4
3Q. Building partnerships with neighboring communities to share services and facilities	1.6	1.6	1.7
3R. Reducing traffic congestion within the City of Belvedere	1.2	1.1	1.3

Comparisons of Column Means[a,b]

	Gender	
	Male	Female
	(A)	(B)
3A. Encouraging sustainable/green building practices		A
3B. Ensuring the City is prepared for an earthquake and other disasters		
3C. Improving Belvedere-Tiburon Library services and facilities		A
3D. Improving walking paths, public lanes, and steps		
3E. Improving existing sidewalks and providing new sidewalks where feasible		A
3F. Maintaining neighborhood parks		
3G. Managing growth and development		
3H. Maintaining seawalls and infrastructure for storm-related flooding		
3I. Maintaining historic homes and landmarks		A
3J. Preserving Belvedere's unique character		A
3K. Preservation of open spaces		A
3L. Preserving residential scenic views		
3M. Preventing wildfires		A
3N. Providing programs to reduce energy consumption and conserve natural resources		A
3O. Providing public transportation, carpooling, and other alternatives to driving alone		A
3P. Providing recreational programs and facilities		

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise

Comparisons of Column Means[a,b]

	Gender	
	Male	Female
	(A)	(B)
3Q. Building partnerships with neighboring communities to share services and facilities		
3R. Reducing traffic congestion within the City of Belvedere		A

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

	Age				
	Total	18 to 44	45 to 54	55 to 64	65 and over
3A. Encouraging sustainable/green building practices	1.6	1.6	1.6	1.7	1.7
3B. Ensuring the City is prepared for an earthquake and other disasters	2.3	2.1	2.3	2.3	2.4
3C. Improving Belvedere-Tiburon Library services and facilities	1.1	1.2	1.0	1.1	1.2
3D. Improving walking paths, public lanes, and steps	1.5	1.4	1.4	1.7	1.6
3E. Improving existing sidewalks and providing new sidewalks where feasible	1.4	1.4	1.3	1.4	1.4
3F. Maintaining neighborhood parks	2.0	2.0	2.1	2.0	2.0
3G. Managing growth and development	2.2	1.8	2.1	2.4	2.3
3H. Maintaining seawalls and infrastructure for storm-related flooding	2.1	2.0	2.0	2.1	2.3
3I. Maintaining historic homes and landmarks	1.4	1.0	1.3	1.5	1.5
3J. Preserving Belvedere's unique character	2.3	2.0	2.1	2.5	2.4
3K. Preservation of open spaces	2.2	2.0	2.2	2.4	2.3
3L. Preserving residential scenic views	2.3	2.2	2.2	2.4	2.2

	Age				
	Total	18 to 44	45 to 54	55 to 64	65 and over
3N. Providing programs to reduce energy consumption and conserve natural resources	1.7	1.6	1.6	1.7	1.8
3O. Providing public transportation, carpooling, and other alternatives to driving alone	1.3	1.1	1.2	1.3	1.4
3P. Providing recreational programs and facilities	1.3	1.4	1.4	1.2	1.3
3Q. Building partnerships with neighboring communities to share services and facilities	1.6	1.5	1.7	1.6	1.7
3R. Reducing traffic congestion within the City of Belvedere	1.2	1.4	.8	1.1	1.4

Comparisons of Column Means[a,b]

	Age			
	18 to 44	45 to 54	55 to 64	65 and over
	(A)	(B)	(C)	(D)
3A. Encouraging sustainable/green building practices				
3B. Ensuring the City is prepared for an earthquake and other disasters				
3C. Improving Belvedere-Tiburon Library services and facilities				
3D. Improving walking paths, public lanes, and steps				
3E. Improving existing sidewalks and providing new sidewalks where feasible				
3F. Maintaining neighborhood parks				
3G. Managing growth and development			A	A
3H. Maintaining seawalls and infrastructure for storm-related flooding				
3I. Maintaining historic homes and landmarks			A	A
3J. Preserving Belvedere's unique character			A B	A
3K. Preservation of open spaces			A	

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest

Comparisons of Column Means[a,b]

	Age			
	18 to 44	45 to 54	55 to 64	65 and over
	(A)	(B)	(C)	(D)
3L. Preserving residential scenic views				
3M. Preventing wildfires				
3N. Providing programs to reduce energy consumption and conserve natural resources				
3O. Providing public transportation, carpooling, and other alternatives to driving alone				
3P. Providing recreational programs and facilities				
3Q. Building partnerships with neighboring communities to share services and facilities				
3R. Reducing traffic congestion within the City of Belvedere	B			B

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

	Length of Residence				
	Total	Less than 5 years	5 to 9 years	10 to 19 years	20 years or more
3A. Encouraging sustainable/green building practices	1.6	1.5	1.5	1.9	1.6
3B. Ensuring the City is prepared for an earthquake and other disasters	2.3	2.6	1.9	2.5	2.3
3C. Improving Belvedere-Tiburon Library services and facilities	1.1	1.0	1.1	1.3	1.1
3D. Improving walking paths, public lanes, and steps	1.5	1.7	1.4	1.6	1.6
3E. Improving existing sidewalks and providing new sidewalks where feasible	1.4	1.6	1.4	1.4	1.3
3F. Maintaining neighborhood parks	2.0	2.1	2.1	2.0	2.0
3G. Managing growth and development	2.2	2.1	2.1	2.0	2.3
3H. Maintaining seawalls and infrastructure for storm-related flooding	2.1	2.4	1.7	2.2	2.3
3I. Maintaining historic homes and landmarks	1.4	1.4	1.1	1.5	1.5
3J. Preserving Belvedere's unique character	2.3	2.0	2.3	2.2	2.4
3K. Preservation of open spaces	2.2	2.2	2.0	2.4	2.3
3L. Preserving residential scenic views	2.3	2.1	2.3	2.2	2.3
3M. Preventing wildfires	2.3	2.4	2.0	2.3	2.4
3N. Providing programs to reduce energy consumption and conserve natural resources	1.7	1.8	1.5	1.9	1.7
3O. Providing public transportation, carpooling, and other alternatives to driving alone	1.3	1.4	.9	1.5	1.4
3P. Providing recreational programs and facilities	1.3	1.4	1.2	1.4	1.3
3Q. Building partnerships with neighboring communities to share services and facilities	1.6	1.8	1.6	1.5	1.6
3R. Reducing traffic congestion within the City of Belvedere	1.2	1.3	1.0	1.3	1.3

Comparisons of Column Means[a,b]

	Length of Residence			
	Less than 5 years	5 to 9 years	10 to 19 years	20 years or more
	(A)	(B)	(C)	(D)
3A. Encouraging sustainable/green building practices			B	
3B. Ensuring the City is prepared for an earthquake and other disasters	B		B	B
3C. Improving Belvedere-Tiburon Library services and facilities				
3D. Improving walking paths, public lanes, and steps				
3E. Improving existing sidewalks and providing new sidewalks where feasible				
3F. Maintaining neighborhood parks				
3G. Managing growth and development				C
3H. Maintaining seawalls and infrastructure for storm-related flooding	B		B	B
3I. Maintaining historic homes and landmarks			B	B
3J. Preserving Belvedere's unique character				A C
3K. Preservation of open spaces			B	
3L. Preserving residential scenic views				
3M. Preventing wildfires				B
3N. Providing programs to reduce energy consumption and conserve natural resources				
3O. Providing public transportation, carpooling, and other alternatives to driving alone			B	B
3P. Providing recreational programs and facilities				
3Q. Building partnerships with neighboring communities to share services and facilities				

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

Comparisons of Column Means[a,b]

	Length of Residence			
	Less than 5 years	5 to 9 years	10 to 19 years	20 years or more
	(A)	(B)	(C)	(D)
3R. Reducing traffic congestion within the City of Belvedere				

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

	Area of Residence				
	Total	Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road	Corinthian Island	West Shore Road
3A. Encouraging sustainable/green building practices	1.6	1.5	1.8	1.7	1.4
3B. Ensuring the City is prepared for an earthquake and other disasters	2.3	2.1	2.4	2.3	2.8
3C. Improving Belvedere-Tiburon Library services and facilities	1.1	1.0	1.3	.8	1.3
3D. Improving walking paths, public lanes, and steps	1.5	1.5	1.5	1.5	1.8
3E. Improving existing sidewalks and providing new sidewalks where feasible	1.4	1.2	1.6	.8	1.8
3F. Maintaining neighborhood parks	2.0	2.0	2.1	1.8	2.1
3G. Managing growth and development	2.2	2.1	2.2	2.1	2.3
3H. Maintaining seawalls and infrastructure for storm-related flooding	2.1	1.9	2.5	2.0	2.7
3I. Maintaining historic homes and landmarks	1.4	1.3	1.5	1.2	1.3
3J. Preserving Belvedere's unique character	2.3	2.3	2.3	2.1	2.1
3K. Preservation of open spaces	2.2	2.2	2.3	2.5	2.3
3L. Preserving residential scenic views	2.3	2.3	2.1	2.3	2.4
3M. Preventing wildfires	2.3	2.2	2.3	2.6	2.5
3N. Providing programs to reduce energy consumption	1.7	1.6	1.9	1.7	1.6

	Area of Residence				
	Total	Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road	Corinthian Island	West Shore Road
3O. Providing public transportation, carpooling, and other alternatives to driving alone	1.3	1.2	1.5	1.2	1.0
3P. Providing recreational programs and facilities	1.3	1.3	1.4	1.2	1.4
3Q. Building partnerships with neighboring communities to share services and facilities	1.6	1.5	1.8	1.5	1.8
3R. Reducing traffic congestion within the City of Belvedere	1.2	1.2	1.2	1.4	1.7

Comparisons of Column Means[a,b]

	Area of Residence			
	Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road	Corinthian Island	West Shore Road
	(A)	(B)	(C)	(D)
3A. Encouraging sustainable/green building practices				
3B. Ensuring the City is prepared for an earthquake and other disasters		A		A
3C. Improving Belvedere-Tiburon Library services and facilities				
3D. Improving walking paths, public lanes, and steps				
3E. Improving existing sidewalks and providing new sidewalks where feasible		A		A C
3F. Maintaining neighborhood parks				
3G. Managing growth and development				
3H. Maintaining seawalls and infrastructure for storm-related flooding		A		A
3I. Maintaining historic homes and landmarks				

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

Comparisons of Column Means[a,b]

	Area of Residence			
	Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road	Corinthian Island	West Shore Road
	(A)	(B)	(C)	(D)
3J. Preserving Belvedere's unique character				
3K. Preservation of open spaces				
3L. Preserving residential scenic views				
3M. Preventing wildfires				
3N. Providing programs to reduce energy consumption and conserve natural resources				
3O. Providing public transportation, carpooling, and other alternatives to driving alone		A		
3P. Providing recreational programs and facilities				
3Q. Building partnerships with neighboring communities to share services and facilities		A		
3R. Reducing traffic congestion within the City of Belvedere				

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

	Homeownership Status		
	Total	Rent	Own
3A. Encouraging sustainable/green building practices	1.6	1.9	1.6
3B. Ensuring the City is prepared for an earthquake and other disasters	2.3	2.5	2.3
3C. Improving Belvedere-Tiburon Library services and facilities	1.1	1.5	1.1
3D. Improving walking paths, public lanes, and steps	1.5	2.0	1.5
3E. Improving existing sidewalks and providing new sidewalks where feasible	1.4	2.0	1.3
3F. Maintaining neighborhood parks	2.0	2.4	2.0
3G. Managing growth and development	2.2	2.3	2.2
3H. Maintaining seawalls and infrastructure for storm-related flooding	2.1	2.6	2.1
3I. Maintaining historic homes and landmarks	1.4	1.9	1.3
3J. Preserving Belvedere's unique character	2.3	2.6	2.2
3K. Preservation of open spaces	2.2	2.5	2.2
3L. Preserving residential scenic views	2.3	2.4	2.2
3M. Preventing wildfires	2.3	2.6	2.2
3N. Providing programs to reduce energy consumption and conserve natural resources	1.7	1.9	1.7
3O. Providing public transportation, carpooling, and other alternatives to driving alone	1.3	1.6	1.2
3P. Providing recreational programs and facilities	1.3	1.7	1.3
3Q. Building partnerships with neighboring communities to share services and facilities	1.6	1.8	1.6
3R. Reducing traffic congestion within the City of Belvedere	1.2	1.6	1.2

Comparisons of Column Means[a,b]

	Homeownership Status	
	Rent	Own
	(A)	(B)
3A. Encouraging sustainable/green building practices		
3B. Ensuring the City is prepared for an earthquake and other disasters		
3C. Improving Belvedere-Tiburon Library services and facilities	B	
3D. Improving walking paths, public lanes, and steps	B	
3E. Improving existing sidewalks and providing new sidewalks where feasible	B	
3F. Maintaining neighborhood parks	B	
3G. Managing growth and development		
3H. Maintaining seawalls and infrastructure for storm-related flooding	B	
3I. Maintaining historic homes and landmarks	B	
3J. Preserving Belvedere's unique character	B	
3K. Preservation of open spaces	B	
3L. Preserving residential scenic views		
3M. Preventing wildfires	B	
3N. Providing programs to reduce energy consumption and conserve natural resources		
3O. Providing public transportation, carpooling, and other alternatives to driving alone	B	
3P. Providing recreational programs and facilities	B	
3Q. Building partnerships with neighboring communities to share services and facilities		

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before

Comparisons of Column Means[a,b]

	Homeownership Status	
	Rent	Own
	(A)	(B)
3R. Reducing traffic congestion within the City of Belvedere	B	

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

	Children in the Household		
	Total	Yes	No
3A. Encouraging sustainable/green building practices	1.6	1.7	1.6
3B. Ensuring the City is prepared for an earthquake and other disasters	2.3	2.5	2.2
3C. Improving Belvedere-Tiburon Library services and facilities	1.1	1.2	1.1
3D. Improving walking paths, public lanes, and steps	1.5	1.5	1.6
3E. Improving existing sidewalks and providing new sidewalks where feasible	1.4	1.4	1.4
3F. Maintaining neighborhood parks	2.0	2.1	2.0
3G. Managing growth and development	2.2	2.1	2.2
3H. Maintaining seawalls and infrastructure for storm-related flooding	2.1	2.1	2.1
3I. Maintaining historic homes and landmarks	1.4	1.2	1.4
3J. Preserving Belvedere's unique character	2.3	2.0	2.4
3K. Preservation of open spaces	2.2	2.1	2.3
3L. Preserving residential scenic views	2.3	2.0	2.3
3M. Preventing wildfires	2.3	2.1	2.4
3N. Providing programs to reduce energy consumption and conserve natural resources	1.7	1.7	1.7
3O. Providing public transportation, carpooling,	1.3	1.2	1.3

	Children in the Household		
	Total	Yes	No
3P. Providing recreational programs and facilities	1.3	1.5	1.3
3Q. Building partnerships with neighboring communities to share services and facilities	1.6	1.7	1.6
3R. Reducing traffic congestion within the City of Belvedere	1.2	1.0	1.3

Comparisons of Column Means[a,b]

	Children in the Household	
	Yes	No
	(A)	(B)
3A. Encouraging sustainable/green building practices		
3B. Ensuring the City is prepared for an earthquake and other disasters	B	
3C. Improving Belvedere-Tiburon Library services and facilities		
3D. Improving walking paths, public lanes, and steps		
3E. Improving existing sidewalks and providing new sidewalks where feasible		
3F. Maintaining neighborhood parks		
3G. Managing growth and development		
3H. Maintaining seawalls and infrastructure for storm-related flooding		
3I. Maintaining historic homes and landmarks		A
3J. Preserving Belvedere's unique character		A
3K. Preservation of open spaces		
3L. Preserving residential scenic views		A
3M. Preventing wildfires		A

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They

Comparisons of Column Means[a,b]

	Children in the Household	
	Yes	No
	(A)	(B)
3N. Providing programs to reduce energy consumption and conserve natural resources		
3O. Providing public transportation, carpooling, and other alternatives to driving alone		
3P. Providing recreational programs and facilities	B	
3Q. Building partnerships with neighboring communities to share services and facilities		
3R. Reducing traffic congestion within the City of Belvedere		A

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

	Seniors in the Household		
	Total	Yes	No
3A. Encouraging sustainable/green building practices	1.6	1.8	1.5
3B. Ensuring the City is prepared for an earthquake and other disasters	2.3	2.3	2.3
3C. Improving Belvedere-Tiburon Library services and facilities	1.1	1.2	1.1
3D. Improving walking paths, public lanes, and steps	1.5	1.5	1.5
3E. Improving existing sidewalks and providing new sidewalks where feasible	1.4	1.4	1.4
3F. Maintaining neighborhood parks	2.0	1.9	2.1
3G. Managing growth and development	2.2	2.2	2.2
3H. Maintaining seawalls and infrastructure for storm-related flooding	2.1	2.2	2.1
3I. Maintaining historic homes and landmarks	1.4	1.5	1.3
3J. Preserving Belvedere's unique character	2.3	2.4	2.2
3K. Preservation of open spaces	2.2	2.3	2.2
3L. Preserving residential scenic views	2.3	2.3	2.2
3M. Preventing wildfires	2.3	2.4	2.2
3N. Providing programs to reduce energy consumption and conserve natural resources	1.7	1.8	1.6
3O. Providing public transportation, carpooling, and other alternatives to driving alone	1.3	1.5	1.1
3P. Providing recreational programs and facilities	1.3	1.4	1.3
3Q. Building partnerships with neighboring communities to share services and facilities	1.6	1.7	1.6
3R. Reducing traffic congestion within the City of Belvedere	1.2	1.4	1.1

Comparisons of Column Means[a,b]

	Seniors in the Household	
	Yes	No
	(A)	(B)
3A. Encouraging sustainable/green building practices	B	
3B. Ensuring the City is prepared for an earthquake and other disasters		
3C. Improving Belvedere-Tiburon Library services and facilities		
3D. Improving walking paths, public lanes, and steps		
3E. Improving existing sidewalks and providing new sidewalks where feasible		
3F. Maintaining neighborhood parks		A
3G. Managing growth and development		
3H. Maintaining seawalls and infrastructure for storm-related flooding		
3I. Maintaining historic homes and landmarks	B	
3J. Preserving Belvedere's unique character	B	
3K. Preservation of open spaces		
3L. Preserving residential scenic views		
3M. Preventing wildfires	B	
3N. Providing programs to reduce energy consumption and conserve natural resources	B	
3O. Providing public transportation, carpooling, and other alternatives to driving alone	B	
3P. Providing recreational programs and facilities		
3Q. Building partnerships with neighboring communities to share services and facilities		

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

Comparisons of Column Means[a,b]

	Seniors in the Household	
	Yes	No
	(A)	(B)
3R. Reducing traffic congestion within the City of Belvedere	B	

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

	Employment Status				
	Total	Full-time	Self-Employed/Home-based Business	Retired	Other
3A. Encouraging sustainable/green building practices	1.6	1.4	1.7	1.7	1.8
3B. Ensuring the City is prepared for an earthquake and other disasters	2.3	2.0	2.4	2.4	2.2
3C. Improving Belvedere-Tiburon Library services and facilities	1.1	1.0	1.1	1.1	1.4
3D. Improving walking paths, public lanes, and steps	1.5	1.4	1.6	1.5	1.6
3E. Improving existing sidewalks and providing new sidewalks where feasible	1.4	1.3	1.4	1.4	1.4
3F. Maintaining neighborhood parks	2.0	2.1	2.1	2.0	1.8
3G. Managing growth and development	2.2	2.1	2.1	2.4	2.1
3H. Maintaining seawalls and infrastructure for storm-related flooding	2.1	1.8	2.3	2.2	2.2
3I. Maintaining historic homes and landmarks	1.4	1.0	1.4	1.6	1.6
3J. Preserving Belvedere's unique character	2.3	2.1	2.3	2.4	2.3
3K. Preservation of open spaces	2.2	2.0	2.2	2.3	2.7
3L. Preserving residential scenic views	2.2	2.2	2.2	2.3	2.4
3M. Preventing wildfires	2.3	2.1	2.2	2.5	2.4
3N. Providing programs to reduce energy consumption	1.7	1.4	1.7	1.8	1.8

	Employment Status				
	Total	Full-time	Self-Employed/Home-based Business	Retired	Other
3O. Providing public transportation, carpooling, and other alternatives to driving alone	1.3	1.0	1.2	1.4	1.6
3P. Providing recreational programs and facilities	1.3	1.1	1.4	1.2	1.9
3Q. Building partnerships with neighboring communities to share services and facilities	1.6	1.4	1.7	1.7	1.7
3R. Reducing traffic congestion within the City of Belvedere	1.2	1.0	1.1	1.5	1.6

Comparisons of Column Means[a,b]

	Employment Status			
	Full-time	Self-Employed/Home-based Business	Retired	Other
	(A)	(B)	(C)	(D)
3A. Encouraging sustainable/green building practices		A	A	
3B. Ensuring the City is prepared for an earthquake and other disasters		A	A	
3C. Improving Belvedere-Tiburon Library services and facilities				A
3D. Improving walking paths, public lanes, and steps				
3E. Improving existing sidewalks and providing new sidewalks where feasible				
3F. Maintaining neighborhood parks		D		
3G. Managing growth and development				
3H. Maintaining seawalls and infrastructure for storm-related flooding		A	A	
3I. Maintaining historic homes and landmarks		A	A	A
3J. Preserving Belvedere's unique character				

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to

Comparisons of Column Means[a,b]

	Employment Status			
	Full-time	Self-Employed/Home-based Business	Retired	Other
	(A)	(B)	(C)	(D)
3K. Preservation of open spaces				A B
3L. Preserving residential scenic views				
3M. Preventing wildfires			A	
3N. Providing programs to reduce energy consumption and conserve natural resources			A	
3O. Providing public transportation, carpooling, and other alternatives to driving alone				A
3P. Providing recreational programs and facilities				A B C
3Q. Building partnerships with neighboring communities to share services and facilities		A	A	
3R. Reducing traffic congestion within the City of Belvedere			A B	A B

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

	Satisfaction with Quality of Life			
	Total	Very Satisfied	Somewhat Satisfied	Dissatisfied
3A. Encouraging sustainable/green building practices	1.6	1.7	1.3	1.8
3B. Ensuring the City is prepared for an earthquake and other disasters	2.3	2.3	2.1	1.7
3C. Improving Belvedere-Tiburon Library services and facilities	1.1	1.2	1.0	.8
3D. Improving walking paths, public lanes, and steps	1.5	1.5	1.5	1.4
3E. Improving existing sidewalks and providing new sidewalks where feasible	1.4	1.4	1.2	1.1
3F. Maintaining neighborhood parks	2.0	2.1	1.7	1.9
3G. Managing growth and development	2.2	2.2	1.9	2.0
3H. Maintaining seawalls and infrastructure for storm-related flooding	2.1	2.2	1.7	1.7
3I. Maintaining historic homes and landmarks	1.4	1.4	1.1	1.6
3J. Preserving Belvedere's unique character	2.3	2.4	1.8	1.9
3K. Preservation of open spaces	2.2	2.3	1.8	2.4
3L. Preserving residential scenic views	2.2	2.3	1.9	2.0
3M. Preventing wildfires	2.3	2.3	2.1	2.1
3N. Providing programs to reduce energy consumption and conserve natural resources	1.7	1.7	1.4	1.8
3O. Providing public transportation, carpooling, and other alternatives to driving alone	1.3	1.3	1.2	1.4
3P. Providing recreational programs and facilities	1.3	1.4	1.2	1.3
3Q. Building partnerships with neighboring communities to share services and facilities	1.6	1.6	1.6	1.6
3R. Reducing traffic congestion within the City of Belvedere	1.2	1.3	.9	1.2

Comparisons of Column Means[a,b]

	Satisfaction with Quality of Life		
	Very Satisfied	Somewhat Satisfied	Dissatisfied
	(A)	(B)	(C)
3A. Encouraging sustainable/green building practices			
3B. Ensuring the City is prepared for an earthquake and other disasters	C		
3C. Improving Belvedere-Tiburon Library services and facilities			
3D. Improving walking paths, public lanes, and steps			
3E. Improving existing sidewalks and providing new sidewalks where feasible			
3F. Maintaining neighborhood parks	B		
3G. Managing growth and development			
3H. Maintaining seawalls and infrastructure for storm-related flooding	B C		
3I. Maintaining historic homes and landmarks			
3J. Preserving Belvedere's unique character	B C		
3K. Preservation of open spaces	B		
3L. Preserving residential scenic views	B		
3M. Preventing wildfires			
3N. Providing programs to reduce energy consumption and conserve natural resources			
3O. Providing public transportation, carpooling, and other alternatives to driving alone			
3P. Providing recreational programs and facilities			
3Q. Building partnerships with neighboring communities to share services and facilities			

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the

Comparisons of Column Means[a,b]

	Satisfaction with Quality of Life		
	Very Satisfied	Somewhat Satisfied	Dissatisfied
	(A)	(B)	(C)
3R. Reducing traffic congestion within the City of Belvedere			

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

	Participation in Recreation programs, classes or events		
	Total	Yes	No
3A. Encouraging sustainable/green building practices	1.6	1.6	1.6
3B. Ensuring the City is prepared for an earthquake and other disasters	2.3	2.5	2.1
3C. Improving Belvedere-Tiburon Library services and facilities	1.1	1.2	1.1
3D. Improving walking paths, public lanes, and steps	1.5	1.6	1.5
3E. Improving existing sidewalks and providing new sidewalks where feasible	1.4	1.5	1.3
3F. Maintaining neighborhood parks	2.0	2.2	1.9
3G. Managing growth and development	2.2	2.3	2.1
3H. Maintaining seawalls and infrastructure for storm-related flooding	2.1	2.3	2.0
3I. Maintaining historic homes and landmarks	1.4	1.4	1.3
3J. Preserving Belvedere's unique character	2.3	2.3	2.3
3K. Preservation of open spaces	2.2	2.3	2.2
3L. Preserving residential scenic views	2.2	2.2	2.3
3M. Preventing wildfires	2.3	2.3	2.3
3N. Providing programs to reduce energy consumption and conserve natural resources	1.7	1.7	1.7
3O. Providing public transportation, carpooling,	1.3	1.4	1.2

	Participation in Recreation programs, classes or events		
	Total	Yes	No
3P. Providing recreational programs and facilities	1.3	1.6	1.1
3Q. Building partnerships with neighboring communities to share services and facilities	1.6	1.7	1.6
3R. Reducing traffic congestion within the City of Belvedere	1.2	1.2	1.3

Comparisons of Column Means[a,b]

	Participation in Recreation programs, classes or events	
	Yes	No
	(A)	(B)
3A. Encouraging sustainable/green building practices		
3B. Ensuring the City is prepared for an earthquake and other disasters	B	
3C. Improving Belvedere-Tiburon Library services and facilities		
3D. Improving walking paths, public lanes, and steps		
3E. Improving existing sidewalks and providing new sidewalks where feasible		
3F. Maintaining neighborhood parks	B	
3G. Managing growth and development		
3H. Maintaining seawalls and infrastructure for storm-related flooding	B	
3I. Maintaining historic homes and landmarks		
3J. Preserving Belvedere's unique character		
3K. Preservation of open spaces		
3L. Preserving residential scenic views		
3M. Preventing wildfires		

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise

Comparisons of Column Means[a,b]

	Participation in Recreation programs, classes or events	
	Yes	No
	(A)	(B)
3N. Providing programs to reduce energy consumption and conserve natural resources		
3O. Providing public transportation, carpooling, and other alternatives to driving alone	B	
3P. Providing recreational programs and facilities	B	
3Q. Building partnerships with neighboring communities to share services and facilities		
3R. Reducing traffic congestion within the City of Belvedere		

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

	Perceived Size of Homes		
	Total	Right Size	Too Large
3A. Encouraging sustainable/green building practices	1.7	1.5	1.8
3B. Ensuring the City is prepared for an earthquake and other disasters	2.3	2.3	2.3
3C. Improving Belvedere-Tiburon Library services and facilities	1.1	1.1	1.1
3D. Improving walking paths, public lanes, and steps	1.5	1.5	1.5
3E. Improving existing sidewalks and providing new sidewalks where feasible	1.4	1.4	1.3
3F. Maintaining neighborhood parks	2.0	2.1	1.9
3G. Managing growth and development	2.2	1.9	2.5
3H. Maintaining seawalls and infrastructure for storm-related flooding	2.1	2.1	2.1
3I. Maintaining historic homes and landmarks	1.4	1.1	1.6
3J. Preserving Belvedere's unique character	2.3	2.1	2.5
3K. Preservation of open spaces	2.2	2.1	2.4
3L. Preserving residential scenic views	2.3	2.3	2.2
3M. Preventing wildfires	2.3	2.3	2.3
3N. Providing programs to reduce energy consumption and conserve natural resources	1.7	1.6	1.8
3O. Providing public transportation, carpooling, and other alternatives to driving alone	1.3	1.1	1.5
3P. Providing recreational programs and facilities	1.3	1.3	1.4
3Q. Building partnerships with neighboring communities to share services and facilities	1.6	1.5	1.7
3R. Reducing traffic congestion within the City of Belvedere	1.2	1.1	1.4

Comparisons of Column Means[a,b]

	Perceived Size of Homes	
	Right Size	Too Large
	(A)	(B)
3A. Encouraging sustainable/green building practices		A
3B. Ensuring the City is prepared for an earthquake and other disasters		
3C. Improving Belvedere-Tiburon Library services and facilities		
3D. Improving walking paths, public lanes, and steps		
3E. Improving existing sidewalks and providing new sidewalks where feasible		
3F. Maintaining neighborhood parks	B	
3G. Managing growth and development		A
3H. Maintaining seawalls and infrastructure for storm-related flooding		
3I. Maintaining historic homes and landmarks		A
3J. Preserving Belvedere's unique character		A
3K. Preservation of open spaces		A
3L. Preserving residential scenic views		
3M. Preventing wildfires		
3N. Providing programs to reduce energy consumption and conserve natural resources		A
3O. Providing public transportation, carpooling, and other alternatives to driving alone		A
3P. Providing recreational programs and facilities		
3Q. Building partnerships with neighboring communities to share services and facilities		

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

Comparisons of Column Means[a,b]

	Perceived Size of Homes	
	Right Size	Too Large
	(A)	(B)
3R. Reducing traffic congestion within the City of Belvedere		A

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

	Traffic Flow Ratings			
	Total	Excellent	Good	Fair/Poor
3A. Encouraging sustainable/green building practices	1.6	1.7	1.6	1.7
3B. Ensuring the City is prepared for an earthquake and other disasters	2.3	2.4	2.3	1.9
3C. Improving Belvedere-Tiburon Library services and facilities	1.1	1.1	1.1	1.3
3D. Improving walking paths, public lanes, and steps	1.5	1.5	1.6	1.5
3E. Improving existing sidewalks and providing new sidewalks where feasible	1.4	1.4	1.4	1.3
3F. Maintaining neighborhood parks	2.0	2.1	2.0	2.0
3G. Managing growth and development	2.2	2.1	2.2	2.2
3H. Maintaining seawalls and infrastructure for storm-related flooding	2.1	2.3	2.1	1.9
3I. Maintaining historic homes and landmarks	1.4	1.4	1.4	1.2
3J. Preserving Belvedere's unique character	2.3	2.4	2.2	2.3
3K. Preservation of open spaces	2.2	2.2	2.2	2.3
3L. Preserving residential scenic views	2.3	2.2	2.2	2.4
3M. Preventing wildfires	2.3	2.3	2.3	2.3
3N. Providing programs to reduce energy consumption and conserve natural resources	1.7	1.7	1.6	1.8
3O. Providing public transportation, carpooling,	1.3	1.2	1.2	1.5

	Traffic Flow Ratings			
	Total	Excellent	Good	Fair/Poor
3P. Providing recreational programs and facilities	1.3	1.4	1.3	1.4
3Q. Building partnerships with neighboring communities to share services and facilities	1.6	1.6	1.6	1.7
3R. Reducing traffic congestion within the City of Belvedere	1.2	.7	1.2	1.9

Comparisons of Column Means[a,b]

	Traffic Flow Ratings		
	Excellent	Good	Fair/Poor
	(A)	(B)	(C)
3A. Encouraging sustainable/green building practices			
3B. Ensuring the City is prepared for an earthquake and other disasters	C	C	
3C. Improving Belvedere-Tiburon Library services and facilities			
3D. Improving walking paths, public lanes, and steps			
3E. Improving existing sidewalks and providing new sidewalks where feasible			
3F. Maintaining neighborhood parks			
3G. Managing growth and development			
3H. Maintaining seawalls and infrastructure for storm-related flooding	C		
3I. Maintaining historic homes and landmarks			
3J. Preserving Belvedere's unique character			
3K. Preservation of open spaces			
3L. Preserving residential scenic views			B
3M. Preventing wildfires			

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing

Comparisons of Column Means[a,b]

	Traffic Flow Ratings		
	Excellent	Good	Fair/Poor
	(A)	(B)	(C)
3N. Providing programs to reduce energy consumption and conserve natural resources			
3O. Providing public transportation, carpooling, and other alternatives to driving alone			
3P. Providing recreational programs and facilities			
3Q. Building partnerships with neighboring communities to share services and facilities			
3R. Reducing traffic congestion within the City of Belvedere		A	A B

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

	Support for Development of Single Family Homes			
	Total	Strongly Support	Somewhat Support	Oppose
3A. Encouraging sustainable/green building practices	1.6	1.5	1.6	1.7
3B. Ensuring the City is prepared for an earthquake and other disasters	2.3	2.3	2.2	2.4
3C. Improving Belvedere-Tiburon Library services and facilities	1.1	1.2	1.2	1.0
3D. Improving walking paths, public lanes, and steps	1.5	1.5	1.5	1.5
3E. Improving existing sidewalks and providing new sidewalks where feasible	1.4	1.4	1.4	1.3
3F. Maintaining neighborhood parks	2.0	2.1	2.0	2.0
3G. Managing growth and development	2.2	2.1	2.1	2.4
3H. Maintaining seawalls and infrastructure for storm-related flooding	2.1	2.3	2.0	2.0
3I. Maintaining historic homes and landmarks	1.4	1.4	1.3	1.4
3J. Preserving Belvedere's unique character	2.3	2.2	2.2	2.5
3K. Preservation of open spaces	2.2	2.1	2.1	2.4
3L. Preserving residential scenic views	2.2	2.2	2.3	2.2
3M. Preventing wildfires	2.3	2.4	2.2	2.2
3N. Providing programs to reduce energy consumption and conserve natural resources	1.7	1.6	1.7	1.7
3O. Providing public transportation, carpooling, and other alternatives to driving alone	1.2	1.3	1.2	1.2
3P. Providing recreational programs and facilities	1.3	1.3	1.3	1.3
3Q. Building partnerships with neighboring communities to share services and facilities	1.6	1.7	1.6	1.5
3R. Reducing traffic congestion within the City of Belvedere	1.2	1.2	1.2	1.3

Comparisons of Column Means[a,b]

	Support for Development of Single Family Homes		
	Strongly Support	Somewhat Support	Oppose
	(A)	(B)	(C)
3A. Encouraging sustainable/green building practices			
3B. Ensuring the City is prepared for an earthquake and other disasters			
3C. Improving Belvedere-Tiburon Library services and facilities			
3D. Improving walking paths, public lanes, and steps			
3E. Improving existing sidewalks and providing new sidewalks where feasible			
3F. Maintaining neighborhood parks			
3G. Managing growth and development			B
3H. Maintaining seawalls and infrastructure for storm-related flooding	B C		
3I. Maintaining historic homes and landmarks			
3J. Preserving Belvedere's unique character			B
3K. Preservation of open spaces			
3L. Preserving residential scenic views			
3M. Preventing wildfires			
3N. Providing programs to reduce energy consumption and conserve natural resources			
3O. Providing public transportation, carpooling, and other alternatives to driving alone			
3P. Providing recreational programs and facilities			
3Q. Building partnerships with neighboring communities to share services and facilities			

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

Comparisons of Column Means[a,b]

		Support for Development of Single Family Homes		
		Strongly Support	Somewhat Support	Oppose
		(A)	(B)	(C)
3R. Reducing traffic congestion within the City of Belvedere				

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the

		Gender		
		Total	Male	Female
4. In the past 12 months, have you or a member of your household attended any recreation program, class or event sponsored by Belvedere-Tiburon Recreation?	Total	393	177	217
	Yes	171	83	88
		43.6%	47.3%	40.6%
	No	222	93	129
		56.4%	52.7%	59.4%

Comparisons of Column Proportions[a,b]

		Gender	
		Male	Female
		(A)	(B)
4. In the past 12 months, have you or a member of your household attended any recreation program, class or event sponsored by Belvedere-Tiburon Recreation?	Yes		
	No		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Age				
		Total	18 to 44	45 to 54	55 to 64	65 and over
4. In the past 12 months, have you or a member of your household attended any recreation program, class or event sponsored by Belvedere-Tiburon Recreation?	Total	393	84	87	89	133
	Yes	173	47	45	29	53
		44.0%	55.2%	51.8%	32.1%	39.7%
	No	220	38	42	61	80
		56.0%	44.8%	48.2%	67.9%	60.3%

Comparisons of Column Proportions[a,b]

		Age			
		18 to 44	45 to 54	55 to 64	65 and over
		(A)	(B)	(C)	(D)
4. In the past 12 months, have you or a member of your household attended any recreation program, class or event sponsored by Belvedere-Tiburon Recreation?	Yes	C	C		
	No			A B	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Length of Residence			
		Total	Less than 5 years	5 to 9 years	10 to 19 years
4. In the past 12 months, have you or a member of your household attended any recreation program, class or event sponsored by Belvedere-Tiburon Recreation?	Total	397	47	97	106
	Yes	172	32	47	37
		43.5%	68.4%	48.6%	35.3%
	No	224	15	50	68
		56.5%	31.6%	51.4%	64.7%

		Length of Residence
		20 years or more
4. In the past 12 months, have you or a member of your household attended any recreation program, class or event sponsored by Belvedere-Tiburon Recreation?	Total	147
	Yes	56
		37.8%
	No	91
		62.2%

Comparisons of Column Proportions[a,b]

		Length of Residence			
		Less than 5 years	5 to 9 years	10 to 19 years	20 years or more
		(A)	(B)	(C)	(D)
4. In the past 12 months, have you or a member of your household attended any recreation program, class or event sponsored by Belvedere-Tiburon Recreation?	Yes	C D			
	No			A	A

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Area of Residence			
		Total	Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road	Corinthian Island
4. In the past 12 months, have you or a member of your household attended any recreation program, class or event sponsored by Belvedere-Tiburon Recreation?	Total	392	221	142	9
	Yes	171 43.7%	84 38.2%	72 50.7%	3 34.5%
	No	221 56.3%	136 61.8%	70 49.3%	6 65.5%

		Area of Residence
		West Shore Road
4. In the past 12 months, have you or a member of your household attended any recreation program, class or event sponsored by Belvedere-Tiburon Recreation?	Total	21
	Yes	12 56.6%
	No	9 43.4%

Comparisons of Column Proportions[a,b]

		Area of Residence			
		Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road	Corinthian Island	West Shore Road
		(A)	(B)	(C)	(D)
4. In the past 12 months, have you or a member of your household attended any recreation program, class or event sponsored by Belvedere-Tiburon Recreation?	Yes				
	No				

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Homeownership Status		
		Total	Rent	Own
4. In the past 12 months, have you or a member of your household attended any recreation program, class or event sponsored by Belvedere-Tiburon Recreation?	Total	396	46	349
	Yes	171 43.3%	23 50.2%	148 42.4%
	No	224 56.7%	23 49.8%	201 57.6%

Comparisons of Column Proportions[a,b]

		Homeownership Status	
		Rent	Own
		(A)	(B)
4. In the past 12 months, have you or a member of your household attended any recreation program, class or event sponsored by Belvedere-Tiburon Recreation?	Yes		
	No		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Children in the Household		
		Total	Yes	No
4. In the past 12 months, have you or a member of your household attended any recreation program, class or event sponsored by Belvedere-Tiburon Recreation?	Total	394	110	285
	Yes	173 43.9%	77 70.0%	96 33.8%
	No	221 56.1%	33 30.0%	188 66.2%

Comparisons of Column Proportions[a,b]

		Children in the Household	
		Yes	No
		(A)	(B)
4. In the past 12 months, have you or a member of your household attended any recreation program, class or event sponsored by Belvedere-Tiburon Recreation?	Yes	B	
	No		A

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Seniors in the Household		
		Total	Yes	No
4. In the past 12 months, have you or a member of your household attended any recreation program, class or event sponsored by Belvedere-Tiburon Recreation?	Total	395	167	227
	Yes	171 43.4%	60 35.7%	112 49.1%
	No	223 56.6%	108 64.3%	116 50.9%

Comparisons of Column Proportions[a,b]

		Seniors in the Household	
		Yes	No
		(A)	(B)
4. In the past 12 months, have you or a member of your household attended any recreation program, class or event sponsored by Belvedere-Tiburon Recreation?	Yes		A
	No	B	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Employment Status				
		Total	Full-time	Self-Employed/Home-based Business	Retired	Other
4. In the past 12 months, have you or a member of your household attended any recreation program, class or event sponsored by Belvedere-Tiburon Recreation?	Total	393	97	142	108	46
	Yes	172 43.9%	49 50.6%	63 44.7%	42 39.0%	18 38.6%
	No	221 56.1%	48 49.4%	78 55.3%	66 61.0%	28 61.4%

Comparisons of Column Proportions[a,b]

		Employment Status			
		Full-time	Self-Employed/Home-based Business	Retired	Other
		(A)	(B)	(C)	(D)
4. In the past 12 months, have you or a member of your household attended any recreation program, class or event sponsored by Belvedere-Tiburon Recreation?	Yes				
	No				

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

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		Satisfaction with Quality of Life			
		Total	Very Satisfied	Somewhat Satisfied	Dissatisfied
4. In the past 12 months, have you or a member of your household attended any recreation program, class or event sponsored by Belvedere-Tiburon Recreation?	Total	377	310	49	18
	Yes	162	134	24	4
		43.0%	43.2%	49.2%	23.5%
	No	215	176	25	14
		57.0%	56.8%	50.8%	76.5%

Comparisons of Column Proportions[a,b]

		Satisfaction with Quality of Life		
		Very Satisfied	Somewhat Satisfied	Dissatisfied
		(A)	(B)	(C)
4. In the past 12 months, have you or a member of your household attended any recreation program, class or event sponsored by Belvedere-Tiburon Recreation?	Yes			
	No			

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

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		Participation in Recreation programs, classes or events		
		Total	Yes	No
4. In the past 12 months, have you or a member of your household attended any recreation program, class or event sponsored by Belvedere-Tiburon Recreation?	Total	398	173	225
	Yes	173	173	0
		43.4%	100.0%	.0%
	No	225	0	225
		56.6%	.0%	100.0%

Comparisons of Column Proportions[b,c]

		Participation in Recreation programs, classes or events	
		Yes	No
		(A)	(B)
4. In the past 12 months, have you or a member of your household attended any recreation program, class or event sponsored by Belvedere-Tiburon Recreation?	Yes	[a] .	[a] .
	No	[a] .	[a] .

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

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		Perceived Size of Homes		
		Total	Right Size	Too Large
4. In the past 12 months, have you or a member of your household attended any recreation program, class or event sponsored by Belvedere-Tiburon Recreation?	Total	381	206	176
	Yes	167	97	70
		43.8%	47.0%	40.0%
	No	214	109	106
		56.2%	53.0%	60.0%

Comparisons of Column Proportions[a,b]

		Perceived Size of Homes	
		Right Size	Too Large
		(A)	(B)
4. In the past 12 months, have you or a member of your household attended any recreation program, class or event sponsored by Belvedere-Tiburon Recreation?	Yes		
	No		

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b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Traffic Flow Ratings			
		Total	Excellent	Good	Fair/Poor
4. In the past 12 months, have you or a member of your household attended any recreation program, class or event sponsored by Belvedere-Tiburon Recreation?	Total	393	109	194	90
	Yes	171	57	84	30
		43.5%	52.1%	43.6%	33.0%
	No	222	52	109	60
		56.5%	47.9%	56.4%	67.0%

Comparisons of Column Proportions[a,b]

		Traffic Flow Ratings		
		Excellent	Good	Fair/Poor
		(A)	(B)	(C)
4. In the past 12 months, have you or a member of your household attended any recreation program, class or event sponsored by Belvedere-Tiburon Recreation?	Yes	C		
	No			A

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b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Support for Development of Single Family Homes			
		Total	Strongly Support	Somewhat Support	Oppose
4. In the past 12 months, have you or a member of your household attended any recreation program, class or event sponsored by Belvedere-Tiburon Recreation?	Total	355	108	160	87
	Yes	155	52	58	45
		43.7%	48.2%	36.3%	51.9%
	No	200	56	102	42
		56.3%	51.8%	63.7%	48.1%

Comparisons of Column Proportions[a,b]

		Support for Development of Single Family Homes		
		Strongly Support	Somewhat Support	Oppose
		(A)	(B)	(C)
4. In the past 12 months, have you or a member of your household attended any recreation program, class or event sponsored by Belvedere-Tiburon Recreation?	Yes			
	No			

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b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Gender		
		Total	Male	Female
5. In general, are you satisfied or dissatisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon?	Total	361	158	203
	Very Satisfied	159	72	87
		43.9%	45.3%	42.9%
	Somewhat Satisfied	167	75	92
		46.1%	47.3%	45.2%
	Somewhat Dissatisfied	30	10	20
		8.4%	6.6%	9.7%
	Very Dissatisfied	6	1	4
		1.6%	.8%	2.2%

Comparisons of Column Proportions[a,b]

		Gender	
		Male	Female
		(A)	(B)
5. In general, are you satisfied or dissatisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon?	Very Satisfied		
	Somewhat Satisfied		
	Somewhat Dissatisfied		
	Very Dissatisfied		

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b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Age			
		Total	18 to 44	45 to 54	55 to 64
5. In general, are you satisfied or dissatisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon?	Total	362	84	81	79
	Very Satisfied	161 44.4%	35 41.9%	33 40.4%	33 41.7%
	Somewhat Satisfied	166 45.7%	38 45.2%	42 51.9%	35 44.4%
	Somewhat Dissatisfied	30 8.3%	11 12.9%	5 5.8%	10 12.5%
	Very Dissatisfied	6 1.6%	0 .0%	2 1.9%	1 1.4%

		Age
		65 and over
5. In general, are you satisfied or dissatisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon?	Total	118
	Very Satisfied	60 50.8%
	Somewhat Satisfied	50 42.7%
	Somewhat Dissatisfied	5 4.0%
	Very Dissatisfied	3 2.5%

Comparisons of Column Proportions[b,c]

		Age			
		18 to 44	45 to 54	55 to 64	65 and over
		(A)	(B)	(C)	(D)
5. In general, are you satisfied or dissatisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon?	Very Satisfied				
	Somewhat Satisfied				
	Somewhat Dissatisfied				
	Very Dissatisfied	a .			

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		Length of Residence		
		Total	Less than 5 years	5 to 9 years
5. In general, are you satisfied or dissatisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon?	Total	364	43	93
	Very Satisfied	162 44.5%	19 44.8%	41 43.7%
	Somewhat Satisfied	166 45.7%	24 55.2%	42 45.8%
	Somewhat Dissatisfied	30 8.3%	0 .0%	9 9.4%
	Very Dissatisfied	6 1.5%	0 .0%	1 1.2%

		Length of Residence	
		10 to 19 years	20 years or more
5. In general, are you satisfied or dissatisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon?	Total	96	131
	Very Satisfied	36 37.5%	66 50.1%
	Somewhat Satisfied	42 43.6%	58 43.9%
	Somewhat Dissatisfied	18 18.2%	4 3.0%
	Very Dissatisfied	1 .6%	4 3.0%

Comparisons of Column Proportions[b,c]

		Length of Residence		
		Less than 5 years	5 to 9 years	10 to 19 years
		(A)	(B)	(C)
5. In general, are you satisfied or dissatisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon?	Very Satisfied			
	Somewhat Satisfied			
	Somewhat Dissatisfied	a .		D
	Very Dissatisfied	a .		

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Comparisons of Column Proportions[b,c]

		Length of Residence
		20 years or more
		(D)
5. In general, are you satisfied or dissatisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon?	Very Satisfied	
	Somewhat Satisfied	
	Somewhat Dissatisfied	
	Very Dissatisfied	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Area of Residence		
		Total	Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road
5. In general, are you satisfied or dissatisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon?	Total	361	207	129
	Very Satisfied	160 44.3%	74 35.7%	76 58.7%
	Somewhat Satisfied	165 45.7%	108 52.1%	46 35.9%
	Somewhat Dissatisfied	30 8.4%	21 10.0%	6 4.5%
	Very Dissatisfied	6 1.6%	4 2.1%	1 .9%

		Area of Residence	
		Corinthian Island	West Shore Road
5. In general, are you satisfied or dissatisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon?	Total	8	18
	Very Satisfied	3 38.9%	8 43.1%
	Somewhat Satisfied	4 46.7%	7 41.8%
	Somewhat Dissatisfied	1 14.5%	3 15.1%
	Very Dissatisfied	0 .0%	0 .0%

Comparisons of Column Proportions[b,c]

		Area of Residence		
		Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road	Corinthian Island
		(A)	(B)	(C)
5. In general, are you satisfied or dissatisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon?	Very Satisfied	B	A	
	Somewhat Satisfied			
	Somewhat Dissatisfied			
	Very Dissatisfied			a .

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a. This category is not used in comparisons because its column proportion is equal to zero or one.

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c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

Comparisons of Column Proportions[b,c]

		Area of Residence
		West Shore Road
		(D)
5. In general, are you satisfied or dissatisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon?	Very Satisfied	
	Somewhat Satisfied	
	Somewhat Dissatisfied	
	Very Dissatisfied	a .

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Homeownership Status		
		Total	Rent	Own
5. In general, are you satisfied or dissatisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon?	Total	363	43	320
	Very Satisfied	160 44.2%	27 61.5%	134 41.8%
	Somewhat Satisfied	167 45.9%	15 34.6%	152 47.5%
	Somewhat Dissatisfied	30 8.3%	2 3.9%	29 8.9%
	Very Dissatisfied	6 1.5%	0 .0%	6 1.8%

Comparisons of Column Proportions[b,c]

		Homeownership Status	
		Rent	Own
		(A)	(B)
5. In general, are you satisfied or dissatisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon?	Very Satisfied	B	
	Somewhat Satisfied		
	Somewhat Dissatisfied		
	Very Dissatisfied	[a] .	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Children in the Household		
		Total	Yes	No
5. In general, are you satisfied or dissatisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon?	Total	363	107	256
	Very Satisfied	162 44.6%	55 51.4%	107 41.7%
	Somewhat Satisfied	166 45.7%	49 45.6%	117 45.8%
	Somewhat Dissatisfied	30 8.3%	3 3.0%	27 10.5%
	Very Dissatisfied	5 1.4%	0 .0%	5 2.0%

Comparisons of Column Proportions[b,c]

		Children in the Household	
		Yes	No
		(A)	(B)
5. In general, are you satisfied or dissatisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon?	Very Satisfied		
	Somewhat Satisfied		
	Somewhat Dissatisfied		A
	Very Dissatisfied	[a] .	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Seniors in the Household		
		Total	Yes	No
5. In general, are you satisfied or dissatisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon?	Total	362	148	213
	Very Satisfied	160 44.3%	72 48.2%	89 41.6%
	Somewhat Satisfied	166 45.8%	58 38.9%	108 50.5%
	Somewhat Dissatisfied	30 8.4%	17 11.3%	13 6.3%
	Very Dissatisfied	6 1.6%	2 1.6%	3 1.5%

Comparisons of Column Proportions[a,b]

		Seniors in the Household	
		Yes	No
		(A)	(B)
5. In general, are you satisfied or dissatisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon?	Very Satisfied		
	Somewhat Satisfied		A
	Somewhat Dissatisfied		
	Very Dissatisfied		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Employment Status			
		Total	Full-time	Self-Employed/Home-based Business	Retired
5. In general, are you satisfied or dissatisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon?	Total	360	91	130	99
	Very Satisfied	160 44.5%	34 37.5%	58 44.7%	50 50.2%
	Somewhat Satisfied	167 46.3%	53 58.3%	61 47.2%	46 46.8%
	Somewhat Dissatisfied	28 7.7%	4 4.1%	9 6.8%	2 2.4%
	Very Dissatisfied	6 1.6%	0 .0%	2 1.3%	1 .6%

		Employment Status
		Other
5. In general, are you satisfied or dissatisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon?	Total	41
	Very Satisfied	18 45.6%
	Somewhat Satisfied	6 15.2%
	Somewhat Dissatisfied	13 31.0%
	Very Dissatisfied	3 8.2%

Comparisons of Column Proportions[b,c]

		Employment Status			
		Full-time	Self-Employed/Home-based Business	Retired	Other
		(A)	(B)	(C)	(D)
5. In general, are you satisfied or dissatisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon?	Very Satisfied				
	Somewhat Satisfied	D	D	D	
	Somewhat Dissatisfied				A B C
	Very Dissatisfied	[a] .			C

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c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Satisfaction with Quality of Life		
		Total	Very Satisfied	Somewhat Satisfied
5. In general, are you satisfied or dissatisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon?	Total	347	287	46
	Very Satisfied	155 44.6%	141 49.3%	10 21.2%
	Somewhat Satisfied	159 45.9%	118 41.2%	34 74.1%
	Somewhat Dissatisfied	29 8.2%	24 8.4%	2 4.7%
	Very Dissatisfied	4 1.3%	3 1.0%	0 .0%

		Satisfaction with Quality of Life
		Dissatisfied
5. In general, are you satisfied or dissatisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon?	Total	14
	Very Satisfied	3 24.5%
	Somewhat Satisfied	7 48.8%
	Somewhat Dissatisfied	2 15.5%
	Very Dissatisfied	2 11.2%

Comparisons of Column Proportions[b,c]

		Satisfaction with Quality of Life		
		Very Satisfied	Somewhat Satisfied	Dissatisfied
		(A)	(B)	(C)
5. In general, are you satisfied or dissatisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon?	Very Satisfied	B		
	Somewhat Satisfied		A	
	Somewhat Dissatisfied			
	Very Dissatisfied		[a] .	A

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a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Participation in Recreation programs, classes or events		
		Total	Yes	No
5. In general, are you satisfied or dissatisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon?	Total	364	172	192
	Very Satisfied	161 44.3%	107 62.0%	55 28.5%
	Somewhat Satisfied	167 45.8%	59 34.4%	108 56.0%
	Somewhat Dissatisfied	30 8.3%	6 3.6%	24 12.5%
	Very Dissatisfied	6 1.5%	0 .0%	6 2.9%

Comparisons of Column Proportions[b,c]

		Participation in Recreation programs, classes or events	
		Yes	No
		(A)	(B)
5. In general, are you satisfied or dissatisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon?	Very Satisfied	B	
	Somewhat Satisfied		A
	Somewhat Dissatisfied		A
	Very Dissatisfied	[a]	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Perceived Size of Homes		
		Total	Right Size	Too Large
5. In general, are you satisfied or dissatisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon?	Total	349	189	159
	Very Satisfied	154 44.2%	84 44.6%	70 43.7%
	Somewhat Satisfied	159 45.6%	96 50.8%	63 39.3%
	Somewhat Dissatisfied	30 8.7%	7 3.7%	23 14.6%
	Very Dissatisfied	6 1.6%	2 .9%	4 2.4%

Comparisons of Column Proportions[a,b]

		Perceived Size of Homes	
		Right Size	Too Large
		(A)	(B)
5. In general, are you satisfied or dissatisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon?	Very Satisfied	B	
	Somewhat Satisfied		
	Somewhat Dissatisfied		A
	Very Dissatisfied		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Traffic Flow Ratings			
		Total	Excellent	Good	Fair/Poor
5. In general, are you satisfied or dissatisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon?	Total	359	99	177	83
	Very Satisfied	160 44.5%	61 61.1%	76 42.9%	23 28.1%
	Somewhat Satisfied	163 45.5%	35 35.4%	86 48.4%	43 51.5%
	Somewhat Dissatisfied	30 8.4%	3 2.9%	12 6.8%	15 18.6%
	Very Dissatisfied	6 1.6%	1 .6%	3 2.0%	2 1.9%

Comparisons of Column Proportions[a,b]

		Traffic Flow Ratings		
		Excellent	Good	Fair/Poor
		(A)	(B)	(C)
5. In general, are you satisfied or dissatisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon?	Very Satisfied	B C		
	Somewhat Satisfied			
	Somewhat Dissatisfied			A B
	Very Dissatisfied			

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Support for Development of Single Family Homes		
		Total	Strongly Support	Somewhat Support
5. In general, are you satisfied or dissatisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon?	Total	334	102	151
	Very Satisfied	140 42.1%	57 55.5%	50 32.9%
	Somewhat Satisfied	159 47.5%	39 38.3%	80 52.6%
	Somewhat Dissatisfied	29 8.7%	2 2.3%	22 14.4%
	Very Dissatisfied	6 1.7%	4 3.9%	0 0%

		Support for Development of Single Family Homes
		Oppose
5. In general, are you satisfied or dissatisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon?	Total	81
	Very Satisfied	34 42.2%
	Somewhat Satisfied	40 49.6%
	Somewhat Dissatisfied	5 6.1%
	Very Dissatisfied	2 2.1%

Comparisons of Column Proportions[b,c]

		Support for Development of Single Family Homes		
		Strongly Support	Somewhat Support	Oppose
		(A)	(B)	(C)
5. In general, are you satisfied or dissatisfied with the availability of recreation programs, classes and events in Belvedere and Tiburon?	Very Satisfied	B		
	Somewhat Satisfied			
	Somewhat Dissatisfied		A a .	
	Very Dissatisfied			

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

	Gender		
	Total	Male	Female
6A. After-school and summer programs for children and teens	1.1	1.2	1.0
6B. Children's programs	1.1	1.2	.9
6C. Teen programs	1.0	1.1	.9
6D. Adult fitness and wellness programs, such as yoga or tennis	1.3	1.1	1.4
6E. Adult special interest programs, such as bridge games or language classes	1.0	.8	1.2

Comparisons of Column Means[a,b]

	Gender	
	Male	Female
	(A)	(B)
6A. After-school and summer programs for children and teens	B	
6B. Children's programs	B	
6C. Teen programs		
6D. Adult fitness and wellness programs, such as yoga or tennis		A
6E. Adult special interest programs, such as bridge games or language classes		A

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

	Age				
	Total	18 to 44	45 to 54	55 to 64	65 and over
6A. After-school and summer programs for children and teens	1.1	1.6	1.1	.8	.8
6B. Children's programs	1.1	1.5	1.2	.7	.8
6C. Teen programs	1.0	1.2	1.0	.9	.9
6D. Adult fitness and wellness programs, such as yoga or tennis	1.3	1.2	1.2	1.4	1.2
6E. Adult special interest programs, such as bridge games or language classes	1.0	.7	1.0	1.2	1.1

Comparisons of Column Means[a,b]

	Age			
	18 to 44	45 to 54	55 to 64	65 and over
	(A)	(B)	(C)	(D)
6A. After-school and summer programs for children and teens	B C D			
6B. Children's programs	C D	C D		
6C. Teen programs				
6D. Adult fitness and wellness programs, such as yoga or tennis				
6E. Adult special interest programs, such as bridge games or language classes			A	A

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

	Length of Residence				
	Total	Less than 5 years	5 to 9 years	10 to 19 years	20 years or more
6A. After-school and summer programs for children and teens	1.1	1.4	1.2	1.1	.9
6B. Children's programs	1.0	1.6	1.2	1.0	.8
6C. Teen programs	1.0	1.3	.9	.9	.9
6D. Adult fitness and wellness programs, such as yoga or tennis	1.3	1.2	1.2	1.3	1.3
6E. Adult special interest programs, such as bridge games or language classes	1.0	.9	.9	1.0	1.2

Comparisons of Column Means[a,b]

	Length of Residence			
	Less than 5 years	5 to 9 years	10 to 19 years	20 years or more
	(A)	(B)	(C)	(D)
6A. After-school and summer programs for children and teens	D			
6B. Children's programs	C D			
6C. Teen programs				
6D. Adult fitness and wellness programs, such as yoga or tennis				
6E. Adult special interest programs, such as bridge games or language classes				

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

	Area of Residence				
	Total	Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road	Corinthian Island	West Shore Road
6A. After-school and summer programs for children and teens	1.1	1.0	1.3	.3	.9
6B. Children's programs	1.1	.9	1.3	.2	1.1
6C. Teen programs	1.0	.9	1.2	.4	1.0
6D. Adult fitness and wellness programs, such as yoga or tennis	1.3	1.2	1.4	1.3	1.2
6E. Adult special interest programs, such as bridge games or language classes	1.0	.9	1.2	1.4	1.0

Comparisons of Column Means[a,b]

	Area of Residence			
	Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road	Corinthian Island	West Shore Road
	(A)	(B)	(C)	(D)
6A. After-school and summer programs for children and teens		A		
6B. Children's programs		A C		
6C. Teen programs				
6D. Adult fitness and wellness programs, such as yoga or tennis				
6E. Adult special interest programs, such as bridge games or language classes				

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

	Homeownership Status		
	Total	Rent	Own
6A. After-school and summer programs for children and teens	1.1	1.2	1.1
6B. Children's programs	1.0	1.0	1.0
6C. Teen programs	1.0	1.0	1.0
6D. Adult fitness and wellness programs, such as yoga or tennis	1.3	1.5	1.2
6E. Adult special interest programs, such as bridge games or language classes	1.0	1.2	1.0

Comparisons of Column Means[a,b]

	Homeownership Status	
	Rent	Own
	(A)	(B)
6A. After-school and summer programs for children and teens		
6B. Children's programs		
6C. Teen programs		
6D. Adult fitness and wellness programs, such as yoga or tennis		
6E. Adult special interest programs, such as bridge games or language classes		

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

	Children in the Household		
	Total	Yes	No
6A. After-school and summer programs for children and teens	1.1	1.8	.8
6B. Children's programs	1.0	1.9	.7
6C. Teen programs	1.0	1.4	.8
6D. Adult fitness and wellness programs, such as yoga or tennis	1.3	1.1	1.3
6E. Adult special interest programs, such as bridge games or language classes	1.0	.8	1.1

Comparisons of Column Means[a,b]

	Children in the Household	
	Yes	No
	(A)	(B)
6A. After-school and summer programs for children and teens	B	
6B. Children's programs	B	
6C. Teen programs	B	
6D. Adult fitness and wellness programs, such as yoga or tennis		A
6E. Adult special interest programs, such as bridge games or language classes		A

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

	Seniors in the Household		
	Total	Yes	No
6A. After-school and summer programs for children and teens	1.1	.8	1.2
6B. Children's programs	1.0	.7	1.3
6C. Teen programs	1.0	.8	1.1
6D. Adult fitness and wellness programs, such as yoga or tennis	1.3	1.3	1.3
6E. Adult special interest programs, such as bridge games or language classes	1.0	1.2	.9

Comparisons of Column Means[a,b]

	Seniors in the Household	
	Yes	No
	(A)	(B)
6A. After-school and summer programs for children and teens		A
6B. Children's programs		A
6C. Teen programs		A
6D. Adult fitness and wellness programs, such as yoga or tennis		
6E. Adult special interest programs, such as bridge games or language classes	B	

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

	Employment Status				
	Total	Full-time	Self-Employed/Home-based Business	Retired	Other
6A. After-school and summer programs for children and teens	1.1	1.1	1.2	.7	1.6
6B. Children's programs	1.1	1.1	1.2	.6	1.3
6C. Teen programs	1.0	.9	1.0	.7	1.5
6D. Adult fitness and wellness programs, such as yoga or tennis	1.3	1.2	1.2	1.3	1.5
6E. Adult special interest programs, such as bridge games or language classes	1.0	.8	1.0	1.2	1.3

Comparisons of Column Means[a,b]

	Employment Status			
	Full-time	Self-Employed/Home-based Business	Retired	Other
	(A)	(B)	(C)	(D)
6A. After-school and summer programs for children and teens	C	C		C
6B. Children's programs	C	C		C
6C. Teen programs				A B C
6D. Adult fitness and wellness programs, such as yoga or tennis				
6E. Adult special interest programs, such as bridge games or language classes				

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

	Satisfaction with Quality of Life			
	Total	Very Satisfied	Somewhat Satisfied	Dissatisfied
6A. After-school and summer programs for children and teens	1.1	1.1	.9	.4
6B. Children's programs	1.0	1.1	1.0	.7
6C. Teen programs	1.0	1.0	.8	.9
6D. Adult fitness and wellness programs, such as yoga or tennis	1.3	1.2	1.4	1.1
6E. Adult special interest programs, such as bridge games or language classes	1.0	1.0	1.0	1.0

Comparisons of Column Means[a,b]

	Satisfaction with Quality of Life		
	Very Satisfied	Somewhat Satisfied	Dissatisfied
	(A)	(B)	(C)
6A. After-school and summer programs for children and teens	C		
6B. Children's programs			
6C. Teen programs			
6D. Adult fitness and wellness programs, such as yoga or tennis			
6E. Adult special interest programs, such as bridge games or language classes			

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

	Participation in Recreation programs, classes or events		
	Total	Yes	No
6A. After-school and summer programs for children and teens	1.1	1.5	.7
6B. Children's programs	1.0	1.5	.7
6C. Teen programs	1.0	1.2	.8
6D. Adult fitness and wellness programs, such as yoga or tennis	1.3	1.4	1.2
6E. Adult special interest programs, such as bridge games or language classes	1.0	1.2	.9

Comparisons of Column Means[a,b]

	Participation in Recreation programs, classes or events	
	Yes	No
	(A)	(B)
6A. After-school and summer programs for children and teens	B	
6B. Children's programs	B	
6C. Teen programs	B	
6D. Adult fitness and wellness programs, such as yoga or tennis	B	
6E. Adult special interest programs, such as bridge games or language classes	B	

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

	Perceived Size of Homes		
	Total	Right Size	Too Large
6A. After-school and summer programs for children and teens	1.1	1.1	1.1
6B. Children's programs	1.1	1.1	1.0
6C. Teen programs	1.0	1.0	1.0
6D. Adult fitness and wellness programs, such as yoga or tennis	1.3	1.1	1.4
6E. Adult special interest programs, such as bridge games or language classes	1.0	.9	1.2

Comparisons of Column Means[a,b]

	Perceived Size of Homes	
	Right Size	Too Large
	(A)	(B)
6A. After-school and summer programs for children and teens		
6B. Children's programs		
6C. Teen programs		
6D. Adult fitness and wellness programs, such as yoga or tennis		A
6E. Adult special interest programs, such as bridge games or language classes		A

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

	Traffic Flow Ratings			
	Total	Excellent	Good	Fair/Poor
6A. After-school and summer programs for children and teens	1.1	1.3	1.0	1.0
6B. Children's programs	1.1	1.4	1.0	.8
6C. Teen programs	1.0	1.1	.9	1.1
6D. Adult fitness and wellness programs, such as yoga or tennis	1.3	1.2	1.2	1.4
6E. Adult special interest programs, such as bridge games or language classes	1.0	1.0	1.0	1.0

Comparisons of Column Means[a,b]

	Traffic Flow Ratings		
	Excellent	Good	Fair/Poor
	(A)	(B)	(C)
6A. After-school and summer programs for children and teens			
6B. Children's programs	B C		
6C. Teen programs			
6D. Adult fitness and wellness programs, such as yoga or tennis			
6E. Adult special interest programs, such as bridge games or language classes			

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

	Support for Development of Single Family Homes			
	Total	Strongly Support	Somewhat Support	Oppose
6A. After-school and summer programs for children and teens	1.1	1.1	1.0	1.2
6B. Children's programs	1.1	1.1	1.0	1.2
6C. Teen programs	1.0	.9	1.0	1.0
6D. Adult fitness and wellness programs, such as yoga or tennis	1.3	1.3	1.3	1.3
6E. Adult special interest programs, such as bridge games or language classes	1.0	1.1	1.0	.9

Comparisons of Column Means[a,b]

	Support for Development of Single Family Homes		
	Strongly Support	Somewhat Support	Oppose
	(A)	(B)	(C)
6A. After-school and summer programs for children and teens			
6B. Children's programs			
6C. Teen programs			
6D. Adult fitness and wellness programs, such as yoga or tennis			
6E. Adult special interest programs, such as bridge games or language classes			

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

	Gender		
	Total	Male	Female
7A. Development of single-family homes	.7	.6	.8
7B. Development of second units to single-family homes	-.1	-.1	-.1
7C. Development of condominiums	-.7	-.7	-.7
7D. Development of apartments	-.9	-.9	-.9
7E. Development of mixed-use buildings with shops or services on the first floor and condominiums on the upper floors	.0	.0	.0
7F. Development of small shops, restaurants, and services	.7	.6	.8

Comparisons of Column Means[a,b]

	Gender	
	Male	Female
	(A)	(B)
7A. Development of single-family homes		
7B. Development of second units to single-family homes		
7C. Development of condominiums		
7D. Development of apartments		
7E. Development of mixed-use buildings with shops or services on the first floor and condominiums on the upper floors		
7F. Development of small shops, restaurants, and services		

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

	Age				
	Total	18 to 44	45 to 54	55 to 64	65 and over
7A. Development of single-family homes	.7	.5	.9	.3	.9
7B. Development of second units to single-family homes	-.1	-.2	.3	-.3	-.2
7C. Development of condominiums	-.7	-.7	-.7	-.7	-.7
7D. Development of apartments	-.9	-.9	-.9	-.9	-1.0
7E. Development of mixed-use buildings with shops or services on the first floor and condominiums on the upper floors	.0	.5	.1	-.2	-.4
7F. Development of small shops, restaurants, and services	.7	1.0	.8	.8	.5

Comparisons of Column Means[a,b]

	Age			
	18 to 44	45 to 54	55 to 64	65 and over
	(A)	(B)	(C)	(D)
7A. Development of single-family homes		C		C
7B. Development of second units to single-family homes		C D		
7C. Development of condominiums				
7D. Development of apartments				
7E. Development of mixed-use buildings with shops or services on the first floor and condominiums on the upper floors	C D			
7F. Development of small shops, restaurants, and services				

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

	Length of Residence				
	Total	Less than 5 years	5 to 9 years	10 to 19 years	20 years or more
7A. Development of single-family homes	.7	.5	.6	.6	.9
7B. Development of second units to single-family homes	-.1	-.1	-.2	.0	-.2
7C. Development of condominiums	-.7	-.7	-.9	-.6	-.7
7D. Development of apartments	-.9	-1.0	-1.0	-.7	-.9
7E. Development of mixed-use buildings with shops or services on the first floor and condominiums on the upper floors	.0	.2	.4	-.2	-.3
7F. Development of small shops, restaurants, and services	.7	1.2	.7	.6	.6

Comparisons of Column Means[a,b]

	Length of Residence			
	Less than 5 years	5 to 9 years	10 to 19 years	20 years or more
	(A)	(B)	(C)	(D)
7A. Development of single-family homes		C D		
7B. Development of second units to single-family homes				
7C. Development of condominiums				
7D. Development of apartments				
7E. Development of mixed-use buildings with shops or services on the first floor and condominiums on the upper floors				
7F. Development of small shops, restaurants, and services				

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

	Area of Residence				
	Total	Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road	Corinthian Island	West Shore Road
7A. Development of single-family homes	.7	.7	.7	-.3	.5
7B. Development of second units to single-family homes	-.1	-.2	.0	-.8	.2
7C. Development of condominiums	-.7	-.8	-.6	-.2	-1.0
7D. Development of apartments	-.9	-.9	-.9	-.1	-1.6
7E. Development of mixed-use buildings with shops or services on the first floor and condominiums on the upper floors	.0	.0	-.1	.5	-.4
7F. Development of small shops, restaurants, and services	.7	.8	.6	.3	1.3

Comparisons of Column Means[a,b]

	Area of Residence			
	Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road	Corinthian Island	West Shore Road
	(A)	(B)	(C)	(D)
7A. Development of single-family homes			D	
7B. Development of second units to single-family homes				
7C. Development of condominiums				
7D. Development of apartments				
7E. Development of mixed-use buildings with shops or services on the first floor and condominiums on the upper floors				
7F. Development of small shops, restaurants, and services				

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

	Homeownership Status		
	Total	Rent	Own
7A. Development of single-family homes	.7	.7	.7
7B. Development of second units to single-family homes	-.1	.1	-.2
7C. Development of condominiums	-.7	-.6	-.8
7D. Development of apartments	-.9	-.6	-1.0
7E. Development of mixed-use buildings with shops or services on the first floor and condominiums on the upper floors	.0	-.3	.0
7F. Development of small shops, restaurants, and services	.7	.4	.8

Comparisons of Column Means[a,b]

	Homeownership Status	
	Rent	Own
	(A)	(B)
7A. Development of single-family homes		
7B. Development of second units to single-family homes		
7C. Development of condominiums		
7D. Development of apartments		
7E. Development of mixed-use buildings with shops or services on the first floor and condominiums on the upper floors		
7F. Development of small shops, restaurants, and services		

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

	Children in the Household		
	Total	Yes	No
7A. Development of single-family homes	.7	.4	.8
7B. Development of second units to single-family homes	-.1	.0	-.2
7C. Development of condominiums	-.7	-.9	-.7
7D. Development of apartments	-.9	-1.0	-.9
7E. Development of mixed-use buildings with shops or services on the first floor and condominiums on the upper floors	-.1	.2	-.1
7F. Development of small shops, restaurants, and services	.7	.9	.7

Comparisons of Column Means[a,b]

	Children in the Household	
	Yes	No
	(A)	(B)
7A. Development of single-family homes		A
7B. Development of second units to single-family homes		
7C. Development of condominiums		
7D. Development of apartments		
7E. Development of mixed-use buildings with shops or services on the first floor and condominiums on the upper floors		
7F. Development of small shops, restaurants, and services		

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

	Seniors in the Household		
	Total	Yes	No
7A. Development of single-family homes	.7	.9	.6
7B. Development of second units to single-family homes	-.1	-.2	-.1
7C. Development of condominiums	-.7	-.6	-.8
7D. Development of apartments	-.9	-.8	-1.0
7E. Development of mixed-use buildings with shops or services on the first floor and condominiums on the upper floors	.0	-.2	.0
7F. Development of small shops, restaurants, and services	.7	.6	.8

Comparisons of Column Means[a,b]

	Seniors in the Household	
	Yes	No
	(A)	(B)
7A. Development of single-family homes		
7B. Development of second units to single-family homes		
7C. Development of condominiums		
7D. Development of apartments		
7E. Development of mixed-use buildings with shops or services on the first floor and condominiums on the upper floors		
7F. Development of small shops, restaurants, and services		

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

	Employment Status				
	Total	Full-time	Self-Employed/Home-based Business	Retired	Other
7A. Development of single-family homes	.7	.5	.7	.9	.8
7B. Development of second units to single-family homes	-.1	-.1	.0	-.3	-.3
7C. Development of condominiums	-.7	-.8	-.7	-.8	-.2
7D. Development of apartments	-.9	-1.1	-.8	-1.0	-.4
7E. Development of mixed-use buildings with shops or services on the first floor and condominiums on the upper floors	.0	.3	.0	-.5	.2
7F. Development of small shops, restaurants, and services	.7	.8	.7	.6	.9

Comparisons of Column Means[a,b]

	Employment Status				
	Full-time	Self-Employed/Home-based Business	Retired	Other	
	(A)	(B)	(C)	(D)	
7A. Development of single-family homes					
7B. Development of second units to single-family homes					
7C. Development of condominiums					
7D. Development of apartments				A	
7E. Development of mixed-use buildings with shops or services on the first floor and condominiums on the upper floors	C				
7F. Development of small shops, restaurants, and services					

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

	Satisfaction with Quality of Life			
	Total	Very Satisfied	Somewhat Satisfied	Dissatisfied
7A. Development of single-family homes	.7	.7	.7	.3
7B. Development of second units to single-family homes	-.1	-.2	.0	.2
7C. Development of condominiums	-.7	-.7	-.9	-.9
7D. Development of apartments	-.9	-.9	-1.0	-.9
7E. Development of mixed-use buildings with shops or services on the first floor and condominiums on the upper floors	-.1	.0	.0	-.3
7F. Development of small shops, restaurants, and services	.7	.7	.7	.5

Comparisons of Column Means[a,b]

	Satisfaction with Quality of Life		
	Very Satisfied	Somewhat Satisfied	Dissatisfied
	(A)	(B)	(C)
7A. Development of single-family homes			
7B. Development of second units to single-family homes			
7C. Development of condominiums			
7D. Development of apartments			
7E. Development of mixed-use buildings with shops or services on the first floor and condominiums on the upper floors			
7F. Development of small shops, restaurants, and services			

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

	Participation in Recreation programs, classes or events		
	Total	Yes	No
7A. Development of single-family homes	.7	.6	.7
7B. Development of second units to single-family homes	-.1	.0	-.2
7C. Development of condominiums	-.7	-.7	-.8
7D. Development of apartments	-.9	-1.0	-.9
7E. Development of mixed-use buildings with shops or services on the first floor and condominiums on the upper floors	.0	.1	-.1
7F. Development of small shops, restaurants, and services	.7	.8	.6

Comparisons of Column Means[a,b]

	Participation in Recreation programs, classes or events	
	Yes	No
	(A)	(B)
7A. Development of single-family homes		
7B. Development of second units to single-family homes		
7C. Development of condominiums		
7D. Development of apartments		
7E. Development of mixed-use buildings with shops or services on the first floor and condominiums on the upper floors		
7F. Development of small shops, restaurants, and services		

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

	Perceived Size of Homes		
	Total	Right Size	Too Large
7A. Development of single-family homes	.7	.8	.6
7B. Development of second units to single-family homes	-.1	-.1	-.2
7C. Development of condominiums	-.7	-.7	-.6
7D. Development of apartments	-.9	-1.0	-.8
7E. Development of mixed-use buildings with shops or services on the first floor and condominiums on the upper floors	.0	.1	-.2
7F. Development of small shops, restaurants, and services	.7	.9	.5

Comparisons of Column Means[a,b]

	Perceived Size of Homes	
	Right Size	Too Large
	(A)	(B)
7A. Development of single-family homes		
7B. Development of second units to single-family homes		
7C. Development of condominiums		
7D. Development of apartments		
7E. Development of mixed-use buildings with shops or services on the first floor and condominiums on the upper floors		
7F. Development of small shops, restaurants, and services	B	

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

	Traffic Flow Ratings			
	Total	Excellent	Good	Fair/Poor
7A. Development of single-family homes	.7	.6	.7	.7
7B. Development of second units to single-family homes	-.1	.2	-.2	-.4
7C. Development of condominiums	-.7	-.6	-.8	-.6
7D. Development of apartments	-.9	-.9	-1.0	-.8
7E. Development of mixed-use buildings with shops or services on the first floor and condominiums on the upper floors	.0	.2	-.3	.3
7F. Development of small shops, restaurants, and services	.7	.9	.5	.9

Comparisons of Column Means[a,b]

	Traffic Flow Ratings		
	Excellent	Good	Fair/Poor
	(A)	(B)	(C)
7A. Development of single-family homes			
7B. Development of second units to single-family homes	C		
7C. Development of condominiums			
7D. Development of apartments			
7E. Development of mixed-use buildings with shops or services on the first floor and condominiums on the upper floors			B
7F. Development of small shops, restaurants, and services			

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

	Support for Development of Single Family Homes			
	Total	Strongly Support	Somewhat Support	Oppose
7A. Development of single-family homes	.7	2.0	1.0	-1.5
7B. Development of second units to single-family homes	-.1	.2	.1	-1.0
7C. Development of condominiums	-.7	-.7	-.4	-1.3
7D. Development of apartments	-.9	-1.0	-.6	-1.4
7E. Development of mixed-use buildings with shops or services on the first floor and condominiums on the upper floors	-.1	-.1	.2	-.6
7F. Development of small shops, restaurants, and services	.7	.6	.9	.4

Comparisons of Column Means[a,b]

	Support for Development of Single Family Homes		
	Strongly Support	Somewhat Support	Oppose
	(A)	(B)	(C)
7A. Development of single-family homes	B C	C	
7B. Development of second units to single-family homes	C	C	
7C. Development of condominiums	C	C	
7D. Development of apartments	C	C	
7E. Development of mixed-use buildings with shops or services on the first floor and condominiums on the upper floors		C	
7F. Development of small shops, restaurants, and services			

Results are based on two-sided tests assuming equal variances with significance level 0.05. For each significant pair, the key of the smaller category appears under the category with larger mean.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts in some subtables are not integers. They were rounded to the nearest integers before performing pairwise comparisons.

		Gender		
		Total	Male	Female
8. Please consider the new homes and additions to existing homes that have been built in Belvedere within the past 10 years. In general, do you think these homes are too small, the right size, or too large for the character of teh city?	Total	381	173	208
	Too small	4 1.0%	2 1.0%	2 1.0%
	The right size	206 54.0%	105 61.0%	100 48.2%
	Too large	171 45.0%	66 38.0%	106 50.8%

Comparisons of Column Proportions[a,b]

		Gender	
		Male	Female
		(A)	(B)
8. Please consider the new homes and additions to existing homes that have been built in Belvedere within the past 10 years. In general, do you think these homes are too small, the right size, or too large for the character of teh city?	Too small		
	The right size	B	
	Too large		A

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Age				
		Total	18 to 44	45 to 54	55 to 64	65 and over
8. Please consider the new homes and additions to existing homes that have been built in Belvedere within the past 10 years. In general, do you think these homes are too small, the right size, or too large for the character of teh city?	Total	381	81	86	88	127
	Too small	4 1.0%	0 .0%	2 1.8%	0 .0%	2 1.9%
	The right size	205 53.7%	62 77.3%	56 65.5%	42 47.5%	44 35.0%
	Too large	173 45.3%	18 22.7%	28 32.7%	46 52.5%	80 63.1%

Comparisons of Column Proportions[b,c]

		Age			
		18 to 44	45 to 54	55 to 64	65 and over
		(A)	(B)	(C)	(D)
8. Please consider the new homes and additions to existing homes that have been built in Belvedere within the past 10 years. In general, do you think these homes are too small, the right size, or too large for the character of teh city?	Too small	.[a]		.[a]	
	The right size	C D	D		
	Too large			A	A B

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Length of Residence			
		Total	Less than 5 years	5 to 9 years	10 to 19 years
8. Please consider the new homes and additions to existing homes that have been built in Belvedere within the past 10 years. In general, do you think these homes are too small, the right size, or too large for the character of teh city?	Total	384	45	93	103
	Too small	4	1	0	2
		1.0%	1.3%	.0%	1.5%
	The right size	205	34	69	46
		53.3%	74.0%	74.5%	44.5%
	Too large	176	11	24	56
		45.7%	24.7%	25.5%	54.0%

		Length of Residence
		20 years or more
8. Please consider the new homes and additions to existing homes that have been built in Belvedere within the past 10 years. In general, do you think these homes are too small, the right size, or too large for the character of teh city?	Total	142
	Too small	2
		1.2%
	The right size	56
		39.3%
	Too large	85
		59.4%

Comparisons of Column Proportions[b,c]

		Length of Residence		
		Less than 5 years	5 to 9 years	10 to 19 years
		(A)	(B)	(C)
8. Please consider the new homes and additions to existing homes that have been built in Belvedere within the past 10 years. In general, do you think these homes are too small, the right size, or too large for the character of teh city?	Too small		.[a]	
	The right size	C D	C D	
	Too large			A B

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

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Comparisons of Column Proportions[b,c]

		Length of Residence
		20 years or more
		(D)
8. Please consider the new homes and additions to existing homes that have been built in Belvedere within the past 10 years. In general, do you think these homes are too small, the right size, or too large for the character of teh city?	Too small	
	The right size	
	Too large	A B

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Area of Residence			
		Total	Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road	Corinthian Island
8. Please consider the new homes and additions to existing homes that have been built in Belvedere within the past 10 years. In general, do you think these homes are too small, the right size, or too large for the character of teh city?	Total	381	213	138	9
	Too small	4 1.0%	4 1.8%	0 .0%	0 .0%
	The right size	203 53.5%	108 50.4%	79 57.2%	4 42.8%
	Too large	173 45.5%	102 47.8%	59 42.8%	5 57.2%

		Area of Residence
		West Shore Road
8. Please consider the new homes and additions to existing homes that have been built in Belvedere within the past 10 years. In general, do you think these homes are too small, the right size, or too large for the character of teh city?	Total	20
	Too small	0 .0%
	The right size	13 65.2%
	Too large	7 34.8%

Comparisons of Column Proportions[b,c]

		Area of Residence		
		Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road	Corinthian Island
		(A)	(B)	(C)
8. Please consider the new homes and additions to existing homes that have been built in Belvedere within the past 10 years. In general, do you think these homes are too small, the right size, or too large for the character of teh city?	Too small		[a] .	[a] .
	The right size			
	Too large			

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

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c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

Comparisons of Column Proportions[b,c]

		Area of Residence
		West Shore Road
		(D)
8. Please consider the new homes and additions to existing homes that have been built in Belvedere within the past 10 years. In general, do you think these homes are too small, the right size, or too large for the character of teh city?	Too small	[a] .
	The right size	
	Too large	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Homeownership Status		
		Total	Rent	Own
8. Please consider the new homes and additions to existing homes that have been built in Belvedere within the past 10 years. In general, do you think these homes are too small, the right size, or too large for the character of teh city?	Total	383	41	342
	Too small	4 1.0%	0 .0%	4 1.1%
	The right size	206 53.6%	18 44.4%	187 54.7%
	Too large	174 45.4%	23 55.6%	151 44.1%

Comparisons of Column Proportions[b,c]

		Homeownership Status	
		Rent	Own
		(A)	(B)
8. Please consider the new homes and additions to existing homes that have been built in Belvedere within the past 10 years. In general, do you think these homes are too small, the right size, or too large for the character of teh city?	Too small	[a] .	
	The right size		
	Too large		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Children in the Household		
		Total	Yes	No
8. Please consider the new homes and additions to existing homes that have been built in Belvedere within the past 10 years. In general, do you think these homes are too small, the right size, or too large for the character of teh city?	Total	382	104	278
	Too small	4	0	4
		1.0%	.0%	1.4%
	The right size	205	80	125
		53.6%	76.9%	44.9%
	Too large	173	24	149
		45.3%	23.1%	53.7%

Comparisons of Column Proportions[b,c]

		Children in the Household	
		Yes	No
		(A)	(B)
8. Please consider the new homes and additions to existing homes that have been built in Belvedere within the past 10 years. In general, do you think these homes are too small, the right size, or too large for the character of teh city?	Too small	[a] .	
	The right size	B	
	Too large		A

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Seniors in the Household		
		Total	Yes	No
8. Please consider the new homes and additions to existing homes that have been built in Belvedere within the past 10 years. In general, do you think these homes are too small, the right size, or too large for the character of teh city?	Total	382	162	221
	Too small	4	4	0
		1.0%	2.4%	.0%
	The right size	203	54	149
		53.1%	33.7%	67.3%
	Too large	176	103	72
		45.9%	63.9%	32.7%

Comparisons of Column Proportions[b,c]

		Seniors in the Household	
		Yes	No
		(A)	(B)
8. Please consider the new homes and additions to existing homes that have been built in Belvedere within the past 10 years. In general, do you think these homes are too small, the right size, or too large for the character of teh city?	Too small		[a] .
	The right size		A
	Too large	B	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Employment Status				
		Total	Full-time	Self-Employed/Home-based Business	Retired	Other
8. Please consider the new homes and additions to existing homes that have been built in Belvedere within the past 10 years. In general, do you think these homes are too small, the right size, or too large for the character of teh city?	Total	381	95	140	102	43
	Too small	4	1	3	0	0
		1.0%	1.2%	2.0%	.0%	.0%
	The right size	202	69	87	34	11
		53.0%	72.9%	62.1%	33.6%	25.9%
	Too large	175	25	50	68	32
		46.0%	25.9%	36.0%	66.4%	74.1%

Comparisons of Column Proportions[b,c]

		Employment Status			
		Full-time	Self-Employed/Home-based Business	Retired	Other
		(A)	(B)	(C)	(D)
8. Please consider the new homes and additions to existing homes that have been built in Belvedere within the past 10 years. In general, do you think these homes are too small, the right size, or too large for the character of teh city?	Too small			[a] .	[a] .
	The right size	C D	C D		
	Too large			A B	A B

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Satisfaction with Quality of Life			
		Total	Very Satisfied	Somewhat Satisfied	Dissatisfied
8. Please consider the new homes and additions to existing homes that have been built in Belvedere within the past 10 years. In general, do you think these homes are too small, the right size, or too large for the character of teh city?	Total	365	299	48	18
	Too small	4	2	1	1
		1.1%	.7%	1.2%	6.7%
	The right size	195	163	27	5
		53.4%	54.5%	55.8%	28.1%
	Too large	166	134	21	12
		45.5%	44.8%	43.0%	65.2%

Comparisons of Column Proportions[a,b]

		Satisfaction with Quality of Life		
		Very Satisfied	Somewhat Satisfied	Dissatisfied
		(A)	(B)	(C)
8. Please consider the new homes and additions to existing homes that have been built in Belvedere within the past 10 years. In general, do you think these homes are too small, the right size, or too large for the character of teh city?	Too small			A
	The right size			
	Too large			

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Participation in Recreation programs, classes or events		
		Total	Yes	No
8. Please consider the new homes and additions to existing homes that have been built in Belvedere within the past 10 years. In general, do you think these homes are too small, the right size, or too large for the character of teh city?	Total	385	167	218
	Too small	4	0	4
		1.0%	.0%	1.8%
	The right size	206	97	109
		53.3%	57.9%	49.9%
	Too large	176	70	106
		45.6%	42.1%	48.3%

Comparisons of Column Proportions[b,c]

		Participation in Recreation programs, classes or events	
		Yes	No
		(A)	(B)
8. Please consider the new homes and additions to existing homes that have been built in Belvedere within the past 10 years. In general, do you think these homes are too small, the right size, or too large for the character of teh city?	Too small	.[a]	
	The right size		
	Too large		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Perceived Size of Homes		
		Total	Right Size	Too Large
8. Please consider the new homes and additions to existing homes that have been built in Belvedere within the past 10 years. In general, do you think these homes are too small, the right size, or too large for the character of teh city?	Total	382	206	177
	The right size	206	206	0
		53.8%	100.0%	.0%
	Too large	177	0	177
		46.2%	.0%	100.0%

Comparisons of Column Proportions[b,c]

		Perceived Size of Homes	
		Right Size	Too Large
		(A)	(B)
8. Please consider the new homes and additions to existing homes that have been built in Belvedere within the past 10 years. In general, do you think these homes are too small, the right size, or too large for the character of teh city?	The right size	[a] .	[a] .
	Too large	[a] .	[a] .

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Traffic Flow Ratings			
		Total	Excellent	Good	Fair/Poor
8. Please consider the new homes and additions to existing homes that have been built in Belvedere within the past 10 years. In general, do you think these homes are too small, the right size, or too large for the character of teh city?	Total	382	109	185	88
	Too small	4	2	2	0
		1.0%	2.2%	.8%	.0%
	The right size	204	64	97	42
		53.4%	58.9%	52.7%	48.1%
	Too large	174	42	86	46
		45.6%	39.0%	46.5%	51.9%

Comparisons of Column Proportions[b,c]

		Traffic Flow Ratings		
		Excellent	Good	Fair/Poor
		(A)	(B)	(C)
8. Please consider the new homes and additions to existing homes that have been built in Belvedere within the past 10 years. In general, do you think these homes are too small, the right size, or too large for the character of teh city?	Too small			[a] .
	The right size			
	Too large			

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

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c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Support for Development of Single Family Homes			
		Total	Strongly Support	Somewhat Support	Oppose
8. Please consider the new homes and additions to existing homes that have been built in Belvedere within the past 10 years. In general, do you think these homes are too small, the right size, or too large for the character of teh city?	Total	348	105	157	86
	Too small	4	2	2	0
		1.1%	2.0%	1.1%	.0%
	The right size	185	55	89	41
		53.1%	52.5%	56.4%	47.7%
	Too large	160	48	67	45
		45.8%	45.5%	42.5%	52.3%

Comparisons of Column Proportions[b,c]

		Support for Development of Single Family Homes		
		Strongly Support	Somewhat Support	Oppose
		(A)	(B)	(C)
8. Please consider the new homes and additions to existing homes that have been built in Belvedere within the past 10 years. In general, do you think these homes are too small, the right size, or too large for the character of teh city?	Too small			[a]
	The right size			
	Too large			

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

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c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Gender		
		Total	Male	Female
9. Would you support or oppose creating an absolute limit on maximum house size?	Total	385	177	208
	Strongly Support	146 37.8%	58 32.5%	88 42.3%
	Somewhat Support	106 27.5%	43 24.2%	63 30.3%
	Somewhat Oppose	52 13.6%	32 18.3%	20 9.6%
	Strongly Oppose	82 21.2%	44 25.1%	37 17.9%

Comparisons of Column Proportions[a,b]

		Gender	
		Male	Female
		(A)	(B)
9. Would you support or oppose creating an absolute limit on maximum house size?	Strongly Support		A
	Somewhat Support		
	Somewhat Oppose	B	
	Strongly Oppose		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Age				
		Total	18 to 44	45 to 54	55 to 64	65 and over
9. Would you support or oppose creating an absolute limit on maximum house size?	Total	385	82	84	89	130
	Strongly Support	146 37.9%	9 11.3%	25 29.6%	40 44.4%	72 55.7%
	Somewhat Support	105 27.3%	38 45.8%	17 20.4%	22 24.7%	28 21.9%
	Somewhat Oppose	52 13.6%	9 11.3%	17 20.4%	10 11.1%	16 12.3%
	Strongly Oppose	82 21.2%	26 31.6%	25 29.6%	18 19.8%	13 10.0%

Comparisons of Column Proportions[a,b]

		Age			
		18 to 44	45 to 54	55 to 64	65 and over
		(A)	(B)	(C)	(D)
9. Would you support or oppose creating an absolute limit on maximum house size?	Strongly Support		A		
	Somewhat Support	B C D		A	A B
	Somewhat Oppose				
	Strongly Oppose	D	D		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Length of Residence			
		Total	Less than 5 years	5 to 9 years	10 to 19 years
9. Would you support or oppose creating an absolute limit on maximum house size?	Total	389	45	96	101
	Strongly Support	146 37.4%	15 32.0%	25 26.0%	32 31.7%
	Somewhat Support	107 27.6%	3 7.6%	35 36.5%	34 33.1%
	Somewhat Oppose	54 14.0%	6 12.9%	20 20.3%	14 13.3%
	Strongly Oppose	82 21.0%	22 47.4%	17 17.3%	22 21.9%

		Length of Residence
		20 years or more
9. Would you support or oppose creating an absolute limit on maximum house size?	Total	146
	Strongly Support	74 50.7%
	Somewhat Support	35 24.2%
	Somewhat Oppose	15 10.6%
	Strongly Oppose	21 14.6%

Comparisons of Column Proportions[a,b]

		Length of Residence		
		Less than 5 years	5 to 9 years	10 to 19 years
		(A)	(B)	(C)
9. Would you support or oppose creating an absolute limit on maximum house size?	Strongly Support Somewhat Support Somewhat Oppose Strongly Oppose	B C D	A	A

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b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

Comparisons of Column Proportions[a,b]

		Length of Residence
		20 years or more
		(D)
9. Would you support or oppose creating an absolute limit on maximum house size?	Strongly Support Somewhat Support Somewhat Oppose Strongly Oppose	B C

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Area of Residence		
		Total	Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road
9. Would you support or oppose creating an absolute limit on maximum house size?	Total	384	217	137
	Strongly Support	144 37.6%	71 32.7%	61 44.4%
	Somewhat Support	105 27.4%	68 31.5%	28 20.2%
	Somewhat Oppose	53 13.8%	35 16.1%	16 11.8%
	Strongly Oppose	82 21.2%	43 19.7%	32 23.6%

		Area of Residence	
		Corinthian Island	West Shore Road
9. Would you support or oppose creating an absolute limit on maximum house size?	Total	9	21
	Strongly Support	4 45.2%	8 39.9%
	Somewhat Support	2 24.9%	7 32.4%
	Somewhat Oppose	1 6.5%	2 7.5%
	Strongly Oppose	2 23.4%	4 20.2%

Comparisons of Column Proportions[a,b]

		Area of Residence		
		Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road	Corinthian Island
		(A)	(B)	(C)
9. Would you support or oppose creating an absolute limit on maximum house size?	Strongly Support			
	Somewhat Support			
	Somewhat Oppose			
	Strongly Oppose			

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Comparisons of Column Proportions[a,b]

		Area of Residence
		West Shore Road
		(D)
9. Would you support or oppose creating an absolute limit on maximum house size?	Strongly Support	
	Somewhat Support	
	Somewhat Oppose	
	Strongly Oppose	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Homeownership Status		
		Total	Rent	Own
9. Would you support or oppose creating an absolute limit on maximum house size?	Total	388	41	347
	Strongly Support	146 37.7%	19 46.6%	127 36.6%
	Somewhat Support	106 27.3%	10 25.3%	95 27.5%
	Somewhat Oppose	54 14.0%	3 8.1%	51 14.7%
	Strongly Oppose	82 21.0%	8 20.1%	73 21.2%

Comparisons of Column Proportions[a,b]

		Homeownership Status	
		Rent	Own
		(A)	(B)
9. Would you support or oppose creating an absolute limit on maximum house size?	Strongly Support		
	Somewhat Support		
	Somewhat Oppose		
	Strongly Oppose		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Children in the Household		
		Total	Yes	No
9. Would you support or oppose creating an absolute limit on maximum house size?	Total	387	106	281
	Strongly Support	145 37.5%	28 26.3%	117 41.8%
	Somewhat Support	107 27.6%	13 12.2%	94 33.4%
	Somewhat Oppose	54 14.0%	20 18.9%	34 12.2%
	Strongly Oppose	80 20.8%	45 42.6%	35 12.6%

Comparisons of Column Proportions[a,b]

		Children in the Household	
		Yes	No
		(A)	(B)
9. Would you support or oppose creating an absolute limit on maximum house size?	Strongly Support		A
	Somewhat Support		A
	Somewhat Oppose		
	Strongly Oppose	B	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

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b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Seniors in the Household		
		Total	Yes	No
9. Would you support or oppose creating an absolute limit on maximum house size?	Total	387	166	221
	Strongly Support	146	82	64
		37.8%	49.4%	29.1%
	Somewhat Support	107	47	61
		27.8%	28.2%	27.4%
	Somewhat Oppose	52	19	32
		13.4%	11.6%	14.7%
	Strongly Oppose	82	18	64
		21.1%	10.8%	28.8%

Comparisons of Column Proportions[a,b]

		Seniors in the Household	
		Yes	No
		(A)	(B)
9. Would you support or oppose creating an absolute limit on maximum house size?	Strongly Support	B	
	Somewhat Support		
	Somewhat Oppose		
	Strongly Oppose		A

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a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Employment Status				
		Total	Full-time	Self-Employed/Home-based Business	Retired	Other
9. Would you support or oppose creating an absolute limit on maximum house size?	Total	385	97	138	106	43
	Strongly Support	146	19	49	59	20
		38.0%	19.7%	35.2%	55.1%	45.4%
	Somewhat Support	107	37	25	28	18
		27.9%	37.6%	18.0%	26.3%	41.6%
	Somewhat Oppose	52	15	21	12	3
		13.4%	15.8%	15.3%	11.6%	6.4%
	Strongly Oppose	80	26	44	7	3
		20.8%	26.8%	31.4%	7.0%	6.7%

Comparisons of Column Proportions[a,b]

		Employment Status			
		Full-time	Self-Employed/Home-based Business	Retired	Other
		(A)	(B)	(C)	(D)
9. Would you support or oppose creating an absolute limit on maximum house size?	Strongly Support			A B	A
	Somewhat Support	B			B
	Somewhat Oppose				
	Strongly Oppose	C D	C D		

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a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Satisfaction with Quality of Life			
		Total	Very Satisfied	Somewhat Satisfied	Dissatisfied
9. Would you support or oppose creating an absolute limit on maximum house size?	Total	371	305	50	16
	Strongly Support	138	112	18	8
		37.1%	36.8%	35.6%	47.6%
	Somewhat Support	103	92	10	2
		27.8%	30.0%	20.0%	10.5%
	Somewhat Oppose	52	43	7	2
		14.0%	14.2%	13.1%	13.3%
	Strongly Oppose	78	58	16	5
		21.0%	19.0%	31.3%	28.5%

Comparisons of Column Proportions[a,b]

		Satisfaction with Quality of Life		
		Very Satisfied	Somewhat Satisfied	Dissatisfied
		(A)	(B)	(C)
9. Would you support or oppose creating an absolute limit on maximum house size?	Strongly Support			
	Somewhat Support			
	Somewhat Oppose			
	Strongly Oppose			

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Participation in Recreation programs, classes or events		
		Total	Yes	No
9. Would you support or oppose creating an absolute limit on maximum house size?	Total	390	171	219
	Strongly Support	146 37.3%	66 38.6%	80 36.3%
	Somewhat Support	108 27.8%	35 20.3%	74 33.6%
	Somewhat Oppose	54 13.9%	23 13.5%	31 14.2%
	Strongly Oppose	82 20.9%	47 27.5%	35 15.8%

Comparisons of Column Proportions[a,b]

		Participation in Recreation programs, classes or events	
		Yes	No
		(A)	(B)
9. Would you support or oppose creating an absolute limit on maximum house size?	Strongly Support		A
	Somewhat Support		
	Somewhat Oppose		
	Strongly Oppose	B	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Perceived Size of Homes		
		Total	Right Size	Too Large
9. Would you support or oppose creating an absolute limit on maximum house size?	Total	378	203	175
	Strongly Support	143 37.9%	32 15.9%	111 63.3%
	Somewhat Support	107 28.4%	62 30.5%	45 25.9%
	Somewhat Oppose	52 13.9%	39 19.4%	13 7.5%
	Strongly Oppose	75 19.9%	69 34.2%	6 3.3%

Comparisons of Column Proportions[a,b]

		Perceived Size of Homes	
		Right Size	Too Large
		(A)	(B)
9. Would you support or oppose creating an absolute limit on maximum house size?	Strongly Support		A
	Somewhat Support		
	Somewhat Oppose	B	
	Strongly Oppose	B	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Traffic Flow Ratings			
		Total	Excellent	Good	Fair/Poor
9. Would you support or oppose creating an absolute limit on maximum house size?	Total	385	107	187	90
	Strongly Support	144 37.5%	39 36.1%	77 41.2%	28 31.4%
	Somewhat Support	107 27.7%	22 20.1%	50 26.6%	35 39.1%
	Somewhat Oppose	54 14.1%	13 12.4%	29 15.3%	12 13.7%
	Strongly Oppose	79 20.6%	34 31.3%	32 16.9%	14 15.8%

Comparisons of Column Proportions[a,b]

		Traffic Flow Ratings		
		Excellent	Good	Fair/Poor
		(A)	(B)	(C)
9. Would you support or oppose creating an absolute limit on maximum house size?	Strongly Support			A
	Somewhat Support			
	Somewhat Oppose			
	Strongly Oppose	B C		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Support for Development of Single Family Homes		
		Total	Strongly Support	Somewhat Support
9. Would you support or oppose creating an absolute limit on maximum house size?	Total	350	108	159
	Strongly Support	128 36.6%	45 41.7%	48 30.3%
	Somewhat Support	102 29.0%	19 17.7%	61 38.4%
	Somewhat Oppose	45 13.0%	10 9.0%	22 14.1%
	Strongly Oppose	75 21.4%	34 31.5%	27 17.1%

		Support for Development of Single Family Homes
		Oppose
9. Would you support or oppose creating an absolute limit on maximum house size?	Total	84
	Strongly Support	35 42.0%
	Somewhat Support	22 25.7%
	Somewhat Oppose	13 15.9%
	Strongly Oppose	14 16.4%

Comparisons of Column Proportions[a,b]

		Support for Development of Single Family Homes		
		Strongly Support	Somewhat Support	Oppose
		(A)	(B)	(C)
9. Would you support or oppose creating an absolute limit on maximum house size?	Strongly Support			
	Somewhat Support		A	
	Somewhat Oppose			
	Strongly Oppose	B C		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Gender		
		Total	Male	Female
10. Pursuant to the Zoning Ordinance, the City of Belvedere can grant a license to property owners to allow private fences along streets and roadways and on other public land. In general, do you support or oppose this practice?	Total	363	167	196
	Strongly Support	103 28.4%	54 32.6%	49 24.9%
	Somewhat Support	139 38.2%	61 36.6%	77 39.5%
	Somewhat Oppose	76 21.1%	29 17.3%	48 24.3%
	Strongly Oppose	45 12.3%	23 13.5%	22 11.2%

Comparisons of Column Proportions[a,b]

		Gender	
		Male	Female
		(A)	(B)
10. Pursuant to the Zoning Ordinance, the City of Belvedere can grant a license to property owners to allow private fences along streets and roadways and on other public land. In general, do you support or oppose this practice?	Strongly Support		
	Somewhat Support		
	Somewhat Oppose		
	Strongly Oppose		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Age				
		Total	18 to 44	45 to 54	55 to 64	65 and over
10. Pursuant to the Zoning Ordinance, the City of Belvedere can grant a license to property owners to allow private fences along streets and roadways and on other public land. In general, do you support or oppose this practice?	Total	364	79	82	81	121
	Strongly Support	103 28.3%	20 26.0%	26 32.1%	23 28.4%	33 27.3%
	Somewhat Support	140 38.4%	30 37.5%	30 35.8%	29 35.1%	52 42.9%
	Somewhat Oppose	76 21.0%	25 31.8%	12 15.1%	18 21.6%	21 17.6%
	Strongly Oppose	45 12.3%	4 4.7%	14 17.0%	12 14.9%	15 12.2%

Comparisons of Column Proportions[a,b]

		Age			
		18 to 44	45 to 54	55 to 64	65 and over
		(A)	(B)	(C)	(D)
10. Pursuant to the Zoning Ordinance, the City of Belvedere can grant a license to property owners to allow private fences along streets and roadways and on other public land. In general, do you support or oppose this practice?	Strongly Support				
	Somewhat Support				
	Somewhat Oppose				
	Strongly Oppose				

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Length of Residence			
		Total	Less than 5 years	5 to 9 years	10 to 19 years
10. Pursuant to the Zoning Ordinance, the City of Belvedere can grant a license to property owners to allow private fences along streets and roadways and on other public land. In general, do you support or oppose this practice?	Total	367	44	90	98
	Strongly Support	103 28.2%	14 31.7%	21 23.8%	28 28.4%
	Somewhat Support	142 38.8%	17 39.3%	30 33.0%	39 40.0%
	Somewhat Oppose	76 20.9%	5 12.6%	31 34.8%	19 19.2%
	Strongly Oppose	45 12.2%	7 16.5%	8 8.4%	12 12.5%

		Length of Residence
		20 years or more
10. Pursuant to the Zoning Ordinance, the City of Belvedere can grant a license to property owners to allow private fences along streets and roadways and on other public land. In general, do you support or oppose this practice?	Total	135
	Strongly Support	40 29.8%
	Somewhat Support	56 41.7%
	Somewhat Oppose	21 15.4%
	Strongly Oppose	18 13.1%

Comparisons of Column Proportions[a,b]

		Length of Residence		
		Less than 5 years	5 to 9 years	10 to 19 years
		(A)	(B)	(C)
10. Pursuant to the Zoning Ordinance, the City of Belvedere can grant a license to property owners to allow private fences along streets and roadways and on other public land. In general, do you support or oppose this practice?	Strongly Support			
	Somewhat Support			
	Somewhat Oppose		A D	
	Strongly Oppose			

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

Comparisons of Column Proportions[a,b]

		Length of Residence
		20 years or more
		(D)
10. Pursuant to the Zoning Ordinance, the City of Belvedere can grant a license to property owners to allow private fences along streets and roadways and on other public land. In general, do you support or oppose this practice?	Strongly Support	
	Somewhat Support	
	Somewhat Oppose	
	Strongly Oppose	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Area of Residence		
		Total	Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road
10. Pursuant to the Zoning Ordinance, the City of Belvedere can grant a license to property owners to allow private fences along streets and roadways and on other public land. In general, do you support or oppose this practice?	Total	364	202	134
	Strongly Support	103 28.4%	53 26.2%	38 28.4%
	Somewhat Support	142 38.9%	84 41.7%	48 36.1%
	Somewhat Oppose	75 20.6%	45 22.2%	26 19.4%
	Strongly Oppose	44 12.1%	20 9.8%	21 16.0%

		Area of Residence	
		Corinthian Island	West Shore Road
10. Pursuant to the Zoning Ordinance, the City of Belvedere can grant a license to property owners to allow private fences along streets and roadways and on other public land. In general, do you support or oppose this practice?	Total	8	20
	Strongly Support	4 49.1%	8 42.0%
	Somewhat Support	3 36.0%	6 30.5%
	Somewhat Oppose	1 7.4%	3 16.6%
	Strongly Oppose	1 7.4%	2 10.9%

Comparisons of Column Proportions[a,b]

		Area of Residence		
		Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road	Corinthian Island
		(A)	(B)	(C)
10. Pursuant to the Zoning Ordinance, the City of Belvedere can grant a license to property owners to allow private fences along streets and roadways and on other public land. In general, do you support or oppose this practice?	Strongly Support			
	Somewhat Support			
	Somewhat Oppose			
	Strongly Oppose			

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

Comparisons of Column Proportions[a,b]

		Area of Residence
		West Shore Road
		(D)
10. Pursuant to the Zoning Ordinance, the City of Belvedere can grant a license to property owners to allow private fences along streets and roadways and on other public land. In general, do you support or oppose this practice?	Strongly Support	
	Somewhat Support	
	Somewhat Oppose	
	Strongly Oppose	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Homeownership Status		
		Total	Rent	Own
10. Pursuant to the Zoning Ordinance, the City of Belvedere can grant a license to property owners to allow private fences along streets and roadways and on other public land. In general, do you support or oppose this practice?	Total	366	38	328
	Strongly Support	103 28.2%	7 18.5%	96 29.4%
	Somewhat Support	141 38.6%	17 45.7%	124 37.8%
	Somewhat Oppose	76 20.9%	8 20.5%	69 21.0%
	Strongly Oppose	45 12.2%	6 15.2%	39 11.9%

Comparisons of Column Proportions[a,b]

		Homeownership Status	
		Rent	Own
		(A)	(B)
10. Pursuant to the Zoning Ordinance, the City of Belvedere can grant a license to property owners to allow private fences along streets and roadways and on other public land. In general, do you support or oppose this practice?	Strongly Support		
	Somewhat Support		
	Somewhat Oppose		
	Strongly Oppose		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Children in the Household		
		Total	Yes	No
10. Pursuant to the Zoning Ordinance, the City of Belvedere can grant a license to property owners to allow private fences along streets and roadways and on other public land. In general, do you support or oppose this practice?	Total	364	103	261
	Strongly Support	103 28.2%	40 38.6%	63 24.1%
	Somewhat Support	142 39.0%	32 31.5%	110 42.0%
	Somewhat Oppose	75 20.5%	15 14.4%	60 22.9%
	Strongly Oppose	45 12.3%	16 15.5%	29 11.0%

Comparisons of Column Proportions[a,b]

		Children in the Household	
		Yes	No
		(A)	(B)
10. Pursuant to the Zoning Ordinance, the City of Belvedere can grant a license to property owners to allow private fences along streets and roadways and on other public land. In general, do you support or oppose this practice?	Strongly Support	B	
	Somewhat Support		
	Somewhat Oppose		
	Strongly Oppose		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Seniors in the Household		
		Total	Yes	No
10. Pursuant to the Zoning Ordinance, the City of Belvedere can grant a license to property owners to allow private fences along streets and roadways and on other public land. In general, do you support or oppose this practice?	Total	364	155	210
	Strongly Support	102 27.9%	41 26.2%	61 29.1%
	Somewhat Support	142 38.9%	75 48.5%	67 31.8%
	Somewhat Oppose	76 21.0%	25 16.0%	52 24.6%
	Strongly Oppose	45 12.3%	14 9.2%	30 14.5%

Comparisons of Column Proportions[a,b]

		Seniors in the Household	
		Yes	No
		(A)	(B)
10. Pursuant to the Zoning Ordinance, the City of Belvedere can grant a license to property owners to allow private fences along streets and roadways and on other public land. In general, do you support or oppose this practice?	Strongly Support	B	
	Somewhat Support		
	Somewhat Oppose		A
	Strongly Oppose		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Employment Status				
		Total	Full-time	Self-Employed/Home-based Business	Retired	Other
10. Pursuant to the Zoning Ordinance, the City of Belvedere can grant a license to property owners to allow private fences along streets and roadways and on other public land. In general, do you support or oppose this practice?	Total	363	91	132	99	41
	Strongly Support	102 28.0%	26 28.1%	40 30.0%	28 27.9%	9 21.6%
	Somewhat Support	143 39.3%	35 38.9%	42 32.2%	43 43.9%	22 51.9%
	Somewhat Oppose	75 20.7%	27 29.9%	24 18.3%	18 18.3%	6 14.0%
	Strongly Oppose	44 12.0%	3 3.1%	26 19.6%	10 9.9%	5 12.5%

Comparisons of Column Proportions[a,b]

		Employment Status			
		Full-time	Self-Employed/Home-based Business	Retired	Other
		(A)	(B)	(C)	(D)
10. Pursuant to the Zoning Ordinance, the City of Belvedere can grant a license to property owners to allow private fences along streets and roadways and on other public land. In general, do you support or oppose this practice?	Strongly Support				
	Somewhat Support				
	Somewhat Oppose				
	Strongly Oppose		A		

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b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Satisfaction with Quality of Life			
		Total	Very Satisfied	Somewhat Satisfied	Dissatisfied
10. Pursuant to the Zoning Ordinance, the City of Belvedere can grant a license to property owners to allow private fences along streets and roadways and on other public land. In general, do you support or oppose this practice?	Total	351	286	48	17
	Strongly Support	95 27.1%	72 25.0%	12 26.0%	11 65.0%
	Somewhat Support	139 39.5%	114 40.0%	20 42.9%	4 22.5%
	Somewhat Oppose	75 21.3%	67 23.4%	8 16.5%	0 .0%
	Strongly Oppose	43 12.1%	33 11.7%	7 14.6%	2 12.6%

Comparisons of Column Proportions[b,c]

		Satisfaction with Quality of Life		
		Very Satisfied	Somewhat Satisfied	Dissatisfied
		(A)	(B)	(C)
10. Pursuant to the Zoning Ordinance, the City of Belvedere can grant a license to property owners to allow private fences along streets and roadways and on other public land. In general, do you support or oppose this practice?	Strongly Support			A B
	Somewhat Support			
	Somewhat Oppose			a
	Strongly Oppose			.

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

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c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Participation in Recreation programs, classes or events		
		Total	Yes	No
10. Pursuant to the Zoning Ordinance, the City of Belvedere can grant a license to property owners to allow private fences along streets and roadways and on other public land. In general, do you support or oppose this practice?	Total	368	161	207
	Strongly Support	104 28.3%	58 35.9%	46 22.4%
	Somewhat Support	143 38.8%	58 36.0%	85 40.9%
	Somewhat Oppose	76 20.8%	20 12.5%	56 27.2%
	Strongly Oppose	45 12.1%	25 15.6%	20 9.5%

Comparisons of Column Proportions[a,b]

		Participation in Recreation programs, classes or events	
		Yes	No
		(A)	(B)
10. Pursuant to the Zoning Ordinance, the City of Belvedere can grant a license to property owners to allow private fences along streets and roadways and on other public land. In general, do you support or oppose this practice?	Strongly Support	B	
	Somewhat Support		
	Somewhat Oppose		A
	Strongly Oppose		

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a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Perceived Size of Homes		
		Total	Right Size	Too Large
10. Pursuant to the Zoning Ordinance, the City of Belvedere can grant a license to property owners to allow private fences along streets and roadways and on other public land. In general, do you support or oppose this practice?	Total	355	193	161
	Strongly Support	100 28.1%	70 36.0%	30 18.5%
	Somewhat Support	137 38.6%	66 34.1%	71 43.9%
	Somewhat Oppose	75 21.2%	43 22.1%	33 20.2%
	Strongly Oppose	43 12.1%	15 7.8%	28 17.4%

Comparisons of Column Proportions[a,b]

		Perceived Size of Homes	
		Right Size	Too Large
		(A)	(B)
10. Pursuant to the Zoning Ordinance, the City of Belvedere can grant a license to property owners to allow private fences along streets and roadways and on other public land. In general, do you support or oppose this practice?	Strongly Support	B	
	Somewhat Support		
	Somewhat Oppose		
	Strongly Oppose		A

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

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b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Traffic Flow Ratings			
		Total	Excellent	Good	Fair/Poor
10. Pursuant to the Zoning Ordinance, the City of Belvedere can grant a license to property owners to allow private fences along streets and roadways and on other public land. In general, do you support or oppose this practice?	Total	366	99	180	87
	Strongly Support	104 28.5%	42 42.2%	46 25.6%	16 18.8%
	Somewhat Support	142 38.9%	34 34.8%	77 43.0%	31 35.0%
	Somewhat Oppose	76 20.9%	9 9.4%	36 19.9%	31 36.1%
	Strongly Oppose	43 11.8%	13 13.6%	21 11.6%	9 10.1%

Comparisons of Column Proportions[a,b]

		Traffic Flow Ratings		
		Excellent	Good	Fair/Poor
		(A)	(B)	(C)
10. Pursuant to the Zoning Ordinance, the City of Belvedere can grant a license to property owners to allow private fences along streets and roadways and on other public land. In general, do you support or oppose this practice?	Strongly Support	B C		
	Somewhat Support			
	Somewhat Oppose			A B
	Strongly Oppose			

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Support for Development of Single Family Homes		
		Total	Strongly Support	Somewhat Support
10. Pursuant to the Zoning Ordinance, the City of Belvedere can grant a license to property owners to allow private fences along streets and roadways and on other public land. In general, do you support or oppose this practice?	Total	338	103	155
	Strongly Support	94 27.7%	39 37.5%	34 22.2%
	Somewhat Support	128 38.0%	35 34.3%	61 39.3%
	Somewhat Oppose	73 21.6%	16 15.2%	45 29.2%
	Strongly Oppose	43	13	14

		Support for Development of Single Family Homes
		Oppose
10. Pursuant to the Zoning Ordinance, the City of Belvedere can grant a license to property owners to allow private fences along streets and roadways and on other public land. In general, do you support or oppose this practice?	Total	79
	Strongly Support	20 25.8%
	Somewhat Support	32 40.4%
	Somewhat Oppose	12 15.3%
	Strongly Oppose	15 18.5%

Comparisons of Column Proportions[a,b]

		Support for Development of Single Family Homes		
		Strongly Support	Somewhat Support	Oppose
		(A)	(B)	(C)
10. Pursuant to the Zoning Ordinance, the City of Belvedere can grant a license to property owners to allow private fences along streets and roadways and on other public land. In general, do you support or oppose this practice?	Strongly Support	B		
	Somewhat Support			
	Somewhat Oppose		A	
	Strongly Oppose			

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b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Gender		
		Total	Male	Female
11. In general, how would you rate traffic flow within the City of Belvedere?	Total	388	173	215
	Excellent	109 28.0%	55 32.0%	53 24.7%
	Good	190 48.8%	91 52.4%	99 45.9%
	Fair	80 20.6%	21 12.4%	58 27.1%
	Poor	10 2.6%	6 3.2%	5 2.2%

Comparisons of Column Proportions[a,b]

		Gender	
		Male	Female
		(A)	(B)
11. In general, how would you rate traffic flow within the City of Belvedere?	Excellent		
	Good		
	Fair		A
	Poor		

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a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Age				
		Total	18 to 44	45 to 54	55 to 64	65 and over
11. In general, how would you rate traffic flow within the City of Belvedere?	Total	388	84	84	89	131
	Excellent	108 27.7%	24 28.7%	31 37.0%	21 23.5%	31 24.0%
	Good	191 49.1%	20 24.3%	42 50.0%	51 56.8%	78 59.3%
	Fair	80 20.6%	34 40.4%	11 13.0%	17 18.5%	18 14.0%
	Poor	10 2.6%	6 6.6%	0 .0%	1 1.2%	4 2.7%

Comparisons of Column Proportions[b,c]

		Age			
		18 to 44	45 to 54	55 to 64	65 and over
		(A)	(B)	(C)	(D)
11. In general, how would you rate traffic flow within the City of Belvedere?	Excellent				
	Good		A	A	A
	Fair	B C D	[a]		
	Poor				

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

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c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Length of Residence			
		Total	Less than 5 years	5 to 9 years	10 to 19 years
11. In general, how would you rate traffic flow within the City of Belvedere?	Total	392	47	95	104
	Excellent	110 28.0%	21 43.6%	23 23.8%	22 21.5%
	Good	192 49.0%	13 27.2%	44 45.8%	60 57.9%
	Fair	80 20.4%	8 17.4%	29 30.4%	21 20.1%
	Poor	10 2.6%	6 11.8%	0 .0%	1 .6%

		Length of Residence
		20 years or more
11. In general, how would you rate traffic flow within the City of Belvedere?	Total	145
	Excellent	44 30.3%
	Good	75 51.9%
	Fair	22 15.0%
	Poor	4 2.8%

Comparisons of Column Proportions[b,c]

		Length of Residence			
		Less than 5 years	5 to 9 years	10 to 19 years	20 years or more
		(A)	(B)	(C)	(D)
11. In general, how would you rate traffic flow within the City of Belvedere?	Excellent	C			
	Good			A	A
	Fair		D		
	Poor	C D	[a] .		

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a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Area of Residence			
		Total	Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road	Corinthian Island
11. In general, how would you rate traffic flow within the City of Belvedere?	Total	387	217	141	9
	Excellent	110 28.3%	49 22.7%	50 35.1%	2 25.0%
	Good	190 49.0%	101 46.4%	75 53.1%	5 61.2%
	Fair	78 20.2%	63 29.2%	11 7.6%	1 13.8%
	Poor	10 2.5%	4 1.7%	6 4.2%	0 .0%

		Area of Residence
		West Shore Road
11. In general, how would you rate traffic flow within the City of Belvedere?	Total	20
	Excellent	9 42.2%
	Good	9 43.2%
	Fair	3 14.7%
	Poor	0 .0%

Comparisons of Column Proportions[b,c]

		Area of Residence		
		Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road	Corinthian Island
		(A)	(B)	(C)
11. In general, how would you rate traffic flow within the City of Belvedere?	Excellent			
	Good			
	Fair	B		
	Poor			[a] .

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Comparisons of Column Proportions[b,c]

		Area of Residence
		West Shore Road
		(D)
11. In general, how would you rate traffic flow within the City of Belvedere?	Excellent	
	Good	
	Fair	
	Poor	a

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a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Homeownership Status		
		Total	Rent	Own
11. In general, how would you rate traffic flow within the City of Belvedere?	Total	391	46	345
	Excellent	110 28.0%	17 36.5%	93 26.9%
	Good	191 48.9%	22 47.5%	169 49.1%
	Fair	80 20.4%	7 14.7%	73 21.2%
	Poor	10 2.6%	1 1.3%	10 2.8%

Comparisons of Column Proportions[a,b]

		Homeownership Status	
		Rent	Own
		(A)	(B)
11. In general, how would you rate traffic flow within the City of Belvedere?	Excellent		
	Good		
	Fair		
	Poor		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Children in the Household		
		Total	Yes	No
11. In general, how would you rate traffic flow within the City of Belvedere?	Total	390	108	281
	Excellent	110 28.1%	47 43.0%	63 22.4%
	Good	190 48.7%	47 43.2%	143 50.9%
	Fair	80 20.5%	9 8.6%	71 25.1%
	Poor	10 2.6%	6 5.2%	5 1.7%

Comparisons of Column Proportions[a,b]

		Children in the Household	
		Yes	No
		(A)	(B)
11. In general, how would you rate traffic flow within the City of Belvedere?	Excellent	B	
	Good		
	Fair		A
	Poor		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Seniors in the Household		
		Total	Yes	No
11. In general, how would you rate traffic flow within the City of Belvedere?	Total	390	166	224
	Excellent	108 27.7%	42 25.6%	66 29.3%
	Good	193 49.4%	88 53.3%	104 46.6%
	Fair	79 20.2%	31 18.9%	47 21.1%
	Poor	10 2.6%	4 2.1%	7 3.0%

Comparisons of Column Proportions[a,b]

		Seniors in the Household	
		Yes	No
		(A)	(B)
11. In general, how would you rate traffic flow within the City of Belvedere?	Excellent		
	Good		
	Fair		
	Poor		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Employment Status				
		Total	Full-time	Self-Employed/Home-based Business	Retired	Other
11. In general, how would you rate traffic flow within the City of Belvedere?	Total	389	96	140	107	46
	Excellent	109	31	46	24	7
		27.9%	32.9%	32.9%	22.0%	16.2%
	Good	190	32	73	64	21
		48.9%	33.6%	52.5%	59.6%	44.9%
	Fair	80	28	17	17	18
		20.5%	29.7%	12.0%	15.6%	38.9%
	Poor	10	4	4	3	0
		2.6%	3.9%	2.5%	2.8%	.0%

Comparisons of Column Proportions[b,c]

		Employment Status			
		Full-time	Self-Employed/Home-based Business	Retired	Other
		(A)	(B)	(C)	(D)
11. In general, how would you rate traffic flow within the City of Belvedere?	Excellent				
	Good				
	Fair	B	A	A	B C [a]
	Poor				

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		Satisfaction with Quality of Life			
		Total	Very Satisfied	Somewhat Satisfied	Dissatisfied
11. In general, how would you rate traffic flow within the City of Belvedere?	Total	372	306	48	18
	Excellent	106	95	5	6
		28.6%	30.9%	11.3%	34.8%
	Good	181	139	35	7
		48.8%	45.6%	73.1%	37.2%
	Fair	75	65	5	4
		20.1%	21.4%	10.5%	24.6%
	Poor	10	7	2	1
		2.6%	2.2%	5.1%	3.4%

Comparisons of Column Proportions[a,b]

		Satisfaction with Quality of Life		
		Very Satisfied	Somewhat Satisfied	Dissatisfied
		(A)	(B)	(C)
11. In general, how would you rate traffic flow within the City of Belvedere?	Excellent	B		
	Good		A C	
	Fair			
	Poor			

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a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

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		Participation in Recreation programs, classes or events		
		Total	Yes	No
11. In general, how would you rate traffic flow within the City of Belvedere?	Total	393	171	222
	Excellent	109 27.8%	57 33.2%	52 23.5%
	Good	194 49.3%	84 49.4%	109 49.3%
	Fair	80 20.3%	24 13.8%	56 25.3%
	Poor	10 2.6%	6 3.6%	4 1.9%

Comparisons of Column Proportions[a,b]

		Participation in Recreation programs, classes or events	
		Yes	No
		(A)	(B)
11. In general, how would you rate traffic flow within the City of Belvedere?	Excellent	B	
	Good		
	Fair		A
	Poor		

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		Perceived Size of Homes		
		Total	Right Size	Too Large
11. In general, how would you rate traffic flow within the City of Belvedere?	Total	378	204	174
	Excellent	107 28.2%	64 31.5%	42 24.4%
	Good	183 48.5%	97 47.7%	86 49.3%
	Fair	78 20.6%	36 17.8%	42 23.9%
	Poor	10 2.7%	6 3.0%	4 2.3%

Comparisons of Column Proportions[a,b]

		Perceived Size of Homes	
		Right Size	Too Large
		(A)	(B)
11. In general, how would you rate traffic flow within the City of Belvedere?	Excellent		
	Good		
	Fair		
	Poor		

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		Traffic Flow Ratings			
		Total	Excellent	Good	Fair/Poor
11. In general, how would you rate traffic flow within the City of Belvedere?	Total	393	110	194	90
	Excellent	110 27.9%	110 100.0%	0 .0%	0 .0%
	Good	194 49.2%	0 .0%	194 100.0%	0 .0%
	Fair	80 20.3%	0 .0%	0 .0%	80 88.6%
	Poor	10 2.6%	0 .0%	0 .0%	10 11.4%

Comparisons of Column Proportions[b,c]

		Traffic Flow Ratings		
		Excellent	Good	Fair/Poor
		(A)	(B)	(C)
11. In general, how would you rate traffic flow within the City of Belvedere?	Excellent	a.	a.	a.
	Good	a.	a.	a.
	Fair	a.	a.	
	Poor	a.	a.	

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		Support for Development of Single Family Homes			
		Total	Strongly Support	Somewhat Support	Oppose
11. In general, how would you rate traffic flow within the City of Belvedere?	Total	350	106	158	87
	Excellent	96 27.5%	36 33.8%	31 19.7%	30 34.2%
	Good	172 49.1%	56 53.2%	76 47.9%	40 46.2%
	Fair	72 20.7%	13 11.9%	46 28.9%	14 16.2%
	Poor	10 2.8%	1 1.1%	6 3.5%	3 3.4%

Comparisons of Column Proportions[a,b]

		Support for Development of Single Family Homes		
		Strongly Support	Somewhat Support	Oppose
		(A)	(B)	(C)
11. In general, how would you rate traffic flow within the City of Belvedere?	Excellent	B		B
	Good			
	Fair		A	
	Poor			

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

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		Gender		
		Total	Male	Female
12. What type of transportation do you typically use to go to work, school, or other places you visit most frequently?	Total	386	174	212
	Bicycle	64 16.6%	29 16.9%	35 16.4%
	Bus	23 5.9%	6 3.6%	17 7.8%
	Carpool/Ride with others	78 20.1%	25 14.5%	52 24.7%
	Drive alone	351 91.0%	155 89.0%	196 92.5%
	Ferry	113 29.2%	59 34.1%	53 25.1%
	Walk	149 38.6%	57 32.8%	92 43.3%
	Other	11 3.0%	3 2.0%	8 3.7%

Comparisons of Column Proportions[a,b]

		Gender	
		Male	Female
		(A)	(B)
12. What type of transportation do you typically use to go to work, school, or other places you visit most frequently?	Bicycle		
	Bus		
	Carpool/Ride with others		A
	Drive alone		
	Ferry		
	Walk		A
	Other		

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b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Age			
		Total	18 to 44	45 to 54	55 to 64
12. What type of transportation do you typically use to go to work, school, or other places you visit most frequently?	Total	387	84	86	87
	Bicycle	64 16.6%	16 19.5%	25 29.1%	11 12.7%
	Bus	23 5.9%	15 17.3%	3 3.6%	2 2.5%
	Carpool/Ride with others	78 20.2%	20 23.9%	20 23.6%	18 20.3%
	Drive alone	351 90.6%	81 95.6%	76 89.1%	75 86.1%
	Ferry	115 29.6%	26 30.9%	39 45.5%	23 26.6%
	Walk	151 39.0%	30 35.0%	28 32.7%	40 45.6%
	Other	11 2.9%	2 2.2%	3 3.6%	1 1.3%

		Age
		65 and over
12. What type of transportation do you typically use to go to work, school, or other places you visit most frequently?	Total	130
	Bicycle	12 9.1%
	Bus	3 2.3%
	Carpool/Ride with others	20 15.5%
	Drive alone	119 91.4%
	Ferry	27 20.5%
	Walk	54 41.4%
	Other	5 4.1%

Comparisons of Column Proportions[a,b]

		Age			
		18 to 44	45 to 54	55 to 64	65 and over
		(A)	(B)	(C)	(D)
12. What type of transportation do you typically use to go to work, school, or other places you visit most frequently?	Bicycle	B C D	C D		
	Bus				
	Carpool/Ride with others				
	Drive alone				
	Ferry		D		
	Walk				
	Other				

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		Length of Residence		
		Total	Less than 5 years	5 to 9 years
12. What type of transportation do you typically use to go to work, school, or other places you visit most frequently?	Total	390	47	95
	Bicycle	64 16.5%	10 21.9%	10 10.7%
	Bus	23 5.9%	0 .0%	3 3.6%
	Carpool/Ride with others	78 20.1%	7 14.1%	15 15.7%
	Drive alone	353 90.7%	44 92.5%	87 91.8%
	Ferry	115 29.4%	20 41.4%	28 29.2%
	Walk	152 39.0%	17 35.5%	25 26.6%
	Other	11 2.9%	2 5.2%	2 2.3%

		Length of Residence	
		10 to 19 years	20 years or more
12. What type of transportation do you typically use to go to work, school, or other places you visit most frequently?	Total	104	143
	Bicycle	28 26.6%	16 11.2%
	Bus	17 15.8%	3 2.1%
	Carpool/Ride with others	34 32.7%	22 15.7%
	Drive alone	91 86.9%	132 92.0%
	Ferry	34 32.6%	34 23.4%
	Walk	52 50.0%	58 40.4%
	Other	3 3.3%	3 2.3%

Comparisons of Column Proportions[b,c]

		Length of Residence		
		Less than 5 years	5 to 9 years	10 to 19 years
		(A)	(B)	(C)
12. What type of transportation do you typically use to go to work, school, or other places you visit most frequently?	Bicycle	[a]		B D
	Bus			B D
	Carpool/Ride with others			B D
	Drive alone			
	Ferry			
	Walk			B
	Other			

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Comparisons of Column Proportions[b,c]

		Length of Residence
		20 years or more
		(D)
12. What type of transportation do you typically use to go to work, school, or other places you visit most frequently?	Bicycle	
	Bus	
	Carpool/Ride with others	
	Drive alone	
	Ferry	
	Walk	
	Other	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Area of Residence		
		Total	Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road
12. What type of transportation do you typically use to go to work, school, or other places you visit most frequently?	Total	385	217	139
	Bicycle	63 16.2%	31 14.3%	25 18.0%
	Bus	23 5.9%	17 8.0%	6 4.0%
	Carpool/Ride with others	76 19.9%	39 17.9%	32 22.8%
	Drive alone	349 90.5%	201 92.5%	119 85.9%
	Ferry	115 29.8%	58 26.5%	46 33.4%
	Walk	150 38.9%	78 36.1%	60 43.6%
	Other	11 3.0%	7 3.4%	3 2.4%

		Area of Residence	
		Corinthian Island	West Shore Road
12. What type of transportation do you typically use to go to work, school, or other places you visit most frequently?	Total	9	21
	Bicycle	1 6.9%	6 28.1%
	Bus	0 .0%	0 .0%
	Carpool/Ride with others	1 13.8%	5 23.1%
	Drive alone	8 93.1%	21 100.0%
	Ferry	2 25.0%	9 41.4%
	Walk	6 73.4%	5 22.8%
	Other	1 6.9%	0 .0%

Comparisons of Column Proportions[b,c]

		Area of Residence		
		Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road	Corinthian Island
		(A)	(B)	(C)
12. What type of transportation do you typically use to go to work, school, or other places you visit most frequently?	Bicycle			
	Bus			[a] .
	Carpool/Ride with others			
	Drive alone			
	Ferry			
	Walk			
	Other			

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Comparisons of Column Proportions[b,c]

		Area of Residence
		West Shore Road
		(D)
12. What type of transportation do you typically use to go to work, school, or other places you visit most frequently?	Bicycle	
	Bus	[a] .
	Carpool/Ride with others	
	Drive alone	[a] .
	Ferry	
	Walk	
	Other	[a] .

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		Homeownership Status		
		Total	Rent	Own
12. What type of transportation do you typically use to go to work, school, or other places you visit most frequently?	Total	389	45	344
	Bicycle	64	4	61
		16.5%	8.1%	17.6%
	Bus	23	2	21
		5.9%	5.1%	6.0%
	Carpool/Ride with others	78	5	73
		20.1%	11.8%	21.2%
	Drive alone	354	40	314
		91.0%	88.2%	91.4%
	Ferry	113	12	101
		29.1%	27.4%	29.3%
	Walk	151	19	131
		38.7%	42.9%	38.2%
	Other	11	3	8
		2.9%	6.8%	2.4%

Comparisons of Column Proportions[a,b]

		Homeownership Status	
		Rent	Own
		(A)	(B)
12. What type of transportation do you typically use to go to work, school, or other places you visit most frequently?	Bicycle		
	Bus		
	Carpool/Ride with others		
	Drive alone		
	Ferry		
	Walk		
	Other		

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		Children in the Household		
		Total	Yes	No
12. What type of transportation do you typically use to go to work, school, or other places you visit most frequently?	Total	387	110	277
	Bicycle	64 16.6%	28 25.1%	37 13.2%
	Bus	23 5.9%	8 7.2%	15 5.4%
	Carpool/Ride with others	78 20.2%	25 22.7%	53 19.2%
	Drive alone	352 90.9%	99 89.7%	253 91.4%
	Ferry	114 29.5%	44 40.4%	70 25.1%
	Walk	151 39.0%	31 28.1%	120 43.2%
	Other	11 2.9%	3 3.1%	8 2.9%

Comparisons of Column Proportions[a,b]

		Children in the Household	
		Yes	No
		(A)	(B)
12. What type of transportation do you typically use to go to work, school, or other places you visit most frequently?	Bicycle	B	
	Bus		
	Carpool/Ride with others		
	Drive alone		
	Ferry	B	
	Walk		A
	Other		

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		Seniors in the Household		
		Total	Yes	No
12. What type of transportation do you typically use to go to work, school, or other places you visit most frequently?	Total	388	163	225
	Bicycle	64 16.6%	23 14.3%	41 18.2%
	Bus	23 5.9%	16 9.9%	7 3.0%
	Carpool/Ride with others	77 19.8%	38 23.2%	39 17.3%
	Drive alone	351 90.6%	152 93.1%	199 88.8%
	Ferry	115 29.6%	36 22.3%	78 34.9%
	Walk	152 39.2%	76 46.5%	76 34.0%
	Other	11 2.9%	5 3.3%	6 2.7%

Comparisons of Column Proportions[a,b]

		Seniors in the Household	
		Yes	No
		(A)	(B)
12. What type of transportation do you typically use to go to work, school, or other places you visit most frequently?	Bicycle		
	Bus	B	
	Carpool/Ride with others		
	Drive alone		
	Ferry		A
	Walk	B	
	Other		

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b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Employment Status			
		Total	Full-time	Self-Employed/Home-based Business	Retired
12. What type of transportation do you typically use to go to work, school, or other places you visit most frequently?	Total	386	96	140	104
	Bicycle	64 16.5%	14 15.0%	24 17.4%	9 9.1%
	Bus	22 5.8%	3 3.4%	4 2.9%	2 2.2%
	Carpool/Ride with others	75 19.4%	10 10.8%	25 17.7%	20 19.3%
	Drive alone	350 90.7%	82 86.2%	126 90.4%	99 94.9%
	Ferry	113 29.3%	33 34.4%	42 30.2%	23 22.3%
	Walk	149 38.6%	23 24.4%	48 34.5%	51 48.5%
	Other	11 3.0%	0 .0%	4 2.7%	4 3.4%

		Employment Status
		Other
12. What type of transportation do you typically use to go to work, school, or other places you visit most frequently?	Total	46
	Bicycle	15 33.6%
	Bus	13 27.7%
	Carpool/Ride with others	20 42.9%
	Drive alone	42 91.7%
	Ferry	15 31.6%
	Walk	27 57.8%
	Other	4 8.7%

Comparisons of Column Proportions[b,c]

		Employment Status			
		Full-time	Self-Employed/Home-based Business	Retired	Other
		(A)	(B)	(C)	(D)
12. What type of transportation do you typically use to go to work, school, or other places you visit most frequently?	Bicycle				C
	Bus				A B C
	Carpool/Ride with others				A B C
	Drive alone				
	Ferry				
	Walk			A	A B
	Other	a -			

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		Satisfaction with Quality of Life		
		Total	Very Satisfied	Somewhat Satisfied
12. What type of transportation do you typically use to go to work, school, or other places you visit most frequently?	Total	370	302	50
	Bicycle	60 16.2%	56 18.6%	2 4.3%
	Bus	23 6.2%	21 7.1%	0 .0%
	Carpool/Ride with others	75 20.3%	59 19.5%	13 26.1%
	Drive alone	336 90.9%	278 92.0%	42 83.9%
	Ferry	109 29.6%	95 31.4%	11 21.4%
	Walk	143 38.7%	122 40.4%	15 29.4%
	Other	9 2.5%	5 1.8%	3 6.5%

		Satisfaction with Quality of Life
		Dissatisfied
12. What type of transportation do you typically use to go to work, school, or other places you visit most frequently?	Total	18
	Bicycle	2 8.8%
	Bus	2 8.8%
	Carpool/Ride with others	3 17.6%
	Drive alone	16 91.2%
	Ferry	4 20.9%
	Walk	6 36.8%
	Other	1 3.4%

Comparisons of Column Proportions[b,c]

		Satisfaction with Quality of Life		
		Very Satisfied	Somewhat Satisfied	Dissatisfied
		(A)	(B)	(C)
12. What type of transportation do you typically use to go to work, school, or other places you visit most frequently?	Bicycle	B	[a]	
	Bus			
	Carpool/Ride with others			
	Drive alone			
	Ferry			
	Walk			
	Other			

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a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Participation in Recreation programs, classes or events		
		Total	Yes	No
12. What type of transportation do you typically use to go to work, school, or other places you visit most frequently?	Total	391	170	220
	Bicycle	64 16.4%	30 17.8%	34 15.4%
	Bus	23 5.9%	8 4.8%	15 6.7%
	Carpool/Ride with others	78 20.0%	32 19.0%	46 20.8%
	Drive alone	353 90.4%	152 89.2%	201 91.4%
	Ferry	116 29.6%	63 36.8%	53 24.1%
	Walk	151 38.8%	68 40.0%	83 37.8%
	Other	11 2.9%	7 4.3%	4 1.9%

Comparisons of Column Proportions[a,b]

		Participation in Recreation programs, classes or events	
		Yes	No
		(A)	(B)
12. What type of transportation do you typically use to go to work, school, or other places you visit most frequently?	Bicycle	B	
	Bus		
	Carpool/Ride with others		
	Drive alone		
	Ferry		
	Walk		
	Other		

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a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Perceived Size of Homes		
		Total	Right Size	Too Large
12. What type of transportation do you typically use to go to work, school, or other places you visit most frequently?	Total	374	202	172
	Bicycle	62 16.7%	28 13.7%	35 20.1%
	Bus	22 6.0%	2 1.2%	20 11.5%
	Carpool/Ride with others	75 20.0%	32 15.7%	43 24.9%
	Drive alone	338 90.3%	184 90.8%	155 89.8%
	Ferry	112 29.9%	60 29.5%	52 30.5%
	Walk	149 39.8%	63 31.1%	86 50.1%
	Other	10 2.5%	7 3.5%	2 1.4%

Comparisons of Column Proportions[a,b]

		Perceived Size of Homes	
		Right Size	Too Large
		(A)	(B)
12. What type of transportation do you typically use to go to work, school, or other places you visit most frequently?	Bicycle		
	Bus		A
	Carpool/Ride with others		A
	Drive alone		
	Ferry		
	Walk		A
	Other		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

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b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Traffic Flow Ratings			
		Total	Excellent	Good	Fair/Poor
12. What type of transportation do you typically use to go to work, school, or other places you visit most frequently?	Total	388	105	193	90
	Bicycle	63 16.2%	19 17.7%	27 13.9%	18 19.5%
	Bus	22 5.7%	4 3.7%	8 3.9%	11 12.1%
	Carpool/Ride with others	78 20.0%	19 17.9%	38 19.6%	21 23.2%
	Drive alone	352 90.5%	98 93.3%	166 86.1%	87 96.7%
	Ferry	115 29.6%	40 38.0%	60 31.1%	15 16.8%
	Walk	151 38.8%	42 40.2%	73 38.0%	35 39.0%
	Other	11 2.9%	1 .6%	10 5.0%	1 1.3%

Comparisons of Column Proportions[a,b]

		Traffic Flow Ratings		
		Excellent	Good	Fair/Poor
		(A)	(B)	(C)
12. What type of transportation do you typically use to go to work, school, or other places you visit most frequently?	Bicycle			
	Bus			B
	Carpool/Ride with others			
	Drive alone			B
	Ferry	C	C	
	Walk			
	Other			

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		Support for Development of Single Family Homes		
		Total	Strongly Support	Somewhat Support
12. What type of transportation do you typically use to go to work, school, or other places you visit most frequently?	Total	350	104	159
	Bicycle	60 17.3%	9 8.9%	33 20.7%
	Bus	22 6.4%	3 2.6%	13 7.9%
	Carpool/Ride with others	70 20.0%	13 12.6%	40 25.2%
	Drive alone	314 89.7%	96 92.1%	141 88.8%
	Ferry	106 30.4%	28 26.9%	47 29.6%
	Walk	139 39.8%	35 33.7%	66 41.8%
	Other	11	5	3

		Support for Development of Single Family Homes
		Oppose
12. What type of transportation do you typically use to go to work, school, or other places you visit most frequently?	Total	87
	Bicycle	18 21.1%
	Bus	7 8.1%
	Carpool/Ride with others	17 19.3%
	Drive alone	77 88.7%
	Ferry	31 36.1%
	Walk	38 43.5%
	Other	2 2.8%

Comparisons of Column Proportions[a,b]

		Support for Development of Single Family Homes		
		Strongly Support	Somewhat Support	Oppose
		(A)	(B)	(C)
12. What type of transportation do you typically use to go to work, school, or other places you visit most frequently?	Bicycle		A	
	Bus			
	Carpool/Ride with others		A	
	Drive alone			
	Ferry			
	Walk			
	Other			

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		Gender		
		Total	Male	Female
13. If applicable, how many miles is your one-way commute from home to work or school?	Total	362	169	193
	Less than 10 miles	79 21.7%	41 24.5%	37 19.4%
	10 to less than 20 miles	106 29.2%	61 36.4%	44 23.0%
	20 to less than 30 miles	30 8.4%	19 11.5%	11 5.7%
	30 to less than 40 miles	15 4.1%	3 2.0%	11 5.8%
	40 to less than 50 miles	5 1.5%	4 2.3%	2 .8%
	50 to less than 60 miles	20 5.6%	1 .7%	19 9.9%
	60 miles or more	2 .6%	1 .7%	1 .6%
	Not applicable	104 28.9%	37 22.0%	67 34.8%

Comparisons of Column Proportions[a,b]

		Gender	
		Male	Female
		(A)	(B)
13. If applicable, how many miles is your one-way commute from home to work or school?	Less than 10 miles		
	10 to less than 20 miles	B	
	20 to less than 30 miles	B	
	30 to less than 40 miles		
	40 to less than 50 miles		
	50 to less than 60 miles		A
	60 miles or more		
	Not applicable		A

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		Age			
		Total	18 to 44	45 to 54	55 to 64
13. If applicable, how many miles is your one-way commute from home to work or school?	Total	363	84	84	85
	Less than 10 miles	79 21.7%	17 19.9%	20 24.1%	21 24.7%
	10 to less than 20 miles	107 29.6%	33 39.4%	33 38.9%	24 28.6%
	20 to less than 30 miles	30 8.3%	7 8.8%	11 13.0%	7 7.8%
	30 to less than 40 miles	15 4.0%	6 6.6%	5 5.6%	4 5.2%
	40 to less than 50 miles	5 1.5%	0 .0%	2 1.9%	3 3.9%
	50 to less than 60 miles	20 5.6%	18 20.9%	2 1.9%	1 1.3%
	60 miles or more	2 .6%	0 .0%	0 .0%	2 2.6%
	Not applicable	104 28.7%	4 4.4%	12 14.8%	22 26.0%

		Age
		65 and over
13. If applicable, how many miles is your one-way commute from home to work or school?	Total	110
	Less than 10 miles	21 18.9%
	10 to less than 20 miles	17 15.7%
	20 to less than 30 miles	5 4.9%
	30 to less than 40 miles	0 .0%
	40 to less than 50 miles	1 .5%
	50 to less than 60 miles	0 .0%
	60 miles or more	0 .0%
	Not applicable	66 60.0%

Comparisons of Column Proportions[b,c]

		Age			
		18 to 44	45 to 54	55 to 64	65 and over
		(A)	(B)	(C)	(D)
13. If applicable, how many miles is your one-way commute from home to work or school?	Less than 10 miles				
	10 to less than 20 miles	D	D		
	20 to less than 30 miles				
	30 to less than 40 miles				a .
	40 to less than 50 miles	a .			
	50 to less than 60 miles	B C			a .
	60 miles or more	a .	a .		a .
	Not applicable			A	A B C

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		Length of Residence		
		Total	Less than 5 years	5 to 9 years
13. If applicable, how many miles is your one-way commute from home to work or school?	Total	365	46	92
	Less than 10 miles	80 21.8%	13 28.8%	23 25.3%
	10 to less than 20 miles	107 29.4%	16 35.0%	20 22.0%
	20 to less than 30 miles	30 8.3%	6 12.2%	10 11.3%
	30 to less than 40 miles	15 4.0%	3 6.5%	6 6.6%
	40 to less than 50 miles	5 1.5%	0 .0%	1 1.2%
	50 to less than 60 miles	20 5.6%	0 .0%	18 19.0%
	60 miles or more	2 .6%	0 .0%	0 .0%
	Not applicable	105 28.9%	8 17.5%	14 14.6%

		Length of Residence	
		10 to 19 years	20 years or more
13. If applicable, how many miles is your one-way commute from home to work or school?	Total	103	124
	Less than 10 miles	17 16.4%	26 21.1%
	10 to less than 20 miles	42 40.9%	29 23.4%
	20 to less than 30 miles	9 8.9%	5 4.2%
	30 to less than 40 miles	5 4.4%	1 .9%
	40 to less than 50 miles	2 2.1%	2 1.8%
	50 to less than 60 miles	3 2.6%	0 .0%
	60 miles or more	2 2.1%	0 .0%
	Not applicable	23 22.7%	61 48.7%

Comparisons of Column Proportions[b,c]

		Length of Residence		
		Less than 5 years	5 to 9 years	10 to 19 years
		(A)	(B)	(C)
13. If applicable, how many miles is your one-way commute from home to work or school?	Less than 10 miles			
	10 to less than 20 miles			B D
	20 to less than 30 miles			
	30 to less than 40 miles			
	40 to less than 50 miles	a		
	50 to less than 60 miles	.	C	
	60 miles or more	a	a	
	Not applicable	.	.	

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Comparisons of Column Proportions[b,c]

		Length of Residence
		20 years or more
		(D)
13. If applicable, how many miles is your one-way commute from home to work or school?	Less than 10 miles	
	10 to less than 20 miles	
	20 to less than 30 miles	
	30 to less than 40 miles	
	40 to less than 50 miles	
	50 to less than 60 miles	a
	60 miles or more	.
	Not applicable	a . A B C

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b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

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		Area of Residence		
		Total	Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road
13. If applicable, how many miles is your one-way commute from home to work or school?	Total	362	208	128
	Less than 10 miles	80 22.0%	35 16.8%	31 24.5%
	10 to less than 20 miles	107 29.7%	64 30.7%	39 30.7%
	20 to less than 30 miles	30 8.4%	25 12.2%	3 2.6%
	30 to less than 40 miles	15 4.1%	6 2.7%	9 7.0%
	40 to less than 50 miles	5 1.5%	3 1.3%	2 1.7%
	50 to less than 60 miles	19 5.3%	18 8.5%	2 1.2%
	60 miles or more	2 .6%	2 1.1%	0 .0%
	Not applicable	103 28.5%	55 26.7%	41 32.2%

		Area of Residence	
		Corinthian Island	West Shore Road
13. If applicable, how many miles is your one-way commute from home to work or school?	Total	7	19
	Less than 10 miles	3 47.7%	10 52.5%
	10 to less than 20 miles	1 8.7%	3 17.9%
	20 to less than 30 miles	0 .0%	2 8.2%
	30 to less than 40 miles	0 .0%	0 .0%
	40 to less than 50 miles	1 8.7%	0 .0%
	50 to less than 60 miles	0 .0%	0 .0%
	60 miles or more	0 .0%	0 .0%
	Not applicable	2 34.8%	4 21.4%

Comparisons of Column Proportions[b,c]

		Area of Residence		
		Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road	Corinthian Island
		(A)	(B)	(C)
13. If applicable, how many miles is your one-way commute from home to work or school?	Less than 10 miles			
	10 to less than 20 miles			
	20 to less than 30 miles	B		a .
	30 to less than 40 miles			a .
	40 to less than 50 miles			
	50 to less than 60 miles	B		a .
	60 miles or more		a .	a .
	Not applicable			

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Comparisons of Column Proportions[b,c]

		Area of Residence
		West Shore Road
		(D)
13. If applicable, how many miles is your one-way commute from home to work or school?	Less than 10 miles	A
	10 to less than 20 miles	
	20 to less than 30 miles	
	30 to less than 40 miles	a .
	40 to less than 50 miles	a .
	50 to less than 60 miles	a .
	60 miles or more	a .
	Not applicable	

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		Homeownership Status		
		Total	Rent	Own
13. If applicable, how many miles is your one-way commute from home to work or school?	Total	364	43	321
	Less than 10 miles	80 21.9%	8 17.8%	72 22.4%
	10 to less than 20 miles	106 29.0%	7 16.2%	99 30.8%
	20 to less than 30 miles	30 8.3%	4 9.3%	26 8.2%
	30 to less than 40 miles	15 4.0%	5 10.4%	10 3.2%
	40 to less than 50 miles	5 1.5%	1 2.5%	4 1.4%
	50 to less than 60 miles	20 5.6%	2 3.6%	19 5.8%
	60 miles or more	2 .6%	0 .0%	2 .7%
	Not applicable	106 29.1%	17 40.2%	89 27.6%

Comparisons of Column Proportions[b,c]

		Homeownership Status	
		Rent	Own
		(A)	(B)
13. If applicable, how many miles is your one-way commute from home to work or school?	Less than 10 miles		
	10 to less than 20 miles		A
	20 to less than 30 miles		
	30 to less than 40 miles	B	
	40 to less than 50 miles		
	50 to less than 60 miles		
	60 miles or more	a .	
	Not applicable		

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c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Children in the Household		
		Total	Yes	No
13. If applicable, how many miles is your one-way commute from home to work or school?	Total	364	108	256
	Less than 10 miles	79 21.7%	32 29.2%	48 18.5%
	10 to less than 20 miles	106 29.2%	49 45.7%	57 22.2%
	20 to less than 30 miles	30 8.3%	17 15.7%	13 5.2%
	30 to less than 40 miles	15 4.0%	5 4.5%	10 3.8%
	40 to less than 50 miles	5 1.5%	2 1.4%	4 1.5%
	50 to less than 60 miles	20 5.6%	0 .0%	20 7.9%
	60 miles or more	2 .6%	0 .0%	2 .9%
	Not applicable	106 29.1%	4 3.5%	102 39.9%

Comparisons of Column Proportions[b,c]

		Children in the Household	
		Yes	No
		(A)	(B)
13. If applicable, how many miles is your one-way commute from home to work or school?	Less than 10 miles	B	
	10 to less than 20 miles	B	
	20 to less than 30 miles	B	
	30 to less than 40 miles		
	40 to less than 50 miles		
	50 to less than 60 miles	a .	
	60 miles or more	a .	
	Not applicable		A

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		Seniors in the Household		
		Total	Yes	No
13. If applicable, how many miles is your one-way commute from home to work or school?	Total	365	145	220
	Less than 10 miles	80 21.8%	26 17.9%	54 24.5%
	10 to less than 20 miles	107 29.4%	36 25.1%	71 32.3%
	20 to less than 30 miles	29 8.0%	9 6.5%	20 9.0%
	30 to less than 40 miles	15 4.0%	3 1.8%	12 5.5%
	40 to less than 50 miles	5 1.5%	1 .4%	5 2.2%
	50 to less than 60 miles	20 5.6%	0 .0%	20 9.2%
	60 miles or more	2 .6%	0 .0%	2 1.0%
	Not applicable	106 29.1%	70 48.3%	36 16.4%

Comparisons of Column Proportions[b,c]

		Seniors in the Household	
		Yes	No
		(A)	(B)
13. If applicable, how many miles is your one-way commute from home to work or school?	Less than 10 miles		
	10 to less than 20 miles		
	20 to less than 30 miles		
	30 to less than 40 miles		
	40 to less than 50 miles		
	50 to less than 60 miles		
	60 miles or more	[a]	
	Not applicable	B	

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		Employment Status			
		Total	Full-time	Self-Employed/Home-based Business	Retired
13. If applicable, how many miles is your one-way commute from home to work or school?	Total	361	94	139	87
	Less than 10 miles	80 22.0%	16 16.8%	51 36.3%	4 4.7%
	10 to less than 20 miles	107 29.7%	34 35.8%	50 36.2%	6 6.7%
	20 to less than 30 miles	29 8.1%	11 11.6%	11 8.0%	2 2.6%
	30 to less than 40 miles	15 4.1%	9 9.6%	6 4.0%	0 .0%
	40 to less than 50 miles	5 1.5%	2 1.7%	3 2.0%	0 .0%
	50 to less than 60 miles	20 5.6%	19 19.9%	2 1.1%	0 .0%
	60 miles or more	2 .6%	2 2.3%	0 .0%	0 .0%
	Not applicable	103 28.4%	2 2.3%	17 12.4%	75 86.0%

		Employment Status
		Other
13. If applicable, how many miles is your one-way commute from home to work or school?	Total	41
	Less than 10 miles	9 22.5%
	10 to less than 20 miles	17 42.8%
	20 to less than 30 miles	5 12.0%
	30 to less than 40 miles	0 .0%
	40 to less than 50 miles	1 2.7%
	50 to less than 60 miles	0 .0%
	60 miles or more	0 .0%
	Not applicable	8 20.0%

Comparisons of Column Proportions[b,c]

		Employment Status			
		Full-time	Self-Employed/Home-based Business	Retired	Other
		(A)	(B)	(C)	(D)
13. If applicable, how many miles is your one-way commute from home to work or school?	Less than 10 miles		A C		C
	10 to less than 20 miles	C	C		C
	20 to less than 30 miles				
	30 to less than 40 miles			a	a
	40 to less than 50 miles			a	
	50 to less than 60 miles	B		a	a
	60 miles or more		a	a	a
	Not applicable		A	A B D	A

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		Satisfaction with Quality of Life		
		Total	Very Satisfied	Somewhat Satisfied
13. If applicable, how many miles is your one-way commute from home to work or school?	Total	347	281	49
	Less than 10 miles	73 21.2%	63 22.5%	8 16.6%
	10 to less than 20 miles	102 29.4%	80 28.3%	16 32.9%
	20 to less than 30 miles	30 8.7%	23 8.1%	5 9.4%
	30 to less than 40 miles	15 4.2%	11 3.9%	4 7.6%
	40 to less than 50 miles	5 1.6%	5 1.9%	0 .0%
	50 to less than 60 miles	18 5.1%	18 6.3%	0 .0%
	60 miles or more	1 .3%	1 .4%	0 .0%
	Not applicable	102 29.5%	81 28.7%	16 33.4%

		Satisfaction with Quality of Life
		Dissatisfied
13. If applicable, how many miles is your one-way commute from home to work or school?	Total	17
	Less than 10 miles	2 12.6%
	10 to less than 20 miles	6 38.0%
	20 to less than 30 miles	3 17.3%
	30 to less than 40 miles	0 .0%
	40 to less than 50 miles	0 .0%
	50 to less than 60 miles	0 .0%
	60 miles or more	0 .0%
	Not applicable	5 32.1%

Comparisons of Column Proportions[b,c]

		Satisfaction with Quality of Life		
		Very Satisfied	Somewhat Satisfied	Dissatisfied
		(A)	(B)	(C)
13. If applicable, how many miles is your one-way commute from home to work or school?	Less than 10 miles			
	10 to less than 20 miles			
	20 to less than 30 miles			
	30 to less than 40 miles			a
	40 to less than 50 miles		a	a
	50 to less than 60 miles		a	a
	60 miles or more		a	a
	Not applicable			

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		Participation in Recreation programs, classes or events		
		Total	Yes	No
13. If applicable, how many miles is your one-way commute from home to work or school?	Total	366	157	209
	Less than 10 miles	81 22.0%	44 28.1%	36 17.4%
	10 to less than 20 miles	107 29.3%	55 35.1%	52 24.9%
	20 to less than 30 miles	30 8.3%	10 6.4%	20 9.7%
	30 to less than 40 miles	15 4.0%	6 3.6%	9 4.3%
	40 to less than 50 miles	5 1.5%	0 .0%	5 2.6%
	50 to less than 60 miles	20 5.5%	0 .0%	20 9.7%
	60 miles or more	2 .6%	0 .0%	2 1.1%
	Not applicable	105 28.8%	42 26.7%	63 30.3%

Comparisons of Column Proportions[b,c]

		Participation in Recreation programs, classes or events	
		Yes	No
		(A)	(B)
13. If applicable, how many miles is your one-way commute from home to work or school?	Less than 10 miles	B	
	10 to less than 20 miles	B	
	20 to less than 30 miles		
	30 to less than 40 miles		
	40 to less than 50 miles	a	
	50 to less than 60 miles	a	
	60 miles or more	a	
	Not applicable		

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b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Perceived Size of Homes		
		Total	Right Size	Too Large
13. If applicable, how many miles is your one-way commute from home to work or school?	Total	353	194	159
	Less than 10 miles	78 22.2%	48 24.8%	30 19.0%
	10 to less than 20 miles	103 29.3%	53 27.3%	51 31.8%
	20 to less than 30 miles	28 7.9%	18 9.1%	10 6.4%
	30 to less than 40 miles	13 3.7%	9 4.5%	4 2.8%
	40 to less than 50 miles	5 1.5%	4 1.9%	2 1.1%
	50 to less than 60 miles	20 5.7%	20 10.5%	0 .0%
	60 miles or more	2 .6%	0 .0%	2 1.4%
	Not applicable	102 29.0%	43 22.0%	60 37.6%

Comparisons of Column Proportions[b,c]

		Perceived Size of Homes	
		Right Size	Too Large
		(A)	(B)
13. If applicable, how many miles is your one-way commute from home to work or school?	Less than 10 miles		
	10 to less than 20 miles		
	20 to less than 30 miles		
	30 to less than 40 miles		
	40 to less than 50 miles		
	50 to less than 60 miles		a
	60 miles or more	a	
	Not applicable		A

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Traffic Flow Ratings			
		Total	Excellent	Good	Fair/Poor
13. If applicable, how many miles is your one-way commute from home to work or school?	Total	364	101	177	86
	Less than 10 miles	81 22.1%	28 28.1%	39 22.0%	13 15.4%
	10 to less than 20 miles	106 29.1%	33 33.1%	48 27.3%	24 27.8%
	20 to less than 30 miles	30 8.3%	12 11.7%	11 6.1%	8 8.8%
	30 to less than 40 miles	15 4.0%	6 5.6%	6 3.4%	3 3.4%
	40 to less than 50 miles	5 1.5%	0 .0%	4 2.5%	1 1.3%
	50 to less than 60 miles	20 5.6%	2 1.5%	0 .0%	19 21.8%
	60 miles or more	2 .6%	0 .0%	2 1.2%	0 .0%
	Not applicable	105 28.8%	20 20.0%	66 37.4%	18 21.4%

Comparisons of Column Proportions[b,c]

		Traffic Flow Ratings		
		Excellent	Good	Fair/Poor
		(A)	(B)	(C)
13. If applicable, how many miles is your one-way commute from home to work or school?	Less than 10 miles			
	10 to less than 20 miles			
	20 to less than 30 miles			
	30 to less than 40 miles			
	40 to less than 50 miles	a.		
	50 to less than 60 miles		a.	A
	60 miles or more	a.		a.
	Not applicable		A C	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

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c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Support for Development of Single Family Homes		
		Total	Strongly Support	Somewhat Support
13. If applicable, how many miles is your one-way commute from home to work or school?	Total	331	93	154
	Less than 10 miles	67 20.4%	21 22.9%	34 22.0%
	10 to less than 20 miles	102 30.8%	24 26.0%	44 28.9%
	20 to less than 30 miles	28 8.5%	5 5.3%	10 6.2%
	30 to less than 40 miles	15 4.4%	7 7.0%	4 2.4%
	40 to less than 50 miles	5 1.6%	4 4.1%	1 .7%
	50 to less than 60 miles	19 5.7%	0 .0%	19 12.2%
	60 miles or more	2 .7%	0 .0%	1 .7%
	Not applicable	93	32	41

		Support for Development of Single Family Homes
		Oppose
13. If applicable, how many miles is your one-way commute from home to work or school?	Total	84
	Less than 10 miles	12 14.6%
	10 to less than 20 miles	33 39.4%
	20 to less than 30 miles	13 16.0%
	30 to less than 40 miles	4 5.2%
	40 to less than 50 miles	1 .7%
	50 to less than 60 miles	0 .0%
	60 miles or more	1 1.3%
	Not applicable	19 22.8%

Comparisons of Column Proportions[b,c]

		Support for Development of Single Family Homes		
		Strongly Support	Somewhat Support	Oppose
		(A)	(B)	(C)
13. If applicable, how many miles is your one-way commute from home to work or school?	Less than 10 miles			
	10 to less than 20 miles			
	20 to less than 30 miles			B
	30 to less than 40 miles			
	40 to less than 50 miles			
	50 to less than 60 miles	a .		a .
	60 miles or more	a .		
	Not applicable			

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

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c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Gender		
		Total	Male	Female
14. If applicable, how many minutes does your one-way commute from home to work or school take?	Total	357	166	191
	Less than 15 minutes	61 17.2%	31 18.8%	30 15.7%
	15 to less than 30 minutes	62 17.3%	38 22.8%	24 12.4%
	30 to less than 45 minutes	82 22.9%	46 27.5%	36 19.0%
	45 to less than 60 minutes	45 12.6%	14 8.4%	31 16.4%
	60 to less than 90 minutes	7 1.8%	3 1.7%	4 2.0%
	Not applicable	101 28.2%	35 20.9%	66 34.5%

Comparisons of Column Proportions[a,b]

		Gender	
		Male	Female
		(A)	(B)
14. If applicable, how many minutes does your one-way commute from home to work or school take?	Less than 15 minutes		
	15 to less than 30 minutes	B	
	30 to less than 45 minutes		
	45 to less than 60 minutes		A
	60 to less than 90 minutes		
	Not applicable		A

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Age			
		Total	18 to 44	45 to 54	55 to 64
14. If applicable, how many minutes does your one-way commute from home to work or school take?	Total	358	84	86	85
	Less than 15 minutes	61 17.1%	15 17.7%	16 18.2%	15 18.2%
	15 to less than 30 minutes	62 17.2%	11 13.2%	19 21.8%	18 20.8%
	30 to less than 45 minutes	83 23.3%	33 39.4%	26 30.9%	15 18.2%
	45 to less than 60 minutes	45 12.6%	21 25.3%	11 12.7%	9 10.4%
	60 to less than 90 minutes	7 1.8%	0 .0%	2 1.8%	4 5.2%
	Not applicable	100 28.0%	4 4.4%	12 14.5%	23 27.3%

		Age
		65 and over
14. If applicable, how many minutes does your one-way commute from home to work or school take?	Total	104
	Less than 15 minutes	15 14.9%
	15 to less than 30 minutes	14 13.7%
	30 to less than 45 minutes	8 8.0%
	45 to less than 60 minutes	4 4.0%
	60 to less than 90 minutes	1 .6%
	Not applicable	61 58.9%

Comparisons of Column Proportions[b,c]

		Age			
		18 to 44	45 to 54	55 to 64	65 and over
		(A)	(B)	(C)	(D)
14. If applicable, how many minutes does your one-way commute from home to work or school take?	Less than 15 minutes				
	15 to less than 30 minutes				
	30 to less than 45 minutes	C D	D		
	45 to less than 60 minutes	D			
	60 to less than 90 minutes	[a]			
	Not applicable			A	A B C

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a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

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		Length of Residence		
		Total	Less than 5 years	5 to 9 years
14. If applicable, how many minutes does your one-way commute from home to work or school take?	Total	361	46	94
	Less than 15 minutes	62 17.3%	11 23.0%	16 17.2%
	15 to less than 30 minutes	62 17.1%	10 21.4%	17 18.3%
	30 to less than 45 minutes	83 23.1%	13 28.1%	23 24.3%
	45 to less than 60 minutes	45 12.5%	5 9.9%	24 25.2%
	60 to less than 90 minutes	7 1.8%	0 .0%	0 .0%
	Not applicable	102 28.2%	8 17.5%	14 15.0%

		Length of Residence	
		10 to 19 years	20 years or more
14. If applicable, how many minutes does your one-way commute from home to work or school take?	Total	101	120
	Less than 15 minutes	15 14.9%	20 17.1%
	15 to less than 30 minutes	19 18.3%	16 13.4%
	30 to less than 45 minutes	32 31.7%	16 13.0%
	45 to less than 60 minutes	7 6.9%	10 8.4%
	60 to less than 90 minutes	7 6.5%	0 .0%
	Not applicable	22 21.8%	58 48.1%

Comparisons of Column Proportions[b,c]

		Length of Residence		
		Less than 5 years	5 to 9 years	10 to 19 years
		(A)	(B)	(C)
14. If applicable, how many minutes does your one-way commute from home to work or school take?	Less than 15 minutes			
	15 to less than 30 minutes			
	30 to less than 45 minutes			D
	45 to less than 60 minutes		C D	
	60 to less than 90 minutes	a .	a .	
	Not applicable			

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Comparisons of Column Proportions[b,c]

		Length of Residence
		20 years or more
		(D)
14. If applicable, how many minutes does your one-way commute from home to work or school take?	Less than 15 minutes	
	15 to less than 30 minutes	
	30 to less than 45 minutes	
	45 to less than 60 minutes	
	60 to less than 90 minutes	a .
	Not applicable	A B C

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

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c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Area of Residence		
		Total	Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road
14. If applicable, how many minutes does your one-way commute from home to work or school take?	Total	357	205	127
	Less than 15 minutes	62 17.4%	28 13.7%	24 19.0%
	15 to less than 30 minutes	62 17.3%	26 12.9%	30 23.4%
	30 to less than 45 minutes	83 23.3%	59 28.8%	23 18.0%
	45 to less than 60 minutes	45 12.6%	36 17.3%	8 6.4%
	60 to less than 90 minutes	5 1.5%	3 1.6%	2 1.2%
	Not applicable	100 27.8%	52 25.6%	41 32.0%

		Area of Residence	
		Corinthian Island	West Shore Road
14. If applicable, how many minutes does your one-way commute from home to work or school take?	Total	7	19
	Less than 15 minutes	2 31.6%	8 41.2%
	15 to less than 30 minutes	2 24.9%	4 21.1%
	30 to less than 45 minutes	0 .0%	2 8.2%
	45 to less than 60 minutes	0 .0%	2 8.2%
	60 to less than 90 minutes	1 8.7%	0 .0%
	Not applicable	2 34.8%	4 21.4%

Comparisons of Column Proportions[b,c]

		Area of Residence	
		Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road
		(A)	(B)
14. If applicable, how many minutes does your one-way commute from home to work or school take?	Less than 15 minutes 15 to less than 30 minutes 30 to less than 45 minutes 45 to less than 60 minutes 60 to less than 90 minutes Not applicable	B	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

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Comparisons of Column Proportions[b,c]

		Area of Residence	
		Corinthian Island	West Shore Road
		(C)	(D)
14. If applicable, how many minutes does your one-way commute from home to work or school take?	Less than 15 minutes 15 to less than 30 minutes 30 to less than 45 minutes 45 to less than 60 minutes 60 to less than 90 minutes Not applicable	a . a .	A a .

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

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		Homeownership Status		
		Total	Rent	Own
14. If applicable, how many minutes does your one-way commute from home to work or school take?	Total	360	42	318
	Less than 15 minutes	62 17.3%	5 11.4%	57 18.1%
	15 to less than 30 minutes	62 17.1%	6 15.3%	55 17.4%
	30 to less than 45 minutes	82 22.7%	5 12.3%	77 24.1%
	45 to less than 60 minutes	45 12.6%	6 13.3%	40 12.5%
	60 to less than 90 minutes	7 1.8%	2 3.7%	5 1.6%
	Not applicable	102 28.4%	19 43.9%	84 26.4%

Comparisons of Column Proportions[a,b]

		Homeownership Status	
		Rent	Own
		(A)	(B)
14. If applicable, how many minutes does your one-way commute from home to work or school take?	Less than 15 minutes 15 to less than 30 minutes 30 to less than 45 minutes 45 to less than 60 minutes 60 to less than 90 minutes Not applicable	B	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Children in the Household		
		Total	Yes	No
14. If applicable, how many minutes does your one-way commute from home to work or school take?	Total	360	109	250
	Less than 15 minutes	62 17.3%	26 23.5%	37 14.6%
	15 to less than 30 minutes	61 16.8%	30 27.7%	30 12.1%
	30 to less than 45 minutes	83 23.2%	43 39.8%	40 15.9%
	45 to less than 60 minutes	45 12.6%	6 5.6%	39 15.6%
	60 to less than 90 minutes	7 1.8%	0 .0%	7 2.6%
	Not applicable	102 28.3%	4 3.4%	98 39.1%

Comparisons of Column Proportions[b,c]

		Children in the Household	
		Yes	No
		(A)	(B)
14. If applicable, how many minutes does your one-way commute from home to work or school take?	Less than 15 minutes	B	
	15 to less than 30 minutes	B	
	30 to less than 45 minutes	B	
	45 to less than 60 minutes		A
	60 to less than 90 minutes	[a] .	
	Not applicable		A

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a. This category is not used in comparisons because its column proportion is equal to zero or one.

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c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Seniors in the Household		
		Total	Yes	No
14. If applicable, how many minutes does your one-way commute from home to work or school take?	Total	359	139	220
	Less than 15 minutes	62 17.4%	19 14.0%	43 19.4%
	15 to less than 30 minutes	60 16.8%	19 13.7%	41 18.7%
	30 to less than 45 minutes	82 22.9%	27 19.5%	55 25.1%
	45 to less than 60 minutes	45 12.6%	6 4.6%	39 17.6%
	60 to less than 90 minutes	7 1.8%	2 1.2%	5 2.2%
	Not applicable	102 28.5%	65 47.0%	37 16.9%

Comparisons of Column Proportions[a,b]

		Seniors in the Household	
		Yes	No
		(A)	(B)
14. If applicable, how many minutes does your one-way commute from home to work or school take?	Less than 15 minutes		
	15 to less than 30 minutes		
	30 to less than 45 minutes		
	45 to less than 60 minutes		A
	60 to less than 90 minutes		
	Not applicable	B	

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a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Employment Status			
		Total	Full-time	Self-Employed/Home-based Business	Retired
14. If applicable, how many minutes does your one-way commute from home to work or school take?	Total	358	96	139	84
	Less than 15 minutes	62 17.4%	9 9.0%	44 31.7%	3 3.5%
	15 to less than 30 minutes	62 17.2%	17 17.9%	34 24.8%	4 4.9%
	30 to less than 45 minutes	82 23.0%	33 34.3%	32 23.2%	3 4.0%
	45 to less than 60 minutes	45 12.6%	31 32.0%	8 5.9%	2 2.1%
	60 to less than 90 minutes	7 1.8%	4 4.6%	2 1.5%	0 .0%
	Not applicable	100 27.9%	2 2.3%	18 12.8%	72 85.4%

		Employment Status
		Other
14. If applicable, how many minutes does your one-way commute from home to work or school take?	Total	40
	Less than 15 minutes	7 17.2%
	15 to less than 30 minutes	6 15.3%
	30 to less than 45 minutes	14 35.2%
	45 to less than 60 minutes	5 11.7%
	60 to less than 90 minutes	0 .0%
	Not applicable	8 20.6%

Comparisons of Column Proportions[b,c]

		Employment Status			
		Full-time	Self-Employed/Home-based Business	Retired	Other
		(A)	(B)	(C)	(D)
14. If applicable, how many minutes does your one-way commute from home to work or school take?	Less than 15 minutes		A C		
	15 to less than 30 minutes	C	C		
	30 to less than 45 minutes	C	C		C
	45 to less than 60 minutes	B C			
	60 to less than 90 minutes			a.	a.
	Not applicable		A	A B D	A

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a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Satisfaction with Quality of Life		
		Total	Very Satisfied	Somewhat Satisfied
14. If applicable, how many minutes does your one-way commute from home to work or school take?	Total	343	278	48
	Less than 15 minutes	58 17.0%	50 17.9%	7 13.6%
	15 to less than 30 minutes	58 17.0%	43 15.7%	11 22.9%
	30 to less than 45 minutes	80 23.5%	65 23.4%	10 20.6%
	45 to less than 60 minutes	45 13.2%	40 14.5%	5 10.3%
	60 to less than 90 minutes	3 .8%	3 1.0%	0 .0%
	Not applicable	98 28.5%	76 27.6%	16 32.6%

		Satisfaction with Quality of Life
		Dissatisfied
14. If applicable, how many minutes does your one-way commute from home to work or school take?	Total	17
	Less than 15 minutes	2 12.6%
	15 to less than 30 minutes	4 22.5%
	30 to less than 45 minutes	6 32.9%
	45 to less than 60 minutes	0 .0%
	60 to less than 90 minutes	0 .0%
	Not applicable	5 32.1%

Comparisons of Column Proportions[b,c]

		Satisfaction with Quality of Life		
		Very Satisfied	Somewhat Satisfied	Dissatisfied
		(A)	(B)	(C)
14. If applicable, how many minutes does your one-way commute from home to work or school take?	Less than 15 minutes			
	15 to less than 30 minutes			
	30 to less than 45 minutes			
	45 to less than 60 minutes		a .	a .
	60 to less than 90 minutes			
	Not applicable			

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Participation in Recreation programs, classes or events	
		Total	Yes
14. If applicable, how many minutes does your one-way commute from home to work or school take?	Total	362	155
	Less than 15 minutes	62 17.2%	36 23.5%
	15 to less than 30 minutes	63 17.3%	33 21.3%
	30 to less than 45 minutes	83 23.1%	36 23.5%
	45 to less than 60 minutes	45 12.5%	11 7.2%
	60 to less than 90 minutes	7 1.8%	0 .0%
	Not applicable	102 28.1%	38 24.5%

		Participation in Recreation programs, classes or events
		No
14. If applicable, how many minutes does your one-way commute from home to work or school take?	Total	207
	Less than 15 minutes	26 12.5%
	15 to less than 30 minutes	30 14.4%
	30 to less than 45 minutes	47 22.7%
	45 to less than 60 minutes	34 16.4%
	60 to less than 90 minutes	7 3.2%
	Not applicable	64 30.8%

Comparisons of Column Proportions[b,c]

		Participation in Recreation programs, classes or events	
		Yes	No
		(A)	(B)
14. If applicable, how many minutes does your one-way commute from home to work or school take?	Less than 15 minutes	B	
	15 to less than 30 minutes		
	30 to less than 45 minutes		
	45 to less than 60 minutes		A
	60 to less than 90 minutes	[a] .	
	Not applicable		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Perceived Size of Homes		
		Total	Right Size	Too Large
14. If applicable, how many minutes does your one-way commute from home to work or school take?	Total	348	193	154
	Less than 15 minutes	62 17.7%	41 21.1%	21 13.5%
	15 to less than 30 minutes	60 17.2%	32 16.6%	28 18.0%
	30 to less than 45 minutes	78 22.5%	45 23.0%	34 21.9%
	45 to less than 60 minutes	43 12.5%	31 16.2%	12 7.7%
	60 to less than 90 minutes	7 1.9%	3 1.4%	4 2.5%
	Not applicable	98 28.2%	42 21.7%	56 36.4%

Comparisons of Column Proportions[a,b]

		Perceived Size of Homes	
		Right Size	Too Large
		(A)	(B)
14. If applicable, how many minutes does your one-way commute from home to work or school take?	Less than 15 minutes		
	15 to less than 30 minutes		
	30 to less than 45 minutes		
	45 to less than 60 minutes	B	
	60 to less than 90 minutes		
	Not applicable		A

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Traffic Flow Ratings			
		Total	Excellent	Good	Fair/Poor
14. If applicable, how many minutes does your one-way commute from home to work or school take?	Total	360	101	175	84
	Less than 15 minutes	62 17.3%	28 27.7%	26 14.8%	8 10.1%
	15 to less than 30 minutes	61 17.0%	19 18.4%	38 21.5%	5 5.8%
	30 to less than 45 minutes	83 23.1%	30 30.0%	25 14.5%	28 32.9%
	45 to less than 60 minutes	45 12.5%	4 4.3%	17 9.8%	24 28.1%
	60 to less than 90 minutes	7 1.8%	2 1.5%	4 2.2%	1 1.3%
	Not applicable	102 28.2%	18 18.1%	65 37.2%	18 21.8%

Comparisons of Column Proportions[a,b]

		Traffic Flow Ratings		
		Excellent	Good	Fair/Poor
		(A)	(B)	(C)
14. If applicable, how many minutes does your one-way commute from home to work or school take?	Less than 15 minutes	B C		
	15 to less than 30 minutes	C	C	
	30 to less than 45 minutes	B		B
	45 to less than 60 minutes			A B
	60 to less than 90 minutes			
	Not applicable		A C	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Support for Development of Single Family Homes		
		Total	Strongly Support	Somewhat Support
14. If applicable, how many minutes does your one-way commute from home to work or school take?	Total	325	91	152
	Less than 15 minutes	54 16.6%	19 20.9%	26 17.0%
	15 to less than 30 minutes	57 17.6%	10 11.3%	25 16.2%
	30 to less than 45 minutes	77 23.7%	20 22.0%	35 22.7%
	45 to less than 60 minutes	44 13.5%	11 11.8%	24 16.0%
	60 to less than 90 minutes	5 1.5%	0 .0%	3 2.2%
	Not applicable	88	31	40

		Support for Development of Single Family Homes
		Oppose
14. If applicable, how many minutes does your one-way commute from home to work or school take?	Total	82
	Less than 15 minutes	9 11.3%
	15 to less than 30 minutes	22 27.1%
	30 to less than 45 minutes	23 27.5%
	45 to less than 60 minutes	9 10.9%
	60 to less than 90 minutes	2 2.1%
	Not applicable	17 21.1%

Comparisons of Column Proportions[b,c]

		Support for Development of Single Family Homes	
		Strongly Support	Somewhat Support
		(A)	(B)
14. If applicable, how many minutes does your one-way commute from home to work or school take?	Less than 15 minutes		
	15 to less than 30 minutes		
	30 to less than 45 minutes		
	45 to less than 60 minutes		
	60 to less than 90 minutes	[a]	
	Not applicable		

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a. This category is not used in comparisons because its column proportion is equal to zero or one.

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c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

Comparisons of Column Proportions[b,c]

		Support for Development of Single Family Homes
		Oppose
		(C)
14. If applicable, how many minutes does your one-way commute from home to work or school take?	Less than 15 minutes	
	15 to less than 30 minutes	A
	30 to less than 45 minutes	
	45 to less than 60 minutes	
	60 to less than 90 minutes	
	Not applicable	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Gender		
		Total	Male	Female
15. If applicable, in which county is your work or school located?	Total	356	165	191
	Alameda County	11 2.9%	8 5.0%	2 1.2%
	Contra Costa County	2 .5%	1 .7%	1 .3%
	Marin County	113 31.9%	53 31.9%	61 31.8%
	Napa County	3 .8%	3 1.7%	0 .0%
	San Francisco	116 32.4%	69 41.6%	47 24.6%
	San Mateo County	4 1.0%	0 .0%	4 1.9%
	Solano County	19 5.3%	0 .0%	19 9.8%
	Sonoma County	2 .4%	2 .9%	0 .0%
	Other	1 .3%	1 .7%	0 .0%
	Not Applicable	87 24.5%	29 17.5%	58 30.4%

Comparisons of Column Proportions[b,c]

		Gender	
		Male	Female
		(A)	(B)
15. If applicable, in which county is your work or school located?	Alameda County	B	
	Contra Costa County		
	Marin County		
	Napa County		a.
	San Francisco	B	
	San Mateo County	a.	
	Solano County	a.	
	Sonoma County		a.
	Other		a.
	Not Applicable		A

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		Age				
		Total	18 to 44	45 to 54	55 to 64	65 and over
15. If applicable, in which county is your work or school located?	Total	357	84	84	85	104
	Alameda County	11 2.9%	2 2.2%	5 5.6%	2 2.6%	2 1.7%
	Contra Costa County	2 .5%	0 .0%	0 .0%	1 1.3%	1 .6%
	Marin County	113 31.7%	30 35.0%	28 33.3%	28 32.5%	28 27.3%
	Napa County	3 .8%	0 .0%	0 .0%	2 2.6%	1 .6%
	San Francisco	117 32.8%	35 41.9%	37 44.4%	31 36.4%	14 13.1%
	San Mateo County	4 1.0%	0 .0%	3 3.7%	0 .0%	1 .6%
	Solano County	19 5.2%	18 20.9%	0 .0%	1 1.3%	0 .0%
	Sonoma County	2 .4%	0 .0%	2 1.9%	0 .0%	0 .0%
	Other	1 .3%	0 .0%	0 .0%	1 1.3%	0 .0%
	Not Applicable	87 24.3%	0 .0%	9 11.1%	19 22.1%	59 56.2%

Comparisons of Column Proportions[b,c]

		Age			
		18 to 44	45 to 54	55 to 64	65 and over
		(A)	(B)	(C)	(D)
15. If applicable, in which county is your work or school located?	Alameda County	a .	a .		
	Contra Costa County				
	Marin County				
	Napa County	a .	a .		
	San Francisco	D	D	D	
	San Mateo County	a .		a .	
	Solano County	C	a .		a .
	Sonoma County	a .		a .	a .
	Other	a .	a .		a .
	Not Applicable	a .			B C

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		Length of Residence		
		Total	Less than 5 years	5 to 9 years
15. If applicable, in which county is your work or school located?	Total	360	46	93
	Alameda County	11 2.9%	3 6.8%	5 4.9%
	Contra Costa County	2 .5%	0 .0%	0 .0%
	Marin County	114 31.8%	21 45.7%	20 21.2%
	Napa County	3 .8%	0 .0%	0 .0%
	San Francisco	117 32.5%	19 41.1%	36 38.4%
	San Mateo County	4 1.0%	0 .0%	2 1.7%
	Solano County	19 5.2%	0 .0%	18 19.0%
	Sonoma County	2 .4%	0 .0%	2 1.7%
	Other	1 .3%	0 .0%	0 .0%
	Not Applicable	89 24.6%	3 6.3%	12 13.2%

		Length of Residence	
		10 to 19 years	20 years or more
15. If applicable, in which county is your work or school located?	Total	100	121
	Alameda County	2 2.3%	1 .5%
	Contra Costa County	2 1.7%	0 .0%
	Marin County	41 40.6%	33 27.3%
	Napa County	1 1.1%	2 1.4%
	San Francisco	35 35.3%	27 22.4%
	San Mateo County	2 1.5%	1 .5%
	Solano County	1 1.1%	0 .0%
	Sonoma County	0 .0%	0 .0%
	Other	1 1.1%	0 .0%
	Not Applicable	15 15.3%	58 47.9%

Comparisons of Column Proportions[b,c]

		Length of Residence		
		Less than 5 years	5 to 9 years	10 to 19 years
		(A)	(B)	(C)
15. If applicable, in which county is your work or school located?	Alameda County	a .	a .	
	Contra Costa County			
	Marin County	B		B
	Napa County	a .	a .	
	San Francisco			
	San Mateo County	a .		
	Solano County	a .	C	
	Sonoma County	a .		a .
	Other	a .	a .	
	Not Applicable			

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Comparisons of Column Proportions[b,c]

		Length of Residence
		20 years or more
		(D)
15. If applicable, in which county is your work or school located?	Alameda County	a
	Contra Costa County	.
	Marin County	
	Napa County	
	San Francisco	
	San Mateo County	
	Solano County	a
	Sonoma County	.
	Other	a
	Not Applicable	.
		A B C

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a. This category is not used in comparisons because its column proportion is equal to zero or one.

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c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Area of Residence		
		Total	Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road
15. If applicable, in which county is your work or school located?	Total	357	204	126
	Alameda County	11 2.9%	7 3.6%	3 2.1%
	Contra Costa County	2 .5%	2 .8%	0 .0%
	Marin County	114 32.1%	63 30.8%	38 29.8%
	Napa County	3 .8%	3 1.4%	0 .0%
	San Francisco	117 32.9%	65 31.9%	47 37.3%
	San Mateo County	4 1.0%	1 .3%	3 2.5%
	Solano County	19 5.2%	19 9.2%	0 .0%
	Sonoma County	2 .4%	0 .0%	2 1.2%
	Not Applicable	86 24.1%	45 22.1%	34 27.2%

		Area of Residence	
		Corinthian Island	West Shore Road
15. If applicable, in which county is your work or school located?	Total	7	19
	Alameda County	1 8.7%	0 .0%
	Contra Costa County	0 .0%	0 .0%
	Marin County	4 56.5%	10 52.5%
	Napa County	0 .0%	0 .0%
	San Francisco	0 .0%	5 26.1%
	San Mateo County	0 .0%	0 .0%
	Solano County	0 .0%	0 .0%
	Sonoma County	0 .0%	0 .0%
	Not Applicable	2 34.8%	4 21.4%

Comparisons of Column Proportions[b,c]

		Area of Residence		
		Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road	Corinthian Island
		(A)	(B)	(C)
15. If applicable, in which county is your work or school located?	Alameda County		a	a
	Contra Costa County		.	.
	Marin County			
	Napa County		a	a
	San Francisco		.	.
	San Mateo County			a
	Solano County		a	.
	Sonoma County	a	.	a
	Not Applicable	.		.

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a. This category is not used in comparisons because its column proportion is equal to zero or one.

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Comparisons of Column Proportions[b,c]

		Area of Residence
		West Shore Road
		(D)
15. If applicable, in which county is your work or school located?	Alameda County	a.
	Contra Costa County	a.
	Marin County	
	Napa County	a.
	San Francisco	
	San Mateo County	a.
	Solano County	a.
	Sonoma County	a.
	Not Applicable	

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a. This category is not used in comparisons because its column proportion is equal to zero or one.

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c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Homeownership Status		
		Total	Rent	Own
15. If applicable, in which county is your work or school located?	Total	359	42	317
	Alameda County	11 2.9%	0 .0%	11 3.3%
	Contra Costa County	2 .5%	0 .0%	2 .5%
	Marin County	114 31.9%	10 24.9%	104 32.8%
	Napa County	3 .8%	0 .0%	3 .9%
	San Francisco	116 32.2%	12 29.7%	103 32.5%
	San Mateo County	4 1.0%	3 7.5%	1 .2%
	Solano County	19 5.2%	0 .0%	19 5.9%
	Sonoma County	2 .4%	0 .0%	2 .5%
	Other	1 .3%	0 .0%	1 .3%
	Not Applicable	89 24.7%	16 37.8%	73 23.0%

Comparisons of Column Proportions[b,c]

		Homeownership Status	
		Rent	Own
		(A)	(B)
15. If applicable, in which county is your work or school located?	Alameda County	a.
	Contra Costa County	a.
	Marin County	
	Napa County	a.
	San Francisco	
	San Mateo County	B
	Solano County	a.
	Sonoma County	a.
	Other	a.
	Not Applicable	B

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a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Children in the Household		
		Total	Yes	No
15. If applicable, in which county is your work or school located?	Total	359	108	250
	Alameda County	11 2.9%	3 2.9%	7 3.0%
	Contra Costa County	2 .5%	0 .0%	2 .7%
	Marin County	113 31.6%	39 35.8%	75 29.8%
	Napa County	3 .8%	1 1.0%	2 .7%
	San Francisco	117 32.7%	65 60.3%	52 20.7%
	San Mateo County	4 1.0%	0 .0%	4 1.5%
	Solano County	19 5.2%	0 .0%	19 7.5%
	Sonoma County	2 .4%	0 .0%	2 .6%
	Other	1 .3%	0 .0%	1 .4%
	Not Applicable	88 24.6%	0 .0%	88 35.2%

Comparisons of Column Proportions[b,c]

		Children in the Household	
		Yes	No
		(A)	(B)
15. If applicable, in which county is your work or school located?	Alameda County	a .	
	Contra Costa County		
	Marin County		
	Napa County		
	San Francisco	B	
	San Mateo County	a .	
	Solano County	a .	
	Sonoma County	a .	
	Other	a .	
	Not Applicable	a .	

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a. This category is not used in comparisons because its column proportion is equal to zero or one.

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c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Seniors in the Household		
		Total	Yes	No
	Total	358	140	217
15. If applicable, in which county is your work or school located?	Alameda County	11 2.9%	3 2.1%	8 3.5%
	Contra Costa County	2 .5%	1 .4%	1 .5%
	Marin County	114 32.0%	48 34.3%	66 30.5%
	Napa County	3 .8%	2 1.2%	1 .5%
	San Francisco	115 32.0%	24 16.9%	91 41.8%
	San Mateo County	4 1.0%	1 .4%	3 1.4%
	Solano County	19 5.2%	0 .0%	19 8.6%
	Sonoma County	2 .4%	0 .0%	2 .7%
	Other	1 .3%	0 .0%	1 .5%
	Not Applicable	89 24.8%	63 44.7%	26 11.9%

Comparisons of Column Proportions[b,c]

		Seniors in the Household	
		Yes	No
		(A)	(B)
15. If applicable, in which county is your work or school located?	Alameda County		
	Contra Costa County		
	Marin County		
	Napa County		
	San Francisco		A
	San Mateo County		
	Solano County	a .	
	Sonoma County	a .	
	Other	a .	
	Not Applicable	B	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Employment Status				
		Total	Full-time	Self-Employed/Home-based Business	Retired	Other
	Total	358	96	138	83	41
15. If applicable, in which county is your work or school located?	Alameda County	11 2.9%	6 6.4%	4 2.8%	1 .7%	0 .0%
	Contra Costa County	2 .5%	1 1.2%	0 .0%	0 .0%	1 1.5%
	Marin County	114 32.0%	14 14.9%	69 50.2%	8 9.2%	23 56.8%
	Napa County	3 .8%	0 .0%	1 .4%	1 1.3%	1 2.7%
	San Francisco	117 32.8%	51 53.6%	54 39.3%	4 5.3%	7 17.6%
	San Mateo County	4 1.0%	2 1.6%	2 1.1%	0 .0%	1 1.5%
	Solano County	19 5.2%	19 19.6%	0 .0%	0 .0%	0 .0%
	Sonoma County	2 .4%	2 1.6%	0 .0%	0 .0%	0 .0%
	Other	1	1	0	0	0

		Employment Status				
		Total	Full-time	Self-Employed/Home-based Business	Retired	Other
15. If applicable, in which county is your work or school located?	Other	.3%	1.2%	.0%	.0%	.0%
	Not Applicable	86 24.1%	0 .0%	8 6.2%	69 83.5%	8 20.0%

Comparisons of Column Proportions[b,c]

		Employment Status			
		Full-time	Self-Employed/Home-based Business	Retired	Other
		(A)	(B)	(C)	(D)
15. If applicable, in which county is your work or school located?	Alameda County		a	a	a
	Contra Costa County				
	Marin County		A C		A C
	Napa County	a			
	San Francisco	C D	C		
	San Mateo County			a	
	Solano County		a	a	a
	Sonoma County		a	a	a
	Other		a	a	a
	Not Applicable	a		B D	B

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a. This category is not used in comparisons because its column proportion is equal to zero or one.

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		Satisfaction with Quality of Life		
		Total	Very Satisfied	Somewhat Satisfied
15. If applicable, in which county is your work or school located?	Total	342	279	46
	Alameda County	11 3.1%	9 3.1%	2 4.0%
	Contra Costa County	1 .3%	1 .4%	0 .0%
	Marin County	108 31.7%	84 30.3%	17 37.4%
	Napa County	3 .8%	3 1.0%	0 .0%
	San Francisco	112 32.8%	91 32.8%	15 32.8%
	San Mateo County	2 .6%	2 .8%	0 .0%
	Solano County	18 5.2%	18 6.3%	0 .0%
	Sonoma County	2 .5%	2 .6%	0 .0%
	Not Applicable	86 25.1%	69 24.8%	12 25.7%

		Satisfaction with Quality of Life
		Dissatisfied
15. If applicable, in which county is your work or school located?	Total	17
	Alameda County	0 .0%
	Contra Costa County	0 .0%
	Marin County	7 38.5%
	Napa County	0 .0%
	San Francisco	6 32.9%
	San Mateo County	0 .0%
	Solano County	0 .0%
	Sonoma County	0 .0%
	Not Applicable	5 28.6%

Comparisons of Column Proportions[b,c]

		Satisfaction with Quality of Life		
		Very Satisfied	Somewhat Satisfied	Dissatisfied
		(A)	(B)	(C)
15. If applicable, in which county is your work or school located?	Alameda County		a	a
	Contra Costa County		.	.
	Marin County			
	Napa County		a	a
	San Francisco		.	.
	San Mateo County		a	a
	Solano County		.	.
	Sonoma County		a	a
	Not Applicable		.	.

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a. This category is not used in comparisons because its column proportion is equal to zero or one.

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c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Participation in Recreation programs, classes or events		
		Total	Yes	No
15. If applicable, in which county is your work or school located?	Total	361	155	206
	Alameda County	11 2.9%	1 .7%	9 4.6%
	Contra Costa County	2 .5%	1 .4%	1 .5%
	Marin County	114 31.7%	54 35.2%	60 29.1%
	Napa County	3 .8%	1 .4%	2 1.1%
	San Francisco	118 32.7%	67 43.5%	51 24.7%
	San Mateo County	4 1.0%	2 1.4%	2 .8%
	Solano County	19 5.2%	0 .0%	19 9.1%
	Sonoma County	2 .4%	0 .0%	2 .8%
	Other	1 .3%	0 .0%	1 .5%
	Not Applicable	88 24.4%	29 18.5%	60 28.9%

Comparisons of Column Proportions[b,c]

		Participation in Recreation programs, classes or events	
		Yes	No
		(A)	(B)
15. If applicable, in which county is your work or school located?	Alameda County		A
	Contra Costa County		
	Marin County		
	Napa County		
	San Francisco	B	
	San Mateo County		
	Solano County	a	
	Sonoma County	.	
	Other	a	
	Not Applicable	.	A

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a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Perceived Size of Homes		
		Total	Right Size	Too Large
15. If applicable, in which county is your work or school located?	Total	348	194	153
	Alameda County	11 3.0%	8 4.2%	2 1.5%
	Contra Costa County	2 .5%	1 .3%	1 .7%
	Marin County	111 32.0%	60 31.1%	51 33.1%
	Napa County	3 .8%	0 .0%	3 1.8%
	San Francisco	111 32.0%	67 34.5%	44 28.8%
	San Mateo County	4 1.1%	4 1.9%	0 .0%
	Solano County	19 5.4%	18 9.1%	1 .7%
	Sonoma County	2 .4%	2 .8%	0 .0%
	Other	1 .3%	1 .6%	0 .0%
	Not Applicable	85 24.5%	34 17.5%	51 33.4%

Comparisons of Column Proportions[b,c]

		Perceived Size of Homes	
		Right Size	Too Large
		(A)	(B)
15. If applicable, in which county is your work or school located?	Alameda County		
	Contra Costa County		
	Marin County		
	Napa County	a .	
	San Francisco		
	San Mateo County		a .
	Solano County	B	
	Sonoma County		a .
	Other		a .
	Not Applicable		A

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Traffic Flow Ratings			
		Total	Excellent	Good	Fair/Poor
	Total	359	102	173	84
15. If applicable, in which county is your work or school located?	Alameda County	11 2.9%	4 4.2%	5 2.7%	2 1.8%
	Contra Costa County	2 .5%	0 .0%	2 1.0%	0 .0%
	Marin County	113 31.4%	35 34.8%	48 27.8%	29 34.9%
	Napa County	3 .8%	1 .6%	2 1.3%	0 .0%
	San Francisco	118 32.9%	42 41.0%	58 33.4%	19 22.1%
	San Mateo County	4 1.0%	3 3.1%	1 .3%	0 .0%
	Solano County	19 5.2%	0 .0%	1 .6%	18 20.9%
	Sonoma County	2 .4%	0 .0%	2 .9%	0 .0%
	Other	1 .3%	0 .0%	0 .0%	1 1.3%
	Not Applicable	88 24.5%	17 16.4%	56 32.1%	16 18.9%

Comparisons of Column Proportions[b,c]

		Traffic Flow Ratings		
		Excellent	Good	Fair/Poor
		(A)	(B)	(C)
15. If applicable, in which county is your work or school located?	Alameda County			
	Contra Costa County	a .		a .
	Marin County			
	Napa County			a .
	San Francisco	C		
	San Mateo County			a .
	Solano County	a .		B
	Sonoma County	a .		a .
	Other	a .	a .	
	Not Applicable		A	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

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		Support for Development of Single Family Homes		
		Total	Strongly Support	Somewhat Support
	Total	324	92	151
15. If applicable, in which county is your work or school located?	Alameda County	11 3.2%	1 1.2%	6 4.0%
	Contra Costa County	1 .3%	0 .0%	1 .7%
	Marin County	103 31.7%	29 32.0%	55 36.4%
	Napa County	3 .9%	1 1.2%	1 .7%
	San Francisco	108 33.4%	29 31.2%	36 24.1%
	San Mateo County	2 .7%	2 1.7%	1 .4%
	Solano County	19 5.8%	0 .0%	18 11.7%
	Sonoma County	2 .5%	2 1.7%	0 .0%
	Other	1 .3%	0 .0%	1 .7%
	Not Applicable	75	29	32

		Support for Development of Single Family Homes
		Oppose
15. If applicable, in which county is your work or school located?	Total	81
	Alameda County	3 4.1%
	Contra Costa County	0 .0%
	Marin County	18 22.5%
	Napa County	1 .7%
	San Francisco	43 53.0%
	San Mateo County	0 .0%
	Solano County	1 1.4%
	Sonoma County	0 .0%
	Other	0 .0%
	Not Applicable	15 18.4%

Comparisons of Column Proportions[b,c]

		Support for Development of Single Family Homes		
		Strongly Support	Somewhat Support	Oppose
		(A)	(B)	(C)
15. If applicable, in which county is your work or school located?	Alameda County			
	Contra Costa County	a .		a .
	Marin County			
	Napa County			
	San Francisco			A B
	San Mateo County			a .
	Solano County	a .	C	
	Sonoma County		a .	a .
	Other	a .		a .
	Not Applicable			

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Gender		
		Total	Male	Female
16. If a shuttle service were available from Belvedere to park-and-ride lots and bus stops along Highway 101, how likely would you or member of your household be to ride the shuttle service?	Total	382	171	211
	Very Likely	61 15.8%	11 6.7%	49 23.3%
	Somewhat Likely	84 21.9%	41 24.2%	42 20.1%
	Somewhat Unlikely	59 15.5%	23 13.6%	36 17.0%
	Very Unlikely	179 46.8%	95 55.5%	84 39.7%

Comparisons of Column Proportions[a,b]

		Gender	
		Male	Female
		(A)	(B)
16. If a shuttle service were available from Belvedere to park-and-ride lots and bus stops along Highway 101, how likely would you or member of your household be to ride the shuttle service?	Very Likely		A
	Somewhat Likely		
	Somewhat Unlikely		
	Very Unlikely	B	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Age				
		Total	18 to 44	45 to 54	55 to 64	65 and over
16. If a shuttle service were available from Belvedere to park-and-ride lots and bus stops along Highway 101, how likely would you or member of your household be to ride the shuttle service?	Total	383	84	82	89	127
	Very Likely	61 15.8%	16 19.5%	11 13.2%	15 17.3%	18 14.0%
	Somewhat Likely	86 22.4%	15 17.7%	22 26.4%	22 24.7%	27 21.4%
	Somewhat Unlikely	59 15.4%	7 8.8%	11 13.2%	17 18.5%	24 19.1%
	Very Unlikely	178 46.4%	46 54.0%	39 47.2%	35 39.5%	58 45.6%

Comparisons of Column Proportions[a,b]

		Age			
		18 to 44	45 to 54	55 to 64	65 and over
		(A)	(B)	(C)	(D)
16. If a shuttle service were available from Belvedere to park-and-ride lots and bus stops along Highway 101, how likely would you or member of your household be to ride the shuttle service?	Very Likely				
	Somewhat Likely				
	Somewhat Unlikely				
	Very Unlikely				

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Length of Residence			
		Total	Less than 5 years	5 to 9 years	10 to 19 years
16. If a shuttle service were available from Belvedere to park-and-ride lots and bus stops along Highway 101, how likely would you or member of your household be to ride the shuttle service?	Total	386	47	94	101
	Very Likely	62 16.0%	7 15.2%	11 11.9%	22 22.0%
	Somewhat Likely	86 22.3%	11 23.4%	17 18.4%	26 25.6%
	Somewhat Unlikely	59 15.3%	7 15.3%	15 16.1%	14 13.4%
	Very Unlikely	179 46.4%	22 46.1%	50 53.6%	39 38.9%

		Length of Residence
		20 years or more
16. If a shuttle service were available from Belvedere to park-and-ride lots and bus stops along Highway 101, how likely would you or member of your household be to ride the shuttle service?	Total	143
	Very Likely	21 14.6%
	Somewhat Likely	32 22.1%
	Somewhat Unlikely	23 16.2%
	Very Unlikely	67 47.1%

Comparisons of Column Proportions[a,b]

		Length of Residence		
		Less than 5 years	5 to 9 years	10 to 19 years
		(A)	(B)	(C)
16. If a shuttle service were available from Belvedere to park-and-ride lots and bus stops along Highway 101, how likely would you or member of your household be to ride the shuttle service?	Very Likely			
	Somewhat Likely			
	Somewhat Unlikely			
	Very Unlikely			

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

Comparisons of Column Proportions[a,b]

		Length of Residence
		20 years or more
		(D)
16. If a shuttle service were available from Belvedere to park-and-ride lots and bus stops along Highway 101, how likely would you or member of your household be to ride the shuttle service?	Very Likely	
	Somewhat Likely	
	Somewhat Unlikely	
	Very Unlikely	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Area of Residence		
		Total	Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road
16. If a shuttle service were available from Belvedere to park-and-ride lots and bus stops along Highway 101, how likely would you or member of your household be to ride the shuttle service?	Total	382	215	140
	Very Likely	61 15.9%	35 16.4%	24 17.4%
	Somewhat Likely	84 22.0%	42 19.7%	33 23.6%
	Somewhat Unlikely	59 15.5%	24 11.1%	31 21.9%
	Very Unlikely	178 46.5%	114 52.8%	52 37.1%

		Area of Residence	
		Corinthian Island	West Shore Road
16. If a shuttle service were available from Belvedere to park-and-ride lots and bus stops along Highway 101, how likely would you or member of your household be to ride the shuttle service?	Total	9	18
	Very Likely	0 .0%	1 6.6%
	Somewhat Likely	4 45.7%	5 26.6%
	Somewhat Unlikely	3 33.5%	2 9.4%
	Very Unlikely	2 20.7%	10 57.5%

Comparisons of Column Proportions[b,c]

		Area of Residence		
		Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road	Corinthian Island
		(A)	(B)	(C)
16. If a shuttle service were available from Belvedere to park-and-ride lots and bus stops along Highway 101, how likely would you or member of your household be to ride the shuttle service?	Very Likely			a .
	Somewhat Likely			
	Somewhat Unlikely		A	
	Very Unlikely	B		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

Comparisons of Column Proportions[b,c]

		Area of Residence
		West Shore Road
		(D)
16. If a shuttle service were available from Belvedere to park-and-ride lots and bus stops along Highway 101, how likely would you or member of your household be to ride the shuttle service?	Very Likely	
	Somewhat Likely	
	Somewhat Unlikely	
	Very Unlikely	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Homeownership Status		
		Total	Rent	Own
16. If a shuttle service were available from Belvedere to park-and-ride lots and bus stops along Highway 101, how likely would you or member of your household be to ride the shuttle service?	Total	385	44	341
	Very Likely	62 16.0%	8 18.6%	53 15.7%
	Somewhat Likely	84 21.9%	9 21.0%	75 22.1%
	Somewhat Unlikely	59 15.4%	6 12.9%	53 15.7%
	Very Unlikely	180 46.7%	21 47.5%	159 46.6%

Comparisons of Column Proportions[a,b]

		Homeownership Status	
		Rent	Own
		(A)	(B)
16. If a shuttle service were available from Belvedere to park-and-ride lots and bus stops along Highway 101, how likely would you or member of your household be to ride the shuttle service?	Very Likely		
	Somewhat Likely		
	Somewhat Unlikely		
	Very Unlikely		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Children in the Household		
		Total	Yes	No
16. If a shuttle service were available from Belvedere to park-and-ride lots and bus stops along Highway 101, how likely would you or member of your household be to ride the shuttle service?	Total	383	106	277
	Very Likely	61 15.9%	18 16.7%	43 15.6%
	Somewhat Likely	84 22.0%	26 24.3%	58 21.1%
	Somewhat Unlikely	59 15.4%	13 12.0%	46 16.8%
	Very Unlikely	179 46.7%	50 47.1%	129 46.6%

Comparisons of Column Proportions[a,b]

		Children in the Household	
		Yes	No
		(A)	(B)
16. If a shuttle service were available from Belvedere to park-and-ride lots and bus stops along Highway 101, how likely would you or member of your household be to ride the shuttle service?	Very Likely		
	Somewhat Likely		
	Somewhat Unlikely		
	Very Unlikely		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Seniors in the Household		
		Total	Yes	No
16. If a shuttle service were available from Belvedere to park-and-ride lots and bus stops along Highway 101, how likely would you or member of your household be to ride the shuttle service?	Total	384	163	221
	Very Likely	60 15.6%	34 21.2%	26 11.6%
	Somewhat Likely	86 22.4%	30 18.7%	55 25.1%
	Somewhat Unlikely	58 15.1%	28 16.9%	31 13.8%
	Very Unlikely	180 46.8%	70 43.2%	109 49.5%

Comparisons of Column Proportions[a,b]

		Seniors in the Household	
		Yes	No
		(A)	(B)
16. If a shuttle service were available from Belvedere to park-and-ride lots and bus stops along Highway 101, how likely would you or member of your household be to ride the shuttle service?	Very Likely	B	
	Somewhat Likely		
	Somewhat Unlikely		
	Very Unlikely		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Employment Status				
		Total	Full-time	Self-Employed/Home-based Business	Retired	Other
16. If a shuttle service were available from Belvedere to park-and-ride lots and bus stops along Highway 101, how likely would you or member of your household be to ride the shuttle service?	Total	382	94	139	104	44
	Very Likely	61 16.0%	9 9.4%	18 12.7%	18 17.1%	17 37.1%
	Somewhat Likely	86 22.5%	24 25.8%	35 25.1%	22 21.3%	5 10.3%
	Somewhat Unlikely	58 15.2%	5 5.8%	24 17.5%	21 19.9%	7 16.8%
	Very Unlikely	177 46.3%	55 59.0%	62 44.7%	43 41.7%	16 35.8%

Comparisons of Column Proportions[a,b]

		Employment Status			
		Full-time	Self-Employed/Home-based Business	Retired	Other
		(A)	(B)	(C)	(D)
16. If a shuttle service were available from Belvedere to park-and-ride lots and bus stops along Highway 101, how likely would you or member of your household be to ride the shuttle service?	Very Likely				A B
	Somewhat Likely				
	Somewhat Unlikely			A	
	Very Unlikely				

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Satisfaction with Quality of Life			
		Total	Very Satisfied	Somewhat Satisfied	Dissatisfied
16. If a shuttle service were available from Belvedere to park-and-ride lots and bus stops along Highway 101, how likely would you or member of your household be to ride the shuttle service?	Total	367	301	48	17
	Very Likely	58 15.9%	46 15.2%	9 18.8%	3 19.0%
	Somewhat Likely	81 22.2%	68 22.5%	11 23.7%	2 12.6%
	Somewhat Unlikely	54 14.6%	45 14.8%	6 13.0%	3 16.4%
	Very Unlikely	173 47.3%	143 47.4%	22 44.6%	9 52.1%

Comparisons of Column Proportions[a,b]

		Satisfaction with Quality of Life		
		Very Satisfied	Somewhat Satisfied	Dissatisfied
		(A)	(B)	(C)
16. If a shuttle service were available from Belvedere to park-and-ride lots and bus stops along Highway 101, how likely would you or member of your household be to ride the shuttle service?	Very Likely			
	Somewhat Likely			
	Somewhat Unlikely			
	Very Unlikely			

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Participation in Recreation programs, classes or events		
		Total	Yes	No
16. If a shuttle service were available from Belvedere to park-and-ride lots and bus stops along Highway 101, how likely would you or member of your household be to ride the shuttle service?	Total	387	171	215
	Very Likely	62 15.9%	28 16.4%	33 15.5%
	Somewhat Likely	85 22.1%	45 26.1%	41 18.9%
	Somewhat Unlikely	59 15.3%	30 17.3%	29 13.7%
	Very Unlikely	181 46.7%	69 40.2%	112 51.9%

Comparisons of Column Proportions[a,b]

		Participation in Recreation programs, classes or events	
		Yes	No
		(A)	(B)
16. If a shuttle service were available from Belvedere to park-and-ride lots and bus stops along Highway 101, how likely would you or member of your household be to ride the shuttle service?	Very Likely		
	Somewhat Likely		
	Somewhat Unlikely		
	Very Unlikely		A

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Perceived Size of Homes		
		Total	Right Size	Too Large
16. If a shuttle service were available from Belvedere to park-and-ride lots and bus stops along Highway 101, how likely would you or member of your household be to ride the shuttle service?	Total	374	200	175
	Very Likely	62 16.4%	25 12.6%	36 20.8%
	Somewhat Likely	83 22.1%	43 21.7%	39 22.6%
	Somewhat Unlikely	57 15.3%	27 13.6%	30 17.3%
	Very Unlikely	173 46.1%	104 52.0%	69 39.3%

Comparisons of Column Proportions[a,b]

		Perceived Size of Homes	
		Right Size	Too Large
		(A)	(B)
16. If a shuttle service were available from Belvedere to park-and-ride lots and bus stops along Highway 101, how likely would you or member of your household be to ride the shuttle service?	Very Likely		A
	Somewhat Likely		
	Somewhat Unlikely		
	Very Unlikely	B	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Traffic Flow Ratings			
		Total	Excellent	Good	Fair/Poor
16. If a shuttle service were available from Belvedere to park-and-ride lots and bus stops along Highway 101, how likely would you or member of your household be to ride the shuttle service?	Total	386	110	188	89
	Very Likely	61 15.8%	16 14.5%	23 12.0%	22 25.3%
	Somewhat Likely	86 22.3%	27 24.4%	39 20.9%	20 22.5%
	Somewhat Unlikely	59 15.3%	13 11.5%	36 19.4%	10 11.5%
	Very Unlikely	180 46.6%	54 49.6%	90 47.7%	36 40.7%

Comparisons of Column Proportions[a,b]

		Traffic Flow Ratings		
		Excellent	Good	Fair/Poor
		(A)	(B)	(C)
16. If a shuttle service were available from Belvedere to park-and-ride lots and bus stops along Highway 101, how likely would you or member of your household be to ride the shuttle service?	Very Likely			B
	Somewhat Likely			
	Somewhat Unlikely			
	Very Unlikely			

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Support for Development of Single Family Homes		
		Total	Strongly Support	Somewhat Support
16. If a shuttle service were available from Belvedere to park-and-ride lots and bus stops along Highway 101, how likely would you or member of your household be to ride the shuttle service?	Total	348	106	157
	Very Likely	58 16.6%	16 15.3%	30 18.8%
	Somewhat Likely	77 22.2%	23 21.4%	33 21.2%
	Somewhat Unlikely	50 14.3%	18 16.5%	15 9.8%
	Very Unlikely	163	50	79

		Support for Development of Single Family Homes
		Oppose
16. If a shuttle service were available from Belvedere to park-and-ride lots and bus stops along Highway 101, how likely would you or member of your household be to ride the shuttle service?	Total	85
	Very Likely	12 14.0%
	Somewhat Likely	21 25.2%
	Somewhat Unlikely	17 19.7%
	Very Unlikely	35 41.2%

Comparisons of Column Proportions[a,b]

		Support for Development of Single Family Homes		
		Strongly Support	Somewhat Support	Oppose
		(A)	(B)	(C)
16. If a shuttle service were available from Belvedere to park-and-ride lots and bus stops along Highway 101, how likely would you or member of your household be to ride the shuttle service?	Very Likely			
	Somewhat Likely			
	Somewhat Unlikely			
	Very Unlikely			

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Gender		
		Total	Male	Female
17. During the elementary and middle school year, how important is it to encourage local parents to carpool or use school bus service to improve traffic flow along Tiburon Boulevard?	Total	385	174	211
	Extremely Important	227 58.9%	94 54.1%	133 62.8%
	Very Important	90 23.3%	49 28.1%	41 19.4%
	Somewhat Important	47 12.2%	16 9.2%	31 14.7%
	Not Important	22 5.6%	15 8.6%	7 3.2%

Comparisons of Column Proportions[a,b]

		Gender	
		Male	Female
		(A)	(B)
17. During the elementary and middle school year, how important is it to encourage local parents to carpool or use school bus service to improve traffic flow along Tiburon Boulevard?	Extremely Important		
	Very Important	B	
	Somewhat Important		
	Not Important	B	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Age				
		Total	18 to 44	45 to 54	55 to 64	65 and over
17. During the elementary and middle school year, how important is it to encourage local parents to carpool or use school bus service to improve traffic flow along Tiburon Boulevard?	Total	387	84	86	88	129
	Extremely Important	228 59.0%	41 48.2%	54 63.6%	59 67.5%	73 57.1%
	Very Important	90 23.2%	7 8.8%	19 21.8%	20 22.5%	44 34.1%
	Somewhat Important	47 12.2%	29 34.1%	6 7.3%	4 5.0%	8 6.0%
	Not Important	22 5.6%	7 8.8%	6 7.3%	4 5.0%	4 2.8%

Comparisons of Column Proportions[a,b]

		Age			
		18 to 44	45 to 54	55 to 64	65 and over
		(A)	(B)	(C)	(D)
17. During the elementary and middle school year, how important is it to encourage local parents to carpool or use school bus service to improve traffic flow along Tiburon Boulevard?	Extremely Important				
	Very Important				A
	Somewhat Important	B C D			
	Not Important				

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Length of Residence		
		Total	Less than 5 years	5 to 9 years
17. During the elementary and middle school year, how important is it to encourage local parents to carpool or use school bus service to improve traffic flow along Tiburon Boulevard?	Total	389	47	95
	Extremely Important	229 58.9%	29 60.4%	45 46.8%
	Very Important	92 23.6%	12 24.5%	15 16.1%
	Somewhat Important	47 12.1%	5 11.2%	26 27.4%
	Not Important	21 5.4%	2 3.9%	9 9.7%

		Length of Residence	
		10 to 19 years	20 years or more
17. During the elementary and middle school year, how important is it to encourage local parents to carpool or use school bus service to improve traffic flow along Tiburon Boulevard?	Total	106	141
	Extremely Important	68 64.8%	88 62.1%
	Very Important	24 23.2%	40 28.6%
	Somewhat Important	8 7.3%	8 5.7%
	Not Important	5 4.7%	5 3.5%

Comparisons of Column Proportions[a,b]

		Length of Residence		
		Less than 5 years	5 to 9 years	10 to 19 years
		(A)	(B)	(C)
17. During the elementary and middle school year, how important is it to encourage local parents to carpool or use school bus service to improve traffic flow along Tiburon Boulevard?	Extremely Important			
	Very Important			
	Somewhat Important		C D	
	Not Important			

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

Comparisons of Column Proportions[a,b]

		Length of Residence
		20 years or more
		(D)
17. During the elementary and middle school year, how important is it to encourage local parents to carpool or use school bus service to improve traffic flow along Tiburon Boulevard?	Extremely Important	
	Very Important	
	Somewhat Important	
	Not Important	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Area of Residence		
		Total	Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road
17. During the elementary and middle school year, how important is it to encourage local parents to carpool or use school bus service to improve traffic flow along Tiburon Boulevard?	Total	385	218	139
	Extremely Important	226 58.5%	113 52.1%	94 67.9%
	Very Important	91 23.6%	55 25.5%	30 21.8%
	Somewhat Important	47 12.2%	34 15.6%	8 5.6%
	Not Important	22 5.6%	15 6.9%	7 4.8%

		Area of Residence	
		Corinthian Island	West Shore Road
17. During the elementary and middle school year, how important is it to encourage local parents to carpool or use school bus service to improve traffic flow along Tiburon Boulevard?	Total	9	21
	Extremely Important	6 72.4%	12 57.7%
	Very Important	2 20.7%	4 18.5%
	Somewhat Important	1 6.9%	5 23.9%
	Not Important	0 .0%	0 .0%

Comparisons of Column Proportions[b,c]

		Area of Residence		
		Belvedere Island – including the west side of San Rafael Avenue	Belvedere Lagoon – including Lower Beach Road	Corinthian Island
		(A)	(B)	(C)
17. During the elementary and middle school year, how important is it to encourage local parents to carpool or use school bus service to improve traffic flow along Tiburon Boulevard?	Extremely Important		A	
	Very Important			
	Somewhat Important	B		
	Not Important			[a] .

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

Comparisons of Column Proportions[b,c]

		Area of Residence
		West Shore Road
		(D)
17. During the elementary and middle school year, how important is it to encourage local parents to carpool or use school bus service to improve traffic flow along Tiburon Boulevard?	Extremely Important	
	Very Important	
	Somewhat Important	B
	Not Important	[a] .

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. This category is not used in comparisons because its column proportion is equal to zero or one.

b. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

c. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Homeownership Status		
		Total	Rent	Own
17. During the elementary and middle school year, how important is it to encourage local parents to carpool or use school bus service to improve traffic flow along Tiburon Boulevard?	Total	388	45	343
	Extremely Important	227 58.6%	28 62.5%	200 58.1%
	Very Important	92 23.6%	11 25.2%	80 23.5%
	Somewhat Important	47 12.1%	2 5.5%	45 13.0%
	Not Important	22 5.6%	3 6.8%	19 5.4%

Comparisons of Column Proportions[a,b]

		Homeownership Status	
		Rent	Own
		(A)	(B)
17. During the elementary and middle school year, how important is it to encourage local parents to carpool or use school bus service to improve traffic flow along Tiburon Boulevard?	Extremely Important		
	Very Important		
	Somewhat Important		
	Not Important		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Children in the Household		
		Total	Yes	No
17. During the elementary and middle school year, how important is it to encourage local parents to carpool or use school bus service to improve traffic flow along Tiburon Boulevard?	Total	387	110	277
	Extremely Important	227 58.8%	65 59.1%	162 58.7%
	Very Important	91 23.6%	21 18.8%	71 25.5%
	Somewhat Important	47 12.2%	12 11.0%	35 12.6%
	Not Important	21 5.4%	12 11.1%	9 3.2%

Comparisons of Column Proportions[a,b]

		Children in the Household	
		Yes	No
		(A)	(B)
17. During the elementary and middle school year, how important is it to encourage local parents to carpool or use school bus service to improve traffic flow along Tiburon Boulevard?	Extremely Important		
	Very Important		
	Somewhat Important		
	Not Important	B	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Seniors in the Household		
		Total	Yes	No
17. During the elementary and middle school year, how important is it to encourage local parents to carpool or use school bus service to improve traffic flow along Tiburon Boulevard?	Total	387	163	224
	Extremely Important	227 58.8%	99 60.5%	129 57.5%
	Very Important	92 23.7%	49 29.8%	43 19.3%
	Somewhat Important	47 12.2%	11 6.5%	36 16.3%
	Not Important	21 5.3%	5 3.1%	15 6.9%

Comparisons of Column Proportions[a,b]

		Seniors in the Household	
		Yes	No
		(A)	(B)
17. During the elementary and middle school year, how important is it to encourage local parents to carpool or use school bus service to improve traffic flow along Tiburon Boulevard?	Extremely Important	B	
	Very Important		
	Somewhat Important		A
	Not Important		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Employment Status				
		Total	Full-time	Self-Employed/Home-based Business	Retired	Other
17. During the elementary and middle school year, how important is it to encourage local parents to carpool or use school bus service to improve traffic flow along Tiburon Boulevard?	Total	385	95	142	105	44
	Extremely Important	225 58.3%	49 52.0%	88 62.4%	57 54.6%	30 67.7%
	Very Important	92 23.8%	18 19.5%	28 19.7%	38 36.0%	8 17.3%
	Somewhat Important	47 12.2%	23 24.5%	12 8.8%	6 6.1%	5 11.5%
	Not Important	22 5.6%	4 3.9%	13 9.1%	3 3.3%	2 3.5%

Comparisons of Column Proportions[a,b]

		Employment Status				
		Full-time	Self-Employed/Home-based Business	Retired	Other	
		(A)	(B)	(C)	(D)	
17. During the elementary and middle school year, how important is it to encourage local parents to carpool or use school bus service to improve traffic flow along Tiburon Boulevard?	Extremely Important					
	Very Important			B		
	Somewhat Important	B C				
	Not Important					

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Satisfaction with Quality of Life		
		Total	Very Satisfied	Somewhat Satisfied
17. During the elementary and middle school year, how important is it to encourage local parents to carpool or use school bus service to improve traffic flow along Tiburon Boulevard?	Total	370	303	49
	Extremely Important	214 57.9%	175 57.8%	29 59.0%
	Very Important	88 23.8%	76 25.0%	10 19.9%
	Somewhat Important	47 12.6%	38 12.6%	7 13.9%
	Not Important	21 5.7%	14 4.6%	4 7.2%

		Satisfaction with Quality of Life
		Dissatisfied
17. During the elementary and middle school year, how important is it to encourage local parents to carpool or use school bus service to improve traffic flow along Tiburon Boulevard?	Total	18
	Extremely Important	10 56.4%
	Very Important	3 15.5%
	Somewhat Important	2 8.8%
	Not Important	3 19.3%

Comparisons of Column Proportions[a,b]

		Satisfaction with Quality of Life		
		Very Satisfied	Somewhat Satisfied	Dissatisfied
		(A)	(B)	(C)
17. During the elementary and middle school year, how important is it to encourage local parents to carpool or use school bus service to improve traffic flow along Tiburon Boulevard?	Extremely Important			
	Very Important			
	Somewhat Important			
	Not Important			A

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a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Participation in Recreation programs, classes or events		
		Total	Yes	No
17. During the elementary and middle school year, how important is it to encourage local parents to carpool or use school bus service to improve traffic flow along Tiburon Boulevard?	Total	390	171	219
	Extremely Important	229 58.8%	110 64.4%	119 54.5%
	Very Important	92 23.5%	37 21.6%	55 25.1%
	Somewhat Important	47 12.1%	17 9.8%	30 13.8%
	Not Important	22 5.5%	7 4.3%	14 6.6%

Comparisons of Column Proportions[a,b]

		Participation in Recreation programs, classes or events	
		Yes	No
		(A)	(B)
17. During the elementary and middle school year, how important is it to encourage local parents to carpool or use school bus service to improve traffic flow along Tiburon Boulevard?	Extremely Important		
	Very Important		
	Somewhat Important		
	Not Important		

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Perceived Size of Homes		
		Total	Right Size	Too Large
17. During the elementary and middle school year, how important is it to encourage local parents to carpool or use school bus service to improve traffic flow along Tiburon Boulevard?	Total	375	202	173
	Extremely Important	223 59.4%	107 52.7%	116 67.3%
	Very Important	86 23.0%	43 21.3%	43 24.9%
	Somewhat Important	46 12.2%	36 17.6%	10 5.9%
	Not Important	20 5.3%	17 8.3%	3 1.9%

Comparisons of Column Proportions[a,b]

		Perceived Size of Homes	
		Right Size	Too Large
		(A)	(B)
17. During the elementary and middle school year, how important is it to encourage local parents to carpool or use school bus service to improve traffic flow along Tiburon Boulevard?	Extremely Important		A
	Very Important		
	Somewhat Important	B	
	Not Important	B	

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Traffic Flow Ratings			
		Total	Excellent	Good	Fair/Poor
17. During the elementary and middle school year, how important is it to encourage local parents to carpool or use school bus service to improve traffic flow along Tiburon Boulevard?	Total	388	110	189	89
	Extremely Important	227 58.6%	71 64.5%	107 56.3%	50 56.3%
	Very Important	92 23.7%	22 19.8%	56 29.8%	14 15.5%
	Somewhat Important	47 12.1%	12 11.3%	15 8.1%	19 21.9%
	Not Important	22 5.6%	5 4.4%	11 5.9%	6 6.3%

Comparisons of Column Proportions[a,b]

		Traffic Flow Ratings		
		Excellent	Good	Fair/Poor
		(A)	(B)	(C)
17. During the elementary and middle school year, how important is it to encourage local parents to carpool or use school bus service to improve traffic flow along Tiburon Boulevard?	Extremely Important			
	Very Important		C	
	Somewhat Important			B
	Not Important			

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

a. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

b. Cell counts of some categories are not integers. They were rounded to the nearest integers before performing column proportions tests.

		Support for Development of Single Family Homes		
		Total	Strongly Support	Somewhat Support
17. During the elementary and middle school year, how important is it to encourage local parents to carpool or use school bus service to improve traffic flow along Tiburon Boulevard?	Total	350	104	159
	Extremely Important	204 58.4%	65 62.0%	86 53.9%
	Very Important	82 23.4%	23 22.4%	40 25.4%
	Somewhat Important	44 12.7%	6 5.7%	27 16.8%
	Not Important	19 5.5%	10 10.0%	6 3.9%

		Support for Development of Single Family Homes
		Oppose
17. During the elementary and middle school year, how important is it to encourage local parents to carpool or use school bus service to improve traffic flow along Tiburon Boulevard?	Total	87
	Extremely Important	54 62.2%
	Very Important	18 21.0%
	Somewhat Important	12 13.5%
	Not Important	3 3.2%

Comparisons of Column Proportions[a,b]

		Support for Development of Single Family Homes		
		Strongly Support	Somewhat Support	Oppose
		(A)	(B)	(C)
17. During the elementary and middle school year, how important is it to encourage local parents to carpool or use school bus service to improve traffic flow along Tiburon Boulevard?	Extremely Important			
	Very Important			
	Somewhat Important		A	
	Not Important			

Results are based on two-sided tests with significance level 0.05. For each significant pair, the key of the category with the smaller column proportion appears under the category with the larger column proportion.

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GODBE RESEARCH

www.godberesearch.com

San Francisco Office/Northern California and
Corporate Offices
1660 South Amphlett Boulevard, Suite 205
San Mateo, CA 94402

Southern California Office/Southwest
4695 MacArthur Court, 11th Floor
Newport Beach, CA 92660

Seattle Office/Northwest
601 108th Avenue NE, Suite 1900
Bellevue, WA 98004

Biological Technical Report:
City of Belvedere General Plan Update

BELVEDERE, CALIFORNIA

Prepared For:

Plan B Municipal Consulting
2843 Hopyard Road, Suite 168
Pleasanton, CA 94588
Contact: Kristi Bascom

WRA Contact:

Justin Semion
semion@wra-ca.com

Date:

December 2008

wra
ENVIRONMENTAL CONSULTANTS

2169-G East Francisco Blvd., San Rafael, CA 94901 (415) 454-8868 tel (415) 454-0129 fax info@wra-ca.com www.wra-ca.com

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1.0 INTRODUCTION

The purpose of this report is to present technical information to assist in development of policy elements related to biological resources for the City of Belvedere General Plan. This document contains evaluations and recommendations regarding the biological resources within and adjacent to the City of Belvedere (Plan Area), shown in Figure 1. As described below, the primary biological resources of concern in Belvedere are related to fully aquatic habitat in the Bay, and therefore this document focuses on aquatic habitats and species that occupy those habitats.

1.1 Report Methods

An extensive literature and database search was conducted to determine: a) known locations of sensitive biological communities in the vicinity of Belvedere, b) the potential for special status plant and wildlife species to occur in Belvedere, and c) existing regulations protecting biological resources in the region of the Plan Area. Key resources used to compile this information include:

- California Natural Diversity Database records (CNDDB) (CDFG 2008)
- National Marine Fisheries Service Distribution Maps for California Salmonid Species (CalFish 2008)
- Report on the Subtidal Habitats and Associated Biological Taxa in San Francisco Bay (NOAA 2008)
- San Francisco Bay Eelgrass Inventory (Merkel & Associates, Inc. 2003)
- National Wetland Inventory Maps (USFWS 2008)
- Richardson Bay Dock and Boat Study (Zitney 2000)
- Richardson Bay Special Area Plan (BCDC 1984)
- Marin Countywide Plan: Environmental Quality Element (2008)
- Current aerial photographs

WRA also referenced local experience conducting biological resource surveys on many private home sites throughout the City of Belvedere in assessing existing conditions for biological resources in the Plan Area and vicinity. Summaries of regulatory restrictions pertaining to biological resources were sourced from the applicable agencies, including the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG), U.S. Army Corps of Engineers (Corps), National Marine Fisheries Service (NMFS), Regional Water Quality Control Board (RWQCB), and the San Francisco Bay Conservation and Development Commission (BCDC). The development of recommendations for the City of Belvedere General Plan policy elements is based on existing federal, state and local laws, regulations and policies governing biological resources in Belvedere.

2.0 PLAN AREA SETTING

In order for General Plan policies to address biological resources, it is important to understand the regional setting, local setting, and the typical activities that may need Planning Department approval in the Plan Area. The following sections provide an overview of this background information to provide a setting for assessing the occurrence of biological resources and making recommendations for General Plan Policies related to biological resources.

2.1 Regional Setting

The City of Belvedere is located in Marin County, California on the Tiburon Peninsula within the central portion of San Francisco Bay (Figure 1). The City of Belvedere is bordered by the City of Tiburon to the north, and is approximately 0.65 miles west of Angel Island. The western shoreline of Belvedere borders Richardson Bay, and Belvedere's eastern shoreline is bordered by Belvedere Cove and Raccoon Strait. Raccoon Strait and Richardson Bay join together at the southern tip of the City of Belvedere. Richardson Bay is a relatively shallow, biologically rich area which supports heavy recreational and some light commercial watercraft use, particularly along the western shoreline offshore of the City of Sausalito, west of the City of Belvedere. Boat traffic along the eastern shoreline of Richardson Bay, adjacent to the City of Belvedere consists primarily of light residential recreational boat use. Raccoon Strait is a deep, narrow natural channel between the eastern shore of Belvedere and Angel Island. Raccoon Strait connects San Pablo Bay and central San Francisco Bay to the north, with Richardson Bay and the Golden Gate to the south. Raccoon Strait exceeds 170 ft MLLW, and is continuously scoured by the strong tidal currents found within the San Francisco Bay (San Francisco Bay Map 2005). Belvedere Cove is a small inlet between the City of Belvedere and Raccoon Strait, and contains the San Francisco Yacht Club along with several residential docks.

Several ecological preserves have been designated in areas surrounding the City of Belvedere to conserve natural resources (Figure 2). Northwest of Belvedere between Tiburon, Corte Madera, and Mill Valley, is the Ring Mountain Open Space Preserve. The Ring Mountain Preserve is managed by Marin County, and provides valuable habitat for native wildlife, riparian species, and vegetation communities, particularly those associated with serpentine soils. The Tiburon Uplands Nature Preserve and Old St. Hilary's Open Space Preserve are located in eastern Tiburon, just northeast of Belvedere. These preserves provide habitat for the rare Tiburon jewelflower (*Streptanthus niger*) as well as oak and bay woodland communities.

The Richardson Bay Audubon Center and Sanctuary, located off the western shore of the City of Belvedere, is a marine reserve established to preserve habitat for marine and estuarine bird species. The Audubon Sanctuary restricts boat traffic within its boundaries, which encompass 900 acres of Bay waters extending from the tip of Strawberry Point East to Belvedere and North to Blackie's Pasture. These boundaries do not prohibit residents of the Belvedere shoreline from accessing private docks by boat. Preserve boundaries and other biologically significant areas in the region are shown in Figure 2.

Two nearby creeks are listed as salmonid bearing streams by the National Marine Fisheries Service: Arroyo Corte Madera del Presidio, which empties into Richardson Bay, and the Corte Madera Creek, which enters the San Francisco Bay at the Larkspur Ferry Terminal in Larkspur. Both watersheds provide important fish habitat, and salmonids have been documented to occur in the Arroyo Corte Madera Creek. No known or potential salmonid creeks are present within the City of Belvedere.

2.2 Local Setting

The City of Belvedere consists of three primary areas: Belvedere Island, Corinthian Island, and the Belvedere Lagoon (see Figure 1). Corinthian Island is located in the eastern portion of the City of Belvedere, and shares its northern boundary with the city of Tiburon. Belvedere Island is located in the southwestern portion of the City, and was historically connected to the mainland through a small strip of land and a drawbridge. Belvedere Lagoon was created shortly after World War II. Belvedere Lagoon is currently completely enclosed, and water levels are controlled by a pump station along San Rafael Avenue. The pump station takes water into Belvedere Lagoon during the summer months and pumps water out of the lagoon during the

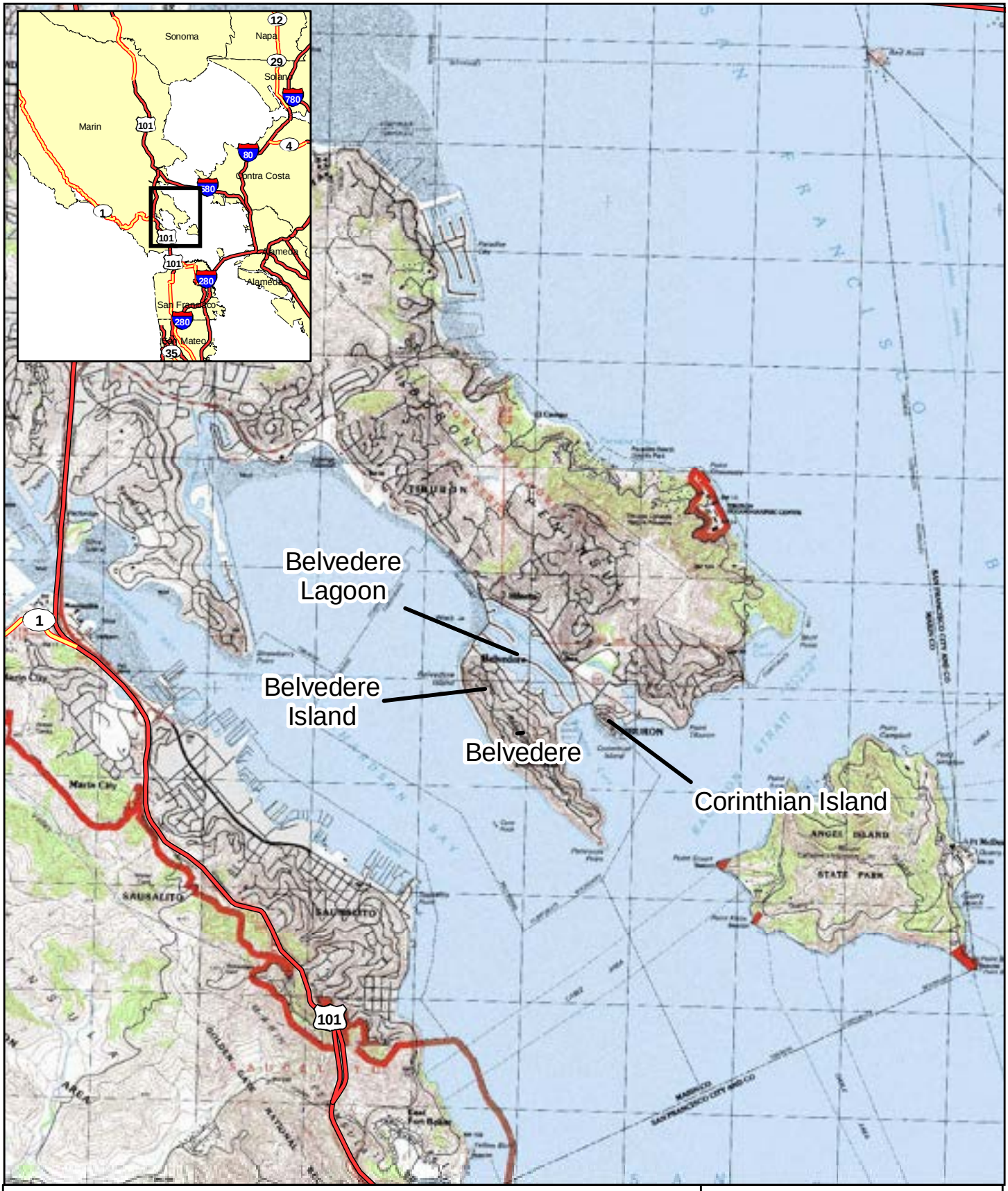

Figure 1. Regional Location Map

N
W E
S

0 0.25 0.5 1 Miles

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General Plan Update
Biology Technical Report
City of Belvedere, Marin County, California

Date: October 2008
Map By: Chris Zumwalt
Filepath:I:/Acad2000/18000/18060/gis/Arcmap/Figure 1.mxd

Figure 2. Regional Biologicallly Significant Areas in the Vicinity of the City of Belvedere

N
W E
S

0 0.25 0.5 1 Miles

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General Plan Update
Biology Technical Report
City of Belvedere, Marin County, California

Date: October 2008
Map By: Chris Zumwalt
Filepath:I:/Acad2000/18000/18060/gis/Arcmap/Figure 2.mxd

winter months. Extensive residential housing is present along the shoreline of Belvedere Lagoon, and the waters of Belvedere Lagoon are treated with dyes to control algal growth.

The majority of the shoreline in the City of Belvedere supports residential development. Approximately 71 of 129 parcels with shoreline access currently have docks that extend into the Bay. The shoreline of Belvedere is characterized by natural bedrock with limited areas of rip rap. Just below Mean High Water (MHW), the shoreline is comprised of mixed sand and mud containing some man made material originating from shoreline armoring. Most of the shoreline in the City of Belvedere is very steep, making direct shoreline access difficult. Some small areas of shoreline, such as along San Rafael Avenue, are comprised of rip rap.

Two navigational channels have been established and are maintained within the waters of Belvedere Cove (Figure 3). The San Francisco Yacht Club channel is located in the western portion of Belvedere Cove along Belvedere Island, and the Limbach Channel, runs along the eastern shore of Belvedere Cove, along Corinthian Island. In addition to these existing channels, the West Shore Channel has been identified as a potential navigational channel along the western shoreline of Belvedere to provide improved boat access to residents of West Shore Drive (see Figure 3).

2.3 Biological Setting Overview

The City of Belvedere is almost completely developed for residential and light commercial uses. As a result of this urbanization, biological habitats currently present in Belvedere consist primarily of non-native, landscaped vegetation communities that do not provide significant suitable habitat for many native species. Native oaks, cliffs, and abandoned structures within the Plan Area provide limited habitat for bird and bat species. However, the land use within the City of Belvedere results in biological habitat areas that are small, fragmented and subject to human disturbance; and, while they contribute to residents' enjoyment of certain native plants and animals, they are of relatively low habitat value to most plant and wildlife species.

Typical terrestrial species found in Belvedere are habitat generalists, such as the Mule Deer (*Odocoileus hemionus*), that have adapted to urban conditions and do not generally require protection to prevent significant population declines. Rare and special status species tend to be habitat specialists, and require specific natural habitats, and do not generally thrive in urban settings. Landscaped areas, as well as Belvedere Lagoon, also provide habitat for a variety of migratory bird species. Similarly, landscaped areas and abandoned structures could also provide bat roost habitat.

The most important biological habitat in Belvedere is the aquatic marine habitat along the shoreline and in the surrounding waters. Therefore, the primary biological concerns in the Plan Area are related to fully aquatic habitat in San Francisco Bay.

2.4 Description of Typical Development Activities

As described above, the City of Belvedere is largely residential and characterized by urban development and an extensive shoreline along the San Francisco Bay. Typical development activities that occur in Belvedere and may affect biological resources include, but are not limited to:

Figure 3. Local Navigational Channels

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Date: October 2008
Map By: Chris Zumwalt
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- existing home remodeling and expansion
- rebuilding homes on existing developed lots
- pile replacement, installation, and reinforcement for structures built over water
- installation and expansion of piers, docks, and boat hoists
- dredging of existing channels
- potential dredging of the West Shore Channel
- public park redevelopment
- maintenance of Belvedere Lagoon
- shoreline stabilization
- sea wall maintenance and replacement
- tree removal and landscaping.

Of these development activities, shoreline development has the greatest potential to affect sensitive biological habitats in the City of Belvedere. Activities such as home expansion and remodeling do not generally have a high potential to affect biological resources in the Plan Area.

3.0 APPLICABLE LAWS AND REGULATIONS

This section describes the federal, state, and local laws and regulations governing the protection of biological resources in the City of Belvedere. The following is a list of applicable regulatory restrictions, which are discussed below:

- Section 401 and 404 of the Federal Water Pollution Control Act Amendments of 1972 (Clean Water Act)
- Federal Endangered Species Act of 1973 and amendments (FESA)
- Magnuson-Stevens Fishery Conservation and Management Act
- Migratory Bird Treaty Act of 1918 (MBTA)
- State of California Porter-Cologne Act
- McAteer-Petris Act
- California Endangered Species Act (CESA)
- California Department of Fish and Game Code
- California Environmental Quality Act (CEQA)
- Richardson Bay Special Area Plan

3.1 Special Status Plant and Wildlife Species

Special status species are those species that are protected and regulated by the following laws and regulations:

- Federal Endangered Species Act of 1973 and amendments (FESA)
- Magnuson-Stevens Fishery Conservation and Management Act
- California Endangered Species Act (CESA)
- California Fish and Game Code
- Migratory Bird Treaty Act of 1918 (MBTA)
- California Environmental Quality Act (CEQA)

Regulatory agencies responsible for managing special status plant and wildlife species in the state of California include:

- U.S. Fish and Wildlife Service (USFWS)
- National Marine Fisheries Service (NMFS)
- California Department of Fish and Game (CDFG)

In addition, the California Native Plant Society (CNPS), a non-profit organization, provides input regarding special status plant species, which is typically integrated into environmental documents and management decisions made by the regulatory agencies.

The Federal Endangered Species Act (FESA) is implemented by USFWS and NMFS, and the California Endangered Species Act (CESA) is implemented by CDFG. These acts afford protection to sensitive plant and wildlife species that are formally listed, proposed for listing, or are candidates for listing as endangered or threatened under these acts. CDFG Species of Special Concern are not listed under these acts and generally have no special legal status; however, CDFG gives these species special consideration under CEQA. In addition to regulations for special status species, most birds in the United States, including non-status species, are protected by the Migratory Bird Treaty Act of 1918. Under this legislation, destroying the active nests, eggs, and young of bird species covered by the act is illegal. Activities that may threaten active nests, eggs or young are regulated by USFWS. Plant species on CNPS Lists 1 and 2 are also considered special status plant species. Impacts to these species are considered significant according to CEQA.

3.2 Sensitive Vegetation Communities

Sensitive vegetation communities are those communities that are regulated by the following laws and regulations:

- Section 401 and 404 of the Federal Water Pollution Control Act Amendments of 1972 (Clean Water Act)
- State of California Porter-Cologne Act
- McAteer-Petris Act
- California Fish and Game Code
- California Environmental Quality Act (CEQA)
- Richardson Bay Special Area Plan

Regulatory agencies responsible for managing sensitive vegetation communites in the state of California include:

- U.S. Army Corps of Engineers (Corps)
- Regional Water Quality Control Board (RWQCB)
- San Francisco Bay Conservation and Development Commission (BCDC)
- California Department of Fish and Game (CDFG)

In addition to special status species, CDFG also regulates sensitive biological communities and habitats in California. Streams and lakes, as habitat for fish and wildlife species, are subject to jurisdiction by CDFG under Sections 1600-1616 of the State Fish and Game Code. Alterations to or work within the top of bank in a streambed or lake, and associated riparian habitat generally require a 1602 Lake and Streambed Alteration Agreement. Other sensitive natural communities identified in local or regional plans, policies, regulations, or by the CDFG are evaluated by CDFG during the CEQA process.

The U.S. Army Corps of Engineers (Corps) regulates “Waters of the United States” under Section 404 of the Clean Water Act. “Waters of the U.S.” are defined broadly as waters

susceptible to use in commerce, including interstate waters and wetlands, all other waters (intrastate waterbodies, including wetlands), and their tributaries (33 CFR 328.3). “Other waters” generally include lakes, rivers, and streams. The placement of fill material into “Waters of the U.S.” (including wetlands) generally requires an individual or nationwide permit from the Corps under Section 404 of the Clean Water Act.

The California State Water Resources Control Board oversees the implementation of Section 401 of the CWA and the State Porter Cologne Act through nine regional Water Quality Control Boards. The Plan Area falls within the jurisdiction of the San Francisco Bay Regional Water Quality Control Board (RWQCB). Section 401 and the Porter Cologne Act are administered through issuance of Water Quality Certifications, which are required for any project that results in the placement of fill into “Waters of the State”. The term “Waters of the State” is defined by the Porter-Cologne Act as “any surface water or groundwater, including saline waters, within the boundaries of the state.” The Regional Water Quality Control Board (RWQCB) protects all waters in its regulatory scope, but has special responsibility for wetlands, riparian areas, and headwaters. RWQCB jurisdiction includes “isolated” wetlands and waters that may not be regulated by the Corps under Section 404. Projects that require a Corps permit, or fall under other federal jurisdiction, and have the potential to impact “Waters of the State,” are required to comply with the terms of the Water Quality Certification determination.

The San Francisco Bay Conservation and Development Commission (BCDC) has regulatory jurisdiction, as defined by the McAteer-Petris Act, over San Francisco Bay and its shoreline, which generally consists of the area between the Bay shoreline and a line 100 feet landward of and parallel to the shoreline. These areas are defined in the McAteer-Petris Act (PRC Section 66610) as:

> **San Francisco Bay**, being all areas that are subject to tidal action from the south end of the Bay to the Golden Gate (Point Bonita-Point Lobos) and to the Sacramento River line (a line between Stake Point and Simmons Point, extended northeasterly to the mouth of Marshall Cut), including all sloughs, and specifically, the marshlands lying between mean high tide and five feet above mean sea level; tidelands (land lying between mean high tide and mean low tide); and submerged lands (land lying below mean low tide).
>
> **A shoreline band** consisting of all territory located between the shoreline of San Francisco Bay as defined above and a line 100 feet landward of and parallel with that line, but excluding any portions of such territory which are included in other areas of BCDC jurisdiction; provided that the Commission may, by resolution, exclude from its area of jurisdiction any area within the shoreline band that it finds and declares is of no regional importance to the Bay.

BCDC implements the San Francisco Bay Plan by issuing permits for Bay filling and dredging and shoreline development. According to BCDC, Belvedere Lagoon is not within its jurisdiction, though the shoreline of San Francisco Bay in the City of Belvedere is within BCDC jurisdiction.

3.3 Essential Fish Habitat, Eelgrass, and Oysters

Essential Fish Habitat (EFH) is regulated through NMFS, a division of the National Oceanic and Atmospheric Administration (NOAA). Protection of EFH is mandated through changes implemented in 1996 to the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). In this act, EFH is defined as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" (16 U.S.C. 1802(10)). NMFS further defines essential fish habitat as areas that “contain habitat essential to the long-term survival and health of our nation’s fisheries” (NMFS 2008).

EFH can include the water column, certain bottom types such as sandy or rocky bottoms, vegetation such as eelgrass or kelp, or structurally complex coral or oyster reefs. NMFS has developed several fishery management plans (FMP) to aid in the identification and description of EFH for commercially and ecologically important species. For Richardson Bay and Belvedere Cove, habitat has been designated as EFH under the Coastal Pelagic, West Coast Groundfish, and Pacific Coastal Salmon FMPs. According to regulatory guidelines issued by NMFS, any federal agency that authorizes, funds, or undertakes action that may affect EFH is required to consult with NMFS (50 CFR 600.920).

Eelgrass habitat is primarily regulated by NMFS as EFH, though eelgrass beds are not covered under a specific FMP. Eelgrass beds are also afforded special protection under Section 404 of the Clean Water Act as "Special Aquatic Sites" (see 40 CFR Part 230.43). Eelgrass itself is not listed as threatened or endangered by the U.S. Fish and Wildlife Service or CDFG. However, because eelgrass is spawning ground for Pacific Herring and is important habitat for other aquatic wildlife, eelgrass beds are considered EFH. The first official regulatory policy regarding eelgrass protection on the west coast was the Southern California Eelgrass Mitigation Policy, issued by NMFS in 1991, developed by NMFS, CDFG, and the U.S. Navy. There is no official regulatory policy for eelgrass in San Francisco Bay, and final approvals for projects that may affect eelgrass are made by NMFS on a project by project basis.

Similar to eelgrass, oysters are regulated by NMFS under EFH regulations, though not specifically covered under a FMP. According to EFH regulations NMFS enters into EFH consultation if a project could result in adverse impacts to EFH, including "indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality and/or quantity of essential fish habitat" (50 CFR 600.810). Under this definition, if a project would modify oyster beds in a way that would reduce the quality and/or quantity of EFH, consultation is necessary and mitigation may be required.

3.4 Local Policies, Ordinances, Regulations

Dredged Materials Management Office

Authorization to dredge in San Francisco Bay is coordinated through the Dredged Materials Management Office (DMMO), a joint program of the Corps, BCDC, RWQCB, State Lands Commission (SLC), and the U.S. Environmental Protection Agency (EPA). USFWS, NMFS, and CDFG also participate in this program by providing consultation on special status species issues as needed. The DMMO was created as part of the Long Term Management Strategy for Dredged Material in San Francisco Bay (known as the "LTMS"). The LTMS is a fifty year plan to manage dredged material, dredging and disposal activities in San Francisco Bay. As part of the LTMS, guidelines and work windows for dredging have been developed to avoid and minimize impacts to physical and biological resources in the Bay. Table 1 shows the work windows approved as part of the LTMS for Central San Francisco Bay, which includes the subtidal waters along the City of Belvedere. Based on LTMS work windows for the Central San Francisco Bay, dredging can occur in the City of Belvedere from June through October with no consultation with NMFS and CDFG required. Dredging may also happen in other months but would require consultation.

Richardson Bay Special Area Plan

The Richardson Bay Special Area Plan (BCDC 1984) describes additional regulations that limit activities in Richardson Bay. The Plan is implemented by BCDC and five local governments, including the City of Belvedere. The goal of the Special Area Plan is to protect natural resources

Table 1. Work windows applicable to waters offshore of the City of Belvedere (summarized from LTMS).

Species	Jan 1-31	Feb 1-28	Mar 1-31	Apr 1-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-30	Dec 1-31
Chinook Salmon and Steelhead (NMFS)	CONSULTATION REQUIRED					WORK WINDOW						CONSULTATION REQUIRED
Coho Salmon	CONSULTATION REQUIRED					WORK WINDOW					CONSULTATION REQUIRED	
Pacific Herring (CDFG)	CONSULTATION REQUIRED		WORK WINDOW									CONSULTATION REQUIRED
In Areas with Eelgrass Beds or Oysters (CDFG and NMFS)	CONSULTATION REQUIRED											

WORK WINDOW

CONSULTATION REQUIRED

in the region by effectively managing aquatic and wildlife resources and water quality; navigation channels, marinas, anchorages, and moorages; dredging and spoils disposal; residential vessels and floating structures; public access, views, and vistas; tidal restoration and marsh enhancement. This Plan has also incorporated into its management strategy the existing Audubon Society's Richardson Bay Wildlife Sanctuary restrictions, which prohibit boat traffic and in-water activities within Sanctuary boundaries from October 1st through March 31st.

Richardson Bay Dock and Boat Study

In 2000, the Marin County Board of Supervisors also adopted recommendations regarding dock development and boat traffic as described in the Richardson Bay Dock and Boat Study report by Zitney and Associates (Zitney 2000). The report presents an assessment of the cumulative effects of dock development and boat traffic on wildlife resources found in the Richardson Bay Wildlife Sanctuary. This study included only a portion of the City of Belvedere's shoreline, along San Rafael Avenue and the northernmost 1000 feet of West Shore Drive; however, recommendations regarding dock design, mitigation requirements, justification for approval or denial of development activities can be used as policy guidelines.

The Richardson Bay Dock and Boat Study advocates stronger enforcement, improved signage, and the distribution of educational materials to maintain the Richardson Bay Wildlife Sanctuary restrictions and boundaries. The study also recommends that dock construction should be prohibited along the northern shore of Richardson Bay and the southern portion of Strawberry Lagoon, where dredging and development would affect important bird habitat. However, the study also found that dock construction may be justifiable in other areas within the Bay where the shoreline is already heavily impacted by development, and if the construction of a dock site would not significantly increase boat traffic. The study also recommends that dock plans should only be approved if they incorporate mitigation measures required for recently approved docks in the area as well as mitigation measures to "create, expand and/or enhance natural shoreline habitats (marsh, mudflat) along the shoreline of the private property for which the dock is approved". If this is not considered feasible, offsite mitigation should be required for loss of sensitive habitat as a result of dock construction.

4.0 EXISTING HABITAT CONDITIONS

This section provides background information about biological resources in the City of Belvedere. As described in Section 2.0, the City is generally urbanized, and does not contain large expanses of open space that can be utilized by most special status plant and wildlife species. Terrestrial habitat is fragmented and has been greatly altered from its native state. Belvedere Lagoon is considered low-quality habitat for biological resources. The pump station does not generally allow for safe and effective passage of fish species into and out of the lagoon. In addition, the residential use and treatment of the Lagoon with dyes to control algal growth reduces the viability of aquatic habitat in Belvedere Lagoon. The primary biological resources of concern in Belvedere are the fully aquatic communities which are known to occur along the shoreline and in the waters of San Francisco Bay.

Table 2 provides a list of special status species documented in the CNDDB (CDFG 2008a) to occur in the immediate vicinity of Belvedere, including the larger Tiburon Peninsula. Though these species are known to occur near the City of Belvedere, most of them are not likely to be present due to urbanized conditions. Due to the urban nature of the City of Belvedere, a CNDDB search covering portions of the San Quentin and San Francisco North USGS 7.5' quadrangles, as opposed to a full 9 quadrangle search, was performed to develop a list of

species with potential to be present. This limited search is sufficient to provide coverage of special status species presence in the Plan Area, given the degree of urbanization present. Sensitive aquatic species have also been documented in the vicinity but do not appear on this list because there are no documented occurrences in CNDDB. Two of these species, eelgrass and Olympia oysters, have no designated federal or state status but both play important roles in the ecology of San Francisco Bay. Olympia oysters are a species of local concern, and both species are considered Essential Fish Habitat and therefore afforded protection under NMFS regulations. Sensitive aquatic species are discussed in more detail in Section 4.1.2, below.

Table 2. Special status species documented to occur in Belvedere and the Tiburon Peninsula (CDFG 2008a).

Species Name	Common Name	Habitat Suitability in Plan Area
Wildlife		
Pallid Bat *Antrozous pallidus*	SSC	**Suitable**. Abandoned structures, attics and hollows in trees may provide habitat.
Salt-marsh Harvest Mouse *Reithrodontomys raviventris*	FE, SE	**Unsuitable**. Requires salt marsh habitat. No salt marsh is present in the City of Belvedere.
San Francisco Common Yellowthroat *Geothlypis trichas sinuosa*	SSC, BCC	**Unsuitable.** Species utilizes tidal salt marsh vegetation communities as nesting and foraging habitat. No such habitat is present in the Plan Area. Species may occasionally pass through the Plan Area during movement and migration.
California Black Rail *Laterallus jamaicensis coturniculus*	ST, BCC	**Unsuitable.** Species utilizes tidal salt marsh vegetation communities as nesting and foraging habitat. No such habitat is present in the Plan Area. Species may occasionally pass through the Plan Area during movement and migration.
San Pablo Song Sparrow *Melospiza melodia samuelis*	SSC, BCC	**Unsuitable.** Species utilizes tidal salt marsh vegetation communities as nesting and foraging habitat. No such habitat is present in the Plan Area. Species may occasionally pass through the Plan Area during movement and migration.
California Clapper Rail *Rallus longirostris obsoletus*	FE, SE	**Unsuitable.** Species utilizes tidal salt marsh vegetation communities as nesting and foraging habitat. No such habitat is present in the Plan Area. Species may occasionally pass through the Plan Area during movement and migration.
California Red-legged Frog *Rana draytonii*	FT, SSC	**Unsuitable.** Species utilizes freshwater ponds and pools that hold water for a minimum of 20 weeks per year. No such habitat is present in the Plan Area. Available freshwater habitat is either managed, too fast-moving, or does not hold water for a sufficient duration. Additionally, high salinity levels likely prohibit this species from inhabiting Belvedere Lagoon.
Plants		
Tiburon mariposa lily *Calochortus tiburonensis*	List 1B	**Unsuitable.** Species occurs in serpentine grasslands. Undeveloped serpentine grasslands are not present in the City of Belvedere.
Tiburon Indian paintbrush *Castilleja affinis spp. neglecta*	FE, ST, List 1B	**Unsuitable.** Species occurs in serpentine grasslands. Undeveloped serpentine grasslands are not present in the City of Belvedere.

Table 2. Special status species documented to occur in Belvedere and the Tiburon Peninsula (CDFG 2008a).

Species Name	Common Name	Habitat Suitability in Plan Area
Point Reyes bird's-beak *Cordylanthus maritimus ssp. palustris*	List 1B	**Unsuitable**. Species occurs in tidal marsh habitat. No tidal marsh is present in the City of Belvedere.
Tiburon buckwheat *Erigonum luteolum var. caninum*	List 1B	**Unsuitable.** Species occurs in serpentine grasslands. Undeveloped serpentine grasslands are not present in the City of Belvedere.
Marin western flax *Hesperolinon congestum*	FT, ST, List 1B	**Unsuitable.** Species occurs in serpentine grasslands. Undeveloped serpentine grasslands are not present in the City of Belvedere.
Tiburon jewelflower *Streptanthus niger*	FE, SE, List 1B	**Unsuitable.** Species occurs in serpentine grasslands. Undeveloped serpentine grasslands are not present in the City of Belvedere.

*** Key to status codes:**
Status codes used above are:
FE - Federal Endangered
FT - Federal Threatened
SE - State Endangered
ST - State Threatened
SSC - CDFG Species of Special Concern
SLC - CDFG Species of Local Concern under CEQA
BCC - Fish and Wildlife Service: Birds of Conservation Concern
List 1B - CNPS 1B List, Endangered, Threatened, or Rare in California

4.1 Special Status Species

4.1.1 Terrestrial and Avian Species

As described in Section 2.2 above, the existing development within the City of Belvedere limits the value of terrestrial areas as habitat for special status plant and wildlife species. However, a number of special status bird and bat species do have the potential to be present. The Plan Area contains mature trees which may provide breeding habitat and shelter for bird and bat species. Additionally, bats may roost in man-made structures such as buildings, which are abundant in the Plan Area. Bats provide a number of ecological benefits including pollination and insect control.

Pallid Bats (a state Species of Special Concern) could occur in abandoned structures, attics, or hollow cavities in trees within the city. The nearest occurrence of a Pallid Bat is approximately seven miles north of Belvedere (CDFG 2008a). This species typically roosts in crevices in rocky outcrops and cliffs, caves, mines, trees, and can also use various man made structures such as bridges, barns, porches, bat boxes, and human-occupied as well as vacant buildings. Roosts generally have unobstructed entrances and are high above the ground, warm, and inaccessible to terrestrial predators. Some man made structures and large oak trees may provide habitat for this species. However, bat roost habitat available is considered low-quality as it is subject to high levels of human disturbance. Well maintained structures are generally not considered suitable bat habitat.

A number of species listed in Table 2 are dependant on salt marsh communities, which are not present in the City of Belvedere. These species include the Salt Marsh Harvest Mouse, and a number of bird species: San Pablo Song Sparrow, California Clapper Rail, California Black Rail, and San Francisco Common Yellowthroat. Though San Pablo Song Sparrow, California Clapper Rail, California Black Rail, and San Francisco Common Yellowthroat may occasionally pass

through the City of Belvedere, no tidal marsh habitat is present to provide breeding, feeding, or sheltering habitat for these species.

However, existing trees within the City of Belvedere could provide suitable nesting habitat for other bird species protected by the Migratory Bird Treaty Act. A variety of bird species protected by the MBTA have the potential to nest in native and non-native trees and shrubs within the Plan Area.

California Red-legged Frog (CRLF) is not likely to be present in the Plan Area. Suitable aquatic breeding habitat for the CRLF consists of standing bodies of fresh water (with salinities less than 7.0 ppt), including: natural and man-made ponds, slow moving streams or pools within streams, and other ephemeral or permanent water bodies that typically become inundated during winter rains and hold water for a minimum of 20 weeks in all but the driest of years (USFWS 2006). Though the city does contain one stream and some man-made ponds, these are not suitable for CRLF. The intermittent stream is shallow, fast-moving, and does not carry water consistently enough to provide suitable breeding habitat within the Plan Area. In addition, the stream flows through only a small developed portion of the Plan Area. Man-made ponds within the city consist of stormwater basins and shallow landscape features. These ponds are typically heavily managed or do not hold water for a long enough period to provide suitable habitat. Belvedere Lagoon contains varying concentrations of water from San Francisco Bay over the course of the year as water is pumped from the Bay to maintain water levels during the summer months. This management likely prohibits use of the lagoon by CRLF due to elevated salinity levels.

Tiburon jewelflower, Tiburon Indian paintbrush, Tiburon buckwheat, Tiburon mariposa lily, and Marin western flax are all species that occur in serpentine grassland areas. Point Reyes bird's-beak is a tidal marsh species. Undeveloped serpentine grasslands and tidal marsh habitats are not present in the City of Belvedere; therefore, these species are not likely to occur in the Plan Area.

4.1.2 Aquatic Species

Several special status fish species are known to occur in the waters surrounding Belvedere, including:

- Chinook Salmon
- Steelhead Trout (Central California Coast ESU)
- Green Sturgeon
- Pacific Herring

The San Francisco Bay supports runs of Chinook Salmon (*Oncorhynchus tshawytscha*) and Steelhead Trout (*Oncorhynchus mykiss*). Recent salmonid tracking studies done as part of the LTMS Science Work Group have indicated that Raccoon Strait is a primary movement corridor for these species. However, no known salmonid bearing streams are present in the City of Belvedere. Arroyo Corte Madera Creek (see Figure 2) has documented Steelhead runs (Leidy et al. 2005a) as well as historic documented events with other salmonid species (Leidy et al. 2005b). Although no salmonid spawning grounds exist within either Richardson Bay or Belvedere Cove, migrating adults and sub-adults may utilize these waters for foraging. Smolts and sub-adults use the protective habitat and rich food source found within eelgrass beds for development and growth on their way out to the open ocean (Pinnix et al. 2004; Johnson et al. 2003). Chinook Salmon and Steelhead Trout have been documented to occur in the vicinity of Belvedere (NOAA 2007, CalFish 2008).

The Southern Distinct Population Segment of North American Green Sturgeon (*Acipenser medirostris*) is known to occupy coastal bays and estuaries, including San Francisco and San Pablo Bays. The waters within and surrounding the Plan Area provide suitable rearing, feeding, and migratory habitat for juvenile and adult Green Sturgeon, though no spawning habitat has been documented within in the Plan Area or vicinity. NMFS has proposed the designation of Raccoon Straight and Belvedere Cove as Critical Habitat for this population (NMFS 2008a). Note that the federal listing of Green Sturgeon and the proposed designation of Critical Habitat have occurred recently, and the LTMS work window covering Green Sturgeon has not yet been established.

Although Pacific Herring (*Clupea pallasi*) are not covered under the NMFS EFH regulations, CDFG regulates this species as a fishery of commercial importance. San Francisco Bay provides breeding and rearing habitat for Pacific herring (NOAA 2007, CDFG 2008b). Breeding occurs between December and March. Eggs are attached to substrate such as eelgrass, rip rap, or other similar material. Eelgrass within Richardson Bay has been documented as important spawning habitat for Pacific Herring (Watters et al. 2004).

Although Coho Salmon (*Oncorhynchus kisutch*) have been documented within San Francisco Bay, they are now considered extirpated from the region by NMFS (personal communication, D. Woodbury, NMFS). As a result, the LTMS work window covering Coho Salmon is not currently implemented for projects in the vicinity of the City of Belvedere.

4.2 Other Biological Communities

4.2.1 Eelgrass

Eelgrass is a vascular plant that grows at and below the elevation of Mean Lower Low Water (MLLW). It is known to provide foraging, shelter and breeding habitat for many species of marine life, including Pacific Herring and Pacific Harbor Seal (*Phoca vitulina*). Eelgrass beds provide both habitat structure and a primary trophic food source for many marine species. Based on the habitat value provided by eelgrass beds, they are considered Essential Fish Habitat by the NMFS, and are also regulated by the California Department of Fish and Game. In addition, eelgrass beds are considered a "Special Aquatic Site" by regulations pertaining to the Clean Water Act, and are therefore regulated by the Corps. Appendix A contains a detailed life history description for eelgrass and its distribution along the shores of the City of Belvedere and greater San Francisco Bay.

Eelgrass near Belvedere and on the Tiburon peninsula tends to grow in sheltered coves away from the strong currents that can occur in the area (see Figure 4). Studies in Kiel Cove, near the Plan Area on the Tiburon peninsula, measured turbidity as among the lowest recorded in the Bay, increasing the depth at which eelgrass is typically able to grow (Zimmerman et al. 1991, 1995). Eelgrass has been mapped along the shoreline of the City of Belvedere during a recent Baywide Eelgrass Inventory of San Francisco Bay by Merkel and Associates (2003) and in focused surveys conducted by WRA, Inc in Belvedere Cove and along the City's western shoreline. As of 2008, WRA has completed 13 surveys for eelgrass over 9 separate sites along the Belvedere shoreline. These surveys, together with the Baywide Eelgrass Inventory of San Francisco Bay, were used as the basis for the eelgrass distribution shown in Figure 4.

4.2.2 Oysters

The Olympia Oyster (*Ostrea conchaphila*, formerly *O. lurida*) is the only native oyster found along the Pacific Coast. Oysters are filter feeders that may contribute to water quality and

Figure 4. Known Locations of Eelgrass (*Zostera marina*) along the Shoreline of the City of Belvedere

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Date: October 2008
Map By: Chris Zumwalt
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clarity, allowing more light to penetrate the water column. This increased light penetration may support submerged aquatic vegetation, such as eelgrass. Olympia oyster habitat is highly varied but typically includes estuaries, small rivers and streams. Along the Pacific Coast, Olympia oyster beds are typically formed in the subtidal zone; however, in the San Francisco Bay, live beds occur primarily in the intertidal zone (NOAA 2007). Here, they may attach to the underside of rocky substrate where the bottom is gravel or rock, or on the upper sides of rocks where the bottom is muddy (Kozloff 1993).

The growth of oysters in the intertidal zone in San Francisco Bay is likely a function of the availability of attachment substrate. Subtidal oyster colonies have been observed in limited locations and have been established as part of restoration efforts around the Bay. The majority of subtidal habitat in San Francisco Bay is comprised of mudflat, which lacks the hard surface that is required for oyster attachment. In the Bay, this hard substrate is most often associated with rip rap or other shoreline armoring, piers and support piles, and in some areas, natural rocky shorelines. An additional environmental stressor on Olympia Oysters in San Francisco Bay is the presence of the non-native Oyster Drill (*Urosalpinx cinerea*), a small snail that preys upon oyster colonies.

Olympia oyster colonies have been observed along the Tiburon/ Belvedere shoreline and in the vicinity, including the shorelines of Richardson Bay, San Francisco, and Angel Island (Grosholz et. al 2007, NOAA 2007). The presence of native oysters has been established along the San Rafael Avenue Seawall in Belvedere (Grosholz et. al 2007, NOAA 2007, WRA 2008), which indicates that additional rocky intertidal areas along the Belvedere shoreline could potentially provide suitable oyster habitat. In the North Bay, Olympia oyster restoration sites have been established at Bair Island, Marin Rod and Gun Club, and in northern Richardson Bay (NOAA 2007). Figure 5 shows the location of known native oysters along the San Rafael Avenue seawall in the Plan Area.

4.2.3 Wetlands, Waters, and Riparian Habitat

The term stream, which includes creeks and rivers, is defined in the California Code of Regulations (CCR) as follows: “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation” (14 CCR 1.72). In addition, the term stream can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife (CDFG ESD 1994). Riparian is defined as, “on, or pertaining to, the banks of a stream;” therefore, riparian vegetation is defined as, “vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself” (CDFG ESD 1994).

Only two streams are known to occur in Belvedere. One originates from the hillside north of Tiburon Boulevard and empties into a stormwater basin before flowing through a drop structure and culvert into Belvedere Lagoon. Belvedere Lagoon and the stormwater basin are significant barriers that would prevent fish from entering the stream from the Bay. The second stream appears on NWI maps and flows through the western edge of the city at San Rafael Avenue and Tiburon Boulevard.

Due to the urban setting, these streams do not provide especially high habitat value on a regional scale. However, on a local scale, streams and riparian habitat are of very limited distribution, and provide habitat that is not widely available, increasing their local habitat value. Although these streams are small in size, and have only intermittent flow, they still function as

Figure 5. Olympia Oyster (*Ostrea conchaphila*) Colonies in the City of Belvedere

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Map By: Chris Zumwalt
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habitat for wildlife (such as bird species), and still provide water quality and flood control benefits provided by larger streams. Riparian vegetation greatly increases the value of stream habitat by providing protective cover for wildlife species, stabilizing streambanks and floodplains, and maintaining water temperatures by providing shade.

"Waters of the U.S." are defined broadly as waters susceptible to use in commerce, including interstate waters and wetlands, all other waters (intrastate waterbodies, including wetlands), and their tributaries (33 CFR 328.3). Potential wetland areas, according to the three criteria used to delineate wetlands stated in the Corps of Engineers Wetlands Delineation Manual (1987), are identified by the presence of (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. The term "Waters of the State" is defined by the Porter-Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." RWQCB jurisdiction includes "isolated" wetlands and waters that may not be regulated by the Corps under Section 404.

No wetlands are mapped as present on the USFWS National Wetlands Inventory (NWI) maps, and none are known to be present in the Plan Area. The NWI maps provide baseline information regarding documented waters and wetlands of the U.S. The NWI maps show unconsolidated shoreline off the shore of the City of Belvedere, as well as deepwater marine habitats and the Belvedere Lagoon, which has been classified as a Lake (USFWS 2008).

5.0 GENERAL PLAN POLICY RECOMMENDATIONS

This section contains recommendations for General Plan Policies covering sensitive biological resources in the City of Belvedere. These recommendations have been organized into four general categories:

- San Francisco Bay and shoreline development activities;
- Development activities near streams and riparian habitat;
- Activities in and around Belvedere Lagoon; and
- Other activities with the potential to affect biological resources.

These categories were developed based on the types of development activities reasonably expected to occur within the Plan Area at the time of the General Plan update. Section 2.4 provides examples of these types of development activities.

5.1 San Francisco Bay and Shoreline Development Activities

Development activities included in this section are those that take place within shoreline, intertidal, and subtidal habitat in the Bay. All development activities described in this section have the potential to affect valuable eelgrass and oyster habitats; therefore, this section contains development activities of highest concern to the City of Belvedere. These activities may include: pile replacement, installation, and reinforcement for structures built over water; installation and expansion of piers, docks, and boat hoists; dredging of existing channels, potential dredging of the West Shore Channel, shoreline stabilization, and sea wall maintenance and replacement. General recommendations for dredging and dock installation follow the discussion of eelgrass and oysters. The following agencies regulate shoreline development activities in Belvedere:

- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- California Department of Fish and Game

- National Marine Fisheries Service
- San Francisco Bay Regional Water Quality Control Board
- San Francisco Bay Conservation and Development Commission

Depending on the project activity, permits may need to be obtained from the Corps, RWQCB, and BCDC. As part of the permitting process, consultation with NMFS, CDFG, and/or USFWS may need to occur.

5.1.1 Activities in Areas Containing Eelgrass

Consultation (formal or informal) with NMFS and CDFG may be required for any project with potential impacts to eelgrass. Mitigation measures required by the City of Belvedere should be consistent with current NMFS and CDFG policies and flexible enough to allow modification by these agencies during the permitting process.

Policy Recommendation #1: If a proposed development project appears to be located in or near established eelgrass beds, surveys are recommended to establish more specific eelgrass locations. Eelgrass surveys should be conducted during the eelgrass growing period, generally May 15 to October 1. Figure 4 shows the locations of known eelgrass beds and should be used as a tool to determine the potential for individual projects to affect eelgrass.

Policy Recommendation #2: If surveys document the presence of eelgrass in or near a project area, projects should be designed to avoid impacting areas with eelgrass beds and patches. Impacts to small numbers of isolated eelgrass individuals may be allowed based on determinations made by a qualified biologist and applicable environmental resource agencies. Isolated eelgrass individuals are typically ephemeral in nature within the Plan Area and do not typically provide the habitat benefits associated with larger contiguous beds and patches.

Policy Recommendation #3: Construction of permanent structures, such as piers and docks, should be designed to maximize the amount of sunlight available to eelgrass below. If a dock or pier will be constructed in or near an area containing eelgrass, these structures should be designed to avoid and minimize impacts to eelgrass. Potential measures to minimize impacts to eelgrass are discussed below. Other minimization measures may be considered based on best available science and approved by applicable regulatory agencies. The feasibility of these measures should be evaluated by the project engineer or designer to ensure that implementation would not affect dock safety or stability.

Dock Height and Orientation: There are several considerations that can be integrated into dock and pier design to limit impacts to eelgrass, including height, width, orientation, and deck material. These recommendations are based on an analysis conducted by Burdick and Short (1998). The authors recommend minimizing the area of floating docks and using fixed docks where feasible. Fixed docks should be narrow, with a height of at least three meters (9.8 feet) above the marine bottom and an orientation of 10 degrees within a North/South orientation, where feasible. Burdick and Short (1998) also recommend measures such as shared docks, seasonal docks with removable decking on fixed pilings, and placement of floating docks outside areas where eelgrass can grow (seaward of the lower depth limit for eelgrass growth).

Currently, Belvedere City Code limits dock height to no further than 10 feet above 0 feet MLLW and does not include specifications for orientation or width. To minimize impacts to eelgrass, the maximum specified dock height should be increased with respect to dock orientation to allow for minimization of impacts to eelgrass.

Dock Materials: Blanton, et al (2002) have shown that the use of slotted materials in deck surfaces can be effective at reducing the effects of shading on eelgrass beneath docks. These studies also found that the use of reflective material beneath docks can be effective at reducing shading effects on eelgrass. However, the use of reflective material requires maintenance, and could result in debris falling into the Bay during storms. Therefore, use of reflective material is not recommended as a minimization measure.

Policy Recommendation #4: If an eelgrass bed or contiguous patch is present in or near a project area and impact avoidance and minimization measures are not feasible, impacts to eelgrass within the project area should be mitigated. Mitigation methods should be based on the best available science. Suitable mitigation includes transplantation of shoots or use of seed buoys. Mitigation should be implemented in nearby areas that are determined to be suitable eelgrass habitat by a qualified biologist. Transplantation occurring during the summer or early fall has shown to be more successful than transplantation at other times of the year (Merkel and Associates 2004). A detailed mitigation plan, with appropriate success and monitoring criteria, should be developed in consultation with NMFS and CDFG prior to impacting eelgrass. A permit from CDFG is required prior to transplantation of eelgrass.

5.1.2 Activities in Areas Containing Oysters

Consultation (formal or informal) with NMFS and CDFG may be required for any project with potential impacts to Olympia oysters. Mitigation measures required by the City of Belvedere should be consistent with current NMFS and CDFG policies and flexible to allow modification by these agencies during the permitting process.

Policy Recommendation #5: If a proposed development project is located in or near oyster habitat, surveys are recommended to establish presence or absence and to determine whether further consultation is necessary. Specific development activities that may affect oyster habitat include pier and pile replacement, removal of rocky intertidal material from the shoreline and Bay, and covering existing rocky intertidal habitat with materials unsuitable for oyster colonization. Figure 5 shows the locations of known Olympia oyster colonies and should be used as a tool to determine when surveys are needed.

Policy Recommendation #6: If shoreline development activities take place in or near an area known to contain Olympia oysters, impact avoidance measures should be implemented to the extent feasible. Project plans should be designed to avoid impacting areas with Olympia oyster colonies. Where complete avoidance of oyster colonies is not feasible, impact minimization measures should be implemented. Impacts can be minimized for certain development activities by using materials suitable for oyster colonization. As described in section 4.2.2, oysters colonize hard substrates that are submerged for at least a portion of the day. Activities that decrease the surface area of hard substrate in the intertidal and subtidal zones will decrease the amount of habitat available to oysters. For example, pouring concrete over structurally complex features such as rocks, rip rap and shells will decrease the overall surface area of hard substrates and therefore reduce the available habitat. Oysters are capable of colonizing concrete, but the lack of structural complexity makes concrete a less desirable building material for development activities in the Bay.

Alternatively, rip rap may be used in shoreline and subtidal development to minimize impacts to oysters. When rip rap is added to existing rip rap structures, such as the San Rafael Avenue Seawall, there is a net increase in the surface area of hard substrate and oyster habitat is actually increased. Following a local oyster spawning event, juvenile oysters sink out of the water column and can begin colonizing the new rip rap.

Policy Recommendation #7: If native oysters are present in or near a project area and impact avoidance and minimization measures are not feasible, restoration of oyster habitat or another feasible mitigation measure should be implemented. Mitigation should be based on the best available science. Empty oyster shells have been used in successful oyster restoration efforts in the San Francisco Bay (NOAA 2007). Other hard surface substrates have been successfully used to facilitate colonization, and could also be considered. For projects in Belvedere that may reduce native oyster habitat, this restoration technique should be considered as an option to mitigate for habitat loss.

5.1.3 Dredging Activities

The following section provides recommendations for dredging activities within areas potentially containing eelgrass and Olympia oysters. Recommendations specific to dredging activities should be followed in addition to general policies for activities in areas containing eelgrass and oysters outlined above in Sections 5.1.1 and 5.1.2.

Policy Recommendation #8: Avoidance measures to prevent dredging-related, adverse effects to sensitive biological communities generally consist of seasonal work windows. To avoid potential impacts to Pacific Herring, Steelhead Trout, and Chinook Salmon migrating through the Bay, dredging should occur between June 1 and November 31. If Coho Salmon become re-established in San Francisco Bay, the work window should be modified to June 1 through October 31. Dredging may be possible outside of these work windows if allowed by applicable resource agencies as part of the permitting process.

Policy Recommendation #9: The Conceptual West Shore Channel dredging project would occur in Richardson Bay along West Shore Drive, where eelgrass beds have consistently been documented to occur. Dredging in this area will be restricted due to the presence of eelgrass and important migratory bird habitat in the Richardson Bay Wildlife Sanctuary. If the West Shore Channel is dredged, dredging should be designed to avoid eelgrass present in the area. Dredging and boat activities along the West Shore Channel should also comply with Sanctuary restrictions. Consultation with NMFS and DMMO may be required prior to the initiation of dredging activities.

Policy Recommendation #10: The City should remain updated on the status of potential avoidance and mitigation measures related to the Green Sturgeon. Currently, NMFS is developing guidelines covering Green Sturgeon that may affect dredging projects. These guidelines are expected to be finalized by the end of 2009.

5.1.4 Dock, Pier, and Pile Installation

The following section provides recommendations for dock, pier, and pile installation in the Plan Area. Recommendations specific to dock, pier, and pile installation should be followed in addition to general policies for activities in areas containing eelgrass and oysters outlined above in Sections 5.1.1 and 5.1.2.

Policy Recommendation #11: Depending on the construction methodology used, installation of pilings has the potential to result in impacts to aquatic resources in San Francisco Bay. In December 2007, a programmatic consultation (known as the “Not Likely to Adversely Affect” consultation) was issued by the Corps, NMFS, and USFWS. The NLAA consultation contains guidelines that cover small activities, including the installation of pilings, in San Francisco Bay and other locations in California. To avoid potential impacts, general dock, pier, and pile installation activities should follow these guidelines to the extent feasible:

- Installation of any number of steel, wood, or concrete piles may be done at any time of year, as long as a vibratory hammer is used during installation.
- If it is necessary to use an impact hammer:
    - Any size wood pile may be installed at any time of year.
    - Concrete piles may be driven at any time of year as long as the pile diameter is less than 45.7 cm (18 in).
    - Steel piles may be installed at any time of year as long as the piles are 30.5 cm (12 in) or less in diameter, the impact hammer is 3,000 pounds or smaller, and a wood cushion is used between the hammer and the pile.
- Use of an impact hammer is limited to one hammer and less than 50 piles installed per day.
- If wood piles are used, they must be coated with an impact resistant, biologically inert substance. No creosote treated materials are permitted under the consultation.
- Floatation devices (such as used on a floating dock) must be composed of materials that will not disintegrate, such as plastic or closed cell foam encapsulated in sun-resistant polyethylene.
- Decking may be composed of plastic or non-reactive substance, such as epoxy wood. No creosote treated materials are permitted under the consultation.
- Deck installation may occur between June 15 and November 30 in San Francisco Bay.

The measures listed above are currently considered sufficient to avoid and minimize potential significant impacts to aquatic resources from dock, pier, and pile installation. Should new guidelines be established by applicable permitting agencies, the projects within the Plan Area should implement those newer guidelines. CDFG should also be consulted if dock, pier or pile installation is undertaken during the Pacific Herring spawning season, from December 1 through March 1.

5.2 Development Activities Near Wetlands, Waters, and Riparian Habitat

Development activities included in this category are those that have the potential to affect wetlands, streams, and riparian habitat as defined in Section 4.2.3. These activities may include, but are not limited to: existing home remodeling and expansion; rebuilding homes on existing developed lots; and public park redevelopment. The following agencies regulate development activities near streams, wetlands and riparian habitat:

- U.S. Army Corps of Engineers
- California Department of Fish and Game
- San Francisco Bay Regional Water Quality Control Board

Consultation with the Corps, RWQCB and CDFG should occur prior to alteration of streams and riparian habitat. The Corps and RWQCB have jurisdiction over activities that affect wetlands. The San Francisco Bay Conservation and Development Commission also regulates development activities near wetlands, streams, and riparian habitat, but BCDC jurisdiction is limited to areas where these features occur within 100 feet landward of the elevation of five feet above mean sea level.

The City of Belvedere is largely developed and generally does not contain many areas where wetlands may potentially occur. The majority of wetlands in the city would occur along existing streams, and guidelines for development activities occurring in those areas would be covered under the stream setbacks.

Policy Recommendation #12: Projects should avoid impacts to streams and riparian habitat to the extent feasible. Development activities that would take place near stream and riparian habitats may require stream setbacks to protect habitat functions. In the majority of the Plan Area, parcels are less than 0.5 acres. For parcels that are less than 0.5 acres, a 20 foot setback from streams and riparian areas is recommended. Stream setbacks of 50 feet are recommended for parcels that are more than 0.5 acres. Stream setbacks are to be measured from the top of bank or edge of the riparian canopy (whichever is further). This aligns the City of Belvedere with the riparian and stream setback policy governing unincorporated areas of Marin County. Maintenance, repair, and replacement of existing structures within the setback, as well as the restoration and enhancement of stream and riparian habitat should be allowed to occur within stream setback areas, as long as the activity would not result in impacts to streams, wetlands, or riparian habitat.

Policy Recommendation #13: Impacts to wetlands should be avoided. Where wetlands occur along streams and riparian areas, the wetland should be incorporated into the determination of appropriate stream setback distance. If a project has the potential to impact wetlands, a permit may need to be obtained from the Corps, and mitigation at a minimum of a 1:1 ratio for wetland impacts may be required, as determined by the Corps.

5.3 Belvedere Lagoon

Development activities that may affect the waters of the Lagoon may require residents to provide notification of proposed activities to the RWQCB and Corps. These agencies may also require residents to provide delineation reports and/or apply for permits under the Clean Water Act and State of California Porter-Cologne Act. BCDC does not have jurisdiction over activities affecting the waters within the Lagoon. Consultations regarding plant and wildlife issues within the Lagoon will likely be unnecessary because development activities that take place in the waters of the Lagoon are generally not likely to affect any sensitive aquatic species or habitat for sensitive aquatic species.

Policy Recommendation #14: The City of Belvedere should continue to look into ways to manage the Lagoon using the most effective, environmentally friendly methods available. No sensitive species are likely to occur in the Lagoon. However, waters of the Lagoon empty into Richardson Bay and effects of this exchange of waters to surrounding areas should be considered in making management decisions for the Lagoon. The City's use of non-toxic dyes is currently the most environmentally friendly management practice to control algal growth with minimal impacts to sensitive biological resources in the Bay.

Policy Recommendation #15: The use of non-toxic weed and pest controls should be encouraged on lawns and landscaping, particularly in areas surrounding the Lagoon. The City should also encourage minimizing the use of fertilizers, particularly in areas surrounding the Lagoon.

5.4 Other Sensitive Species

Terrestrial habitat in the City of Belvedere is generally considered low-quality habitat for most special status species due to human disturbance, urban development, and habitat fragmentation. Therefore, there is little potential for sensitive, terrestrial plants and wildlife to occur in the City. Several special status and common avian and bat species have adapted to urban environments and have the potential to occur within the City. Impacts to these species should be avoided.

Although special status bird species are unlikely to occur in Belvedere, most birds in the United States, including many non-special status species, are protected by the Migratory Bird Treaty Act of 1918. Under this legislation, destroying active nests, eggs, and young is illegal. As a result, precautions should be taken before and during construction to ensure no harm or harassment of avian species.

Policy Recommendation #15: To avoid potential impacts to bat roosts, removal or demolition of potential bat roost habitat should occur during September and October, after maternity roosts disband and before hibernation begins. If removal or demolition is not feasible within this window, a qualified biologist should conduct pre-construction roost surveys, and any active roosts found in the project area should not be disturbed until the roost disbands.

6.0 REFERENCES

Blanton, S., R. Thom, A. Borde, H. Diefenderfer, J. Southard. 2002. Evaluation of Methods to Increase Light Under Ferry Terminals. Battelle, Pacific Northwest Division of Battelle Memorial Institute. Sequim, Washington.

Burdick, D.M. and Short, F.T., 1998, Dock Design with the Environment in Mind: Minimizing Dock Impacts to Eelgrass Habitats. An interactive CD-ROM published by the University of New Hampshire, Durham, NH, USA.

California Cooperative Anadromous Fish and Habitat Data Program (CalFish). Fish Data and Maps. http://dnn.calfish.org/calfish2/FishDataandMaps/tabid/87/FishMaps/tabid/88/Default.aspx (October 2008).

California Department of Fish and Game. 2008a. Natural Diversity Database, Wildlife and Habitat Data Analysis Branch. Sacramento.

California Department of Fish and Game. 2008b. Pacific Herring in San Francisco Bay. Central Valley Bay Delta Branch. Stockton. http://www.delta.dfg.ca.gov/baydelta/monitoring/ph.asp (October 2008).

California Department of Fish and Game. Environmental Services Division (ESD). 1994. A Field Guide to Lake and Streambed Alteration Agreements, Sections 1600-1607, California Fish and Game Code.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Department of the Army, Waterways Experiment Station, Vicksburg, Mississippi 39180-0631.

Grosholz, E., Moore, J., Zabin, C., Attoe, S. and Obernolte, R. 2007. Planning for Native Oyster Restoration in San Francisco Bay. Final Report to California Coastal Conservancy Agreement # 05-134. http://www.des.ucdavis.edu/faculty/grosholz/GrosholzFinalReport05-134.pdf (September 2008).

Johnson, S. W., M. L. Murphy, D. J. Csepp, P. M. Harris, and J. F. Thedinga. 2003. A survey of fish assemblages in eelgrass and kelp habitats of southeastern Alaska. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-AFSC-139, 39 p.

Kozloff, E.N. 1993. Seashore life of the Northern Pacific Coast, an illustrated guide to Northern California, Oregon, Washington, and British Columbia. University of Washington Press; Seattle, Washington. 373 pp.

Leidy, R.A., G.S. Becker, B.N. Harvey. 2005a. Historical distribution and current status of Steelhead/rainbow trout (*Oncorhynchus mykiss*) in streams of the San Francisco Estuary, California. Center for Ecosystem Management and Restoration, Oakland, CA.

Leidy et al. 2005b. Historical Status of Coho Salmon in Streams if the Urbanized San Francisco Estuary, California. California Fish and Game 91(4): 219-254.

Merkel and Associates, Inc. 2003. San Francisco Bay Eelgrass Inventory. Submitted to CalTrans and NOAA Fisheries. June - October 2003.

Merkel and Associates, Inc. 2004. Final Report: Experimental eelgrass transplant program Emeryville Flats, San Francisco Bay. Investigations for on-site eelgrass mitigation. Prepared for CalTrans. March 2004.

NOAA National Marine Fisheries Service. 2007. Report on the Subtidal Habitats and Associated Biological Taxa in San Francisco Bay. Santa Rosa, California.

National Marine Fisheries Service. 2008. Office of Habitat Conservation Division. Essential Fish Habitat. http://www.nmfs.noaa.gov/habitat/habitatprotection/efh/index_a.htm (October 2008).

National Marine Fisheries Service. 2008a. Endangered and Threatened Wildlife and Plants: Proposed Rulemaking To Designate Critical Habitat for the Threatened Southern Distinct Population Segment of North American Green Sturgeon; Proposed Rule. Federal Register Vol. 73(174): September 8.

Pinnix, W. D., T. A. Shaw, and N. J. Hetrick. 2004. Fish communities in eelgrass, oyster culture, and mud flat habitats of North Humboldt Bay, California Progress Report. U.S. Fish and Wildlife Service, Arcata Fish and Wildlife Office, Arcata Fisheries Office Technical Report Number AFWO-F-07-04, Arcata, California.

San Francisco Bay-Angel Island to Point San Pedro [map]. 2005. Scale 1:20,000. “NOAA Nautical Chart On-Line Viewer - Pacific Coast”. NOAA Office of Coast Survey. http://www.charts.noaa.gov/OnLineViewer/18653.shtml (September 2008).

San Francisco Bay Conservation and Development Commission (BCDC). 1984. Richardson Bay Special Area Plan. http://www.bcdc.ca.gov/pdf/planning/plans/rbsap/rbsap.pdf

Seagrasses: Biology, Ecology and Conservation. 2006. Larkum, A.W.D., Orth, R.J., Duarte. C.M. (Eds). Springer.

U.S. Fish and Wildlife Service. 2008. National Wetlands Inventory. Branch of Habitat Assessment. http://wetlandsfws.er.usgs.gov/imf/imf.jsp?site=NWI_CONUS (October 2008).

Watters, D. L., H. M. Brown, F. J. Griffin, E. J. Larson, G. N. Cherr. 2004. Pacific Herring spawning grounds in San Francisco Bay: 1973-2000. Pages 3-14 in F. Fryrer, L. R.

Brown, and J. J. Orsi, editors. Early life history of fishes in the San Francisco Estuary and Watershed. American Fisheries Society, Symposium 39, Bethesda, Maryland.

WRA, Inc. 2008. San Rafael Avenue Seawall Oyster Survey Letter.

Zimmerman, R.C., J.L. Reguzzoni, S. Wyllie-Echeverria, M. Josselyn, and R.S. Alberte. 1991. Assessment of Environmental suitability for growth of *Zostera marina* (eelgrass) in San Francisco Bay. Aquatic Botany 39: pp. 353-366.

Zimmerman, R.C., J.L. Reguzzoni, R.S. Alberte. 1995. Eelgrass (*Zostera marina* L.) transplants in San Francisco Bay: Role of light availability on metabolism, growth and survival. Aquatic Botany 51:1-2 pp. 67-86.

Zitney, G.R. 2000. Richardson Bay Dock and Boat Study: The Cumulative Effects of Dock Development and Boat Traffic on Wildlife and the Richardson Bay Wildlife Sanctuary. Prepared for the County of Marin.

Appendix A. Biology and Ecology of Eelgrass and Olympia Oysters in San Francisco Bay

Appendix A. Biology and Ecology of Eelgrass and Olympia Oysters

1.0 Eelgrass

Life History

Eelgrass (*Z. marina*) is a submerged marine angiosperm that is found throughout soft-bottom bays and estuaries of the Northern Hemisphere. Common throughout the northern Pacific and Atlantic Oceans, the Pacific variety of *Z. marina latfolia* ranges from the Bering Sea to lower Baja California. Eelgrass is considered a habitat-building species, and is valued and utilized by many species of invertebrates, fish, reptiles, birds and mammals.

Eelgrass, which is a true plant and not a seaweed or algae, grows in intertidal and subtidal estuarine habitats. Dark green ribbon shaped leaves, known as shoots or vegetative growth, are typically 20-50 cm in length (exceptionally up to 2 m long) with rounded tips. Shoot length is a function of depth and light availability. Eelgrass shoots grow off of a creeping rhizome that binds bottom sediments, and during the growing season a new shoot is initiated approximately every 14 days. An individual rhizome may have many shoots and may persist for several years; however, individual shoots can only survive for two years (Seagrasses 2006).

Eelgrass reproduction and growth is very rapid in the spring and summer, and then drops off in the fall and winter when the plants generally enter a stage of dormancy. While temperature is believed to be an important contributing factor in the biotic response of eelgrass, light availability is the dominant limiting factor in eelgrass growth (Wyllie-Echeverria and Fonseca 2003). 15-22% of surface light must reach the sediment for eelgrass to grow (Granger et al. 2002). Two factors that greatly limit the distribution of eelgrass geographically and vertically within the Bay are light penetration, which is affected by phytoplankton density and turbidity in the water column, and the amount of dissolved oxygen in the water (Wyllie-Echeverria and Fonseca 2003). Research has shown that in as little as 20 days of reduced light conditions, eelgrass decline can begin (Seagrasses 2006).

In general, eelgrass growth is confined to waters less than 2 meters (6.6 feet) MLLW (Granger et al. 2002). Within San Francisco Bay, the majority of eelgrass growth is restricted to approximately -1.5 to 0 m MLLW; however, eelgrass has been documented to occur within Richardson Bay at a depth of -3 m MLLW (Merkel and Associates 2003). Extended periods of favorable light conditions and lower turbidity within the water column enable growth to occur at such depths.

Suitable benthic substrate can range in composition from mud to gravel. *Z. marina* has been shown to thrive in sandy sediments that have a maximum of 15% silt and clay particles and a maximum of 8% organic matter (Seagrasses 2006). Most of the substrate within the San Francisco Bay is comprised of a mix of sand, silt or clay, and fragments of oyster shells. Approximately 80% of the Bay bottom is a mix of silt and clay that forms a soft mud (NOAA 2007).

Within an estuary, salinity levels also influence eelgrass distribution. Eelgrass prefers waters with a salinity range of 21 to 31 ppt, or polyhaline waters (18 to 30 ppt). Salinity levels within estuarine systems can fluctuate depending on the amount of freshwater input, so eelgrass has adapted to handle salinity levels ranging from 10 ppt to seawater (Granger et al. 2002). While eelgrass can survive at lower salinity levels (10 to 20 ppt), photosynthetic productivity is reduced by 50%, indicating that prolonged periods of exposure to lower salinity levels is detrimental to eelgrass growth (Seagrasses 2006).

Tidal movement and currents are a vital component to eelgrass growth, as moving water transports nutrients and sediment. Eelgrass thrives in currents of 0.15 to 0.5 meters per second (m/s) (0.3 to 1 knots), but is able to endure a maximum velocity of 1.5 m/s (3 knots) (Granger et al. 2002). The complex tidal cycle within the San Francisco Bay enables a substantial amount of sediment transport. Tidal currents can exceed 2.8 m/s (5.4 knots) around the Golden Gate Bridge; however the tidal range shrinks with distance from the ocean. Tidal currents are far stronger in the channels than in the shallows, where tidal currents are generally <0.2 m/s, well within documented tolerance of *Z. marina* (NOAA 2007).

Habitat Function

Eelgrass meadows are known to be one of the most biologically diverse and productive habitats on earth. As a primary producer, eelgrass, coupled with epiphytic and benthic algae, serves as an abundant food source for organisms. Eelgrass forms structurally complex habitat that provides refugia from predation, and is often utilized as a nursery ground for many species (Williamson 2006). Studies have documented that the diversity and abundance of micro and macro fauna within eelgrass beds can be substantially higher than neighboring soft bottom substrate (Hemminga and Duarta 2000). Eelgrass also provides critical aquatic structure and spawning substrate for organisms.

Within the San Francisco Bay, eelgrass exhibits both isolated, more annual type growth patterns and perennial, bed-like patterns of growth. The differences between these growth patterns are important from the perspective of aquatic wildlife. Larger beds and patches at deeper elevations provide a higher density of attachment substrate for small primary producers (such as algae and small microorganisms), more cover, and contribute much more organic matter than smaller isolated patches and individuals. Eelgrass beds are also more consistent in location and abundance from year to year than isolated individuals and patches. The attributes of eelgrass beds provide a consistent food source, spawning habitat, and protective cover for marine life. Isolated, more annual eelgrass individuals in the San Francisco Bay are generally smaller in size, less robust, isolated from other eelgrass, and vary in location from year to year. They are therefore less consistent as food sources and spawning habitats, and they are not as valuable as protective cover for marine life.

Occurrence in Belvedere

In San Francisco Bay, the first study on the baywide distribution of eelgrass indicated that it covered upwards of 300 acres (Wyllie-Echeverria and Rutten 1989). More recent studies suggest it is more widespread within the Bay, covering approximately 2,880 acres (Merkel and Associates 2003). Eelgrass in the Bay is also restricted to a narrow elevation range between approximately +1 ft MLLW and -6 ft MLLW. Its depth range at a particular site is dependent upon water turbidity as plant growth is light-limited (Zimmerman et al. 1991). Sediment type, currents, bottom shear, and water temperature also affect its distribution. Beds of eelgrass in the San Francisco Bay show a high variation in size, density and location from year to year.

2.0 Olympia Oyster

Life History

The Olympia oyster (*Ostrea conchaphila*, formerly *O. lurida*) is the only native oyster found along the Pacific Coast. This oyster occurs from Alaska to Baja California, including some areas of the San Francisco Bay, where it can be locally abundant (Kozloff 1993). Olympia oyster habitat is highly varied but typically includes estuaries, small rivers and streams. Along the Pacific Coast, Olympia oyster beds are typically formed in the subtidal zone; however, in the San Francisco Bay, live beds have only been documented to occur in the intertidal zone (NOAA

2007). Here, they may attach to the underside of rocky substrate where the bottom is gravel or rock, or on the upper sides of rocks where the bottom is muddy (Kozloff 1993). Olympia oysters produce planktonic larvae that remain in the water column for about three weeks until the increasing weight of the shell allows each larva to sink to the bottom and settle on appropriate hard substrate, such as rocks, rip rap, or other oyster shells (NOAA Restoration Portal 2008). Reproduction typically occurs in late-Spring/early-Summer within a temperature range of approximately 14 -16°C (Strathman 1987).

As filter feeders, oysters contribute greatly to water quality and clarity by extracting phytoplankton and particulate matter from the water column. Water clarity allows light to penetrate the water column and support submerged aquatic vegetation, such as eelgrass, which provides juvenile rearing habitat for a wide variety of marine organisms. Oyster beds also provide large surface areas for colonization by other organisms, including barnacles, tunicates, mussels, sea anemones, and tube worms (NOAA Restoration Portal 2008). Empty shells may also provide protection for small crustaceans and fish eggs, and live oysters are important prey items for crabs, snails, sea stars and birds.

Though evidence suggests that *O. conchaphila* was historically a large component of the San Francisco Bay ecosystem, this species was overharvested during the mid-nineteenth century to meet commercial demands, and populations have declined drastically. To maintain the West Coast oyster fishery, the non-native Pacific oyster (*Crassostrea gigas*) was introduced, providing the native oyster some relief from harvesting pressure but apparently not facilitating its recovery to historic abundances (Browning 1972, Baker 1995).

Occurrence in Belvedere

The native Olympia oyster has been documented to occur in low abundances throughout the San Francisco Bay. It has been observed along the Tiburon/ Belvedere shoreline and in the vicinity, including the shorelines of Richardson Bay, San Francisco, and Angel Island (Grosholz et. al 2007, NOAA 2007). The presence of native oysters has been established along the San Rafael Avenue Seawall in Belvedere (Grosholz et. al 2007, NOAA 2007, WRA 2008), which indicates that additional areas along the Belvedere shoreline where similar rocky intertidal substrate is available could potentially provide suitable oyster habitat (see Figure 5). In the North Bay, Olympia oyster restoration sites have been established at Bair Island, Marin Rod and Gun Club, and in northern Richardson Bay (NOAA 2007).

In 2008, WRA, Inc. conducted an oyster survey along the San Rafael Avenue Seawall and found native oysters on the surface and underside of rip rap, and in crevices deep within the rip rap seawall. The upper range of elevation for the Olympia oyster recorded during this study was approximately 3 feet MLLW, and the observed oyster density increased steadily to the South. In addition, oyster drills that prey on native oysters were only located in northern transects, and this trend corresponds to the lower oyster density in these transects. Elevation and presence of rocky substrate were determined to be the two largest factors in determining presence or absence of oysters in the study area (WRA 2008). Grosholz et al. (2007) surveyed the same area and also documented Olympia oyster presence at a relatively low density, as well as the presence of the non-native Atlantic oyster drill (*Urosalpinx cinerea*).

References not appearing in main document text

Baker, P. 1995. Review of ecology and fishery of the Olympia oyster, *Ostrea lurida* with annotated bibliography. J. Shellfish Res. 14(2): 501-518.

Browning, B. M. 1972. The natural resources of Elkhorn Slough: their present and future use. California Department of Fish and Game Coastal Wetland Series #4. 121 pp.

Granger, S., M. Traber, S.W. Nixon, and R. Keyes. 2002. A practical guide for the use of seeds in eelgrass (*Zostera marina* L.) restoration. Part I. Collection, processing, and storage. M. Schwartz (ed.), Rhode Island Sea Grant, Narragansett, R.I. 20 pp.

Hemminga, M. A., and C. M. Duarte. 2000. Seagrass Ecology. Cambridge University Press, Cambridge, United Kingdom.

NOAA Restoration Portal. 2008. Oyster Reefs. Contributed by Kay A. McGraw, NOAA Restoration Center Silver Spring, MD. http://habitat.noaa.gov/restorationtechniques/public/habitat.cfm?HabitatID=2&HabitatTopicID=8 (Septmeber 2008).

Strathman, M.F. 1987. Reproduction and Development of Marine Invertebrates of the Northern Pacific Coast. Univ. of Washington Press, Seattle, WA. 670 p.

Williamson, K. J. 2006. Relationships between eelgrass (*Zostera marina*) habitat characteristics and juvenile Dungeness Crab (*Cancer magister*) and other invertebrates in southern Humboldt Bay, California, USA. Thesis. Humboldt State University.

Wyllie-Echeverria, S. and M. Fonseca. 2003. Eelgrass (*Zostera marina* L.) research in San Francisco Bay, California from 1920 to the present. Prepared for NOAA: National Centers for Coastal Ocean Science.

Wyllie-Echeverria, S. and P. Rutten. 1989. Inventory of eelgrass (*Zostera marina*) in San Francisco Bay/San Pablo Bay. NMFS/NOAA Administrative Report SWR-89-05. Terminal Island, CA October 1989.

GEOLOGIC HAZARDS AND MITIGATION MEASURES

GENERAL PLAN UPDATE
BELVEDERE, CALIFORNIA

Submitted to:

PMC
500 12th Street, Suite 240
Oakland, CA 94607

Prepared by:
ENGEO Incorporated

December 15, 2009
Project No. 8816.000.000

- Expect Excellence -

Project No.
8816.000.000

December 15, 2009

Mr. John Steere
PMC
500 12th Street, Suite 240
Oakland, CA 94607

Subject: City of Belvedere
General Plan Update
Belvedere, California

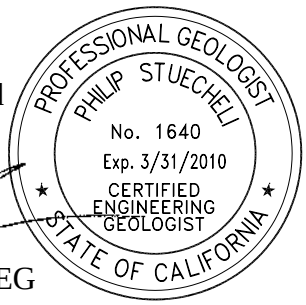
GEOLOGIC HAZARDS AND MITIGATION MEASURES

Dear Mr. Steere:

This report summarizes the geologic hazards and recommended mitigation measures for inclusion the City of Belvedere's general plan. We trust that this document provides geotechnical guidance appropriate for the current planning process. Please contact us if you have any questions regarding the site conditions and geotechnical recommendations presented in this report.

Very truly yours,

ENGEO Incorporated



Philip J. Stuecheli, CEG

Theodore P. Bayham, GE, CEG

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1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE

This report presents a summary of geologic hazards and preliminary mitigation measures for the proposed update of the Belvedere General Plan. The conclusions of this report are based on review of published geologic literature, selected geotechnical reports in the City files examination of aerial photographs, a geologic reconnaissance of the study area, and consultation with the project team. A geologic hazard map is included with this report. This report was prepared for the exclusive use of PMC, the City of Belvedere and their design team consultants.

1.2 SITE LOCATION AND DESCRIPTION

The City of Belvedere is located on the southwest tip of the Tiburon Peninsula, between the Town of Tiburon and Richardson Bay; the City encompasses Belvedere Island, Corinthian Island and the Belvedere Lagoon. Access to the island is via Beach and San Rafael Roads, located on causeways at the southeast and northwest ends of the lagoon. Utilities, including water, sanitary sewer and gas enter the City via Beach and San Rafael Roads.

2.0 GEOLOGIC SETTING

Belvedere and Corinthian Islands are underlain by metamorphosed greenstone and sandstone of the Franciscan Assemblage, according to maps prepared by the USGS (Schlocker, 1958, Blake, et al., 2000). Layering within the bedrock generally runs northwest, parallel to the long axis of Belvedere Island and dips steeply to the northeast. Figure 1 depicts the bedrock geology of the City. Prior to development of the City, Belvedere and Corinthian Islands were separated from Tiburon by a shallow lagoon and mudflats. Development of the City since the Late 1800s has included partial filling of the lagoon and grading of numerous roads and building pads on the steep hillsides of Belvedere and Corinthian Islands.

The Bay Area is one of the most seismically active regions in the world due to its location on the boundary between the North American and Pacific tectonic plates. In the area surrounding Belvedere, the plate margin is formed by several active fault lines, including the San Andreas fault, located approximately 8.5 miles to the southwest, and the Hayward Fault, located about 9.5 miles to the northeast. Major active faults and historic seismicity in northern California are depicted on Figure 2. According to the 2007 Uniform California Earthquake Rupture Forecast, Version 2 (UCERF 2), the probability of a magnitude 6.7 or larger earthquake over the next 30 years striking the greater San Francisco Bay Area is 63%. For northern California, the most likely source of such earthquakes is the Hayward-Rodgers Creek Fault (31% in the next 30 years)

3.0 GEOLOGIC MATERIALS

One of the factors controlling the distribution of geologic hazards in the City is the variation of geologic materials. In general, the bedrock formations in the City consist of dense, competent rock that is capable of supporting the moderately steep natural slopes that form much of Belvedere and Corinthian Islands. However, the local stability of the bedrock is greatly influenced by degree of fracturing and weathering at any given location. In addition, the bedrock can be destabilized by shoreline erosion or by man-made cuts that create over-steepened slopes. For example the bedrock exposed in steep shoreline bluffs at the southwest corner of Belvedere Island has historically experienced sloughing and shallow landslides.

Swale and valley areas on the slopes of Belvedere and Corinthian Island are underlain by deposits of colluvium, a type of soil that forms by the downslope transportation and accumulation of weathered bedrock debris. Colluvium can be subject to stability problems, especially where man-made cuts reduce lateral support or where fills add lateral loads to slopes. Landslides typically form in swale areas where thick deposits of colluvium have accumulated. The potentially low natural stability of colluvium can be further reduced by the presence of groundwater, introduced either during heavy winter rains, by poor surface drainage or by irrigation.

The original distribution of geologic materials throughout the City has been extensively modified by man-made improvements. The construction of roads, building pads and other improvements in the City has included both excavations into steep hillsides and placement if fill to create buildable land. On sloping ground, level areas for development were typically constructed by excavating cut slopes on the uphill slopes and placing fill on the downhill slopes. Much of this construction occurred between the 1930s and the 1950s, prior to the development of modern grading practices and codes. Cut and fill slopes along roadways and around building areas are locally supported by retaining walls of many types, ages and variable states of repair, including many older un-reinforced masonry walls. We noted many walls that are in poor condition, tilted cracked or otherwise affected by soil movements. Sections of older masonry walls have locally been replaced by pier-and-wood lagging walls. A number of older masonry walls supporting roads have been structurally reinforced by tieback anchors.

The Belvedere Lagoon neighborhoods are the most extensively graded area within the City limits. The elevated areas that now support the streets and residential lots in the lagoon neighborhoods were created in the mid-to late 1940s by construction of dikes at Beach and San Rafael Roads and draining the original interior lagoon. Native soils were excavated from the existing lagoon areas, and placed as fills to form elevated streets and building pads. Thick deposits of potentially compressible marine clays silts and loose sand remain below the lagoon neighborhoods.

The relative levels of risk from geologic hazards within the City are influenced by the distribution of natural soil and rock materials, the steepness of slopes, man-made changes to original conditions, and external factors such as wave erosion and seismic ground shaking. We have compiled a geologic hazards map based on the combination of the above factors, using the hazard categories described in Table 1.

TABLE 1
Geologic Hazards

Geologic Hazard Category	Description	Landslide Susceptibility	Settlement Potential	Liquefaction and Ground Lurching Susceptibility	Erosion Potential	Tsunami Inundation	Comments
Slope Stability Category 1	Developed hillside areas generally inclined at 3H:1V or flatter	Low	Low	Low	Low to moderate	Low	Grading and retaining wall construction may locally create potential slope movement hazards.
Slope Stability Category 2	Developed hillside areas generally inclined at between 3H:1V and 2H:1V	Moderate	Low	Low	High	Low	Grading and retaining wall construction may locally create potential slope movement hazards.
Slope Stability Category 3	Developed hillside areas generally inclined at 2H:1V or steeper	Moderate to High	Low	Low	High	Low	Grading and retaining wall construction may locally create potential slope movement hazards.
Slope Stability Category 4	Steep cut slope above West Shore Road	High	Low	Low	High	Low	Hazard of rock fall to adjacent road and residences
Slope Stability Category 5	Steep slopes adjacent to shoreline subject to wave erosion	High	Low	Low	High	Low	Local stability greatly influenced by degree of fracturing and weathering of bedrock and to continued destabilization by wave erosion
Bay Fill over Marine Sediments	Marine sands, silts and clays deposited in the lagoon and around the island periphery	Low	High	High	Low to moderate	High	Seismic ground shaking will potentially be amplified by the soft marine sediments underlying the lagoon neighborhoods
Shoreline Inundation Areas	Low-lying shoreline areas are subject to inundation by storm wave and Tsunami.	Varies	Varies	Varies	High	High	Shoreline areas within 15 feet of sea level; includes both Bay Fill and rocky shoreline areas

4.0 GEOLOGIC HAZARDS AND MITIGATIONS

The geologic hazards described in Table 1 are depicted graphically on Figures 3 and 4. The following sections describe geologic hazards in detail.

4.1 SEISMIC GROUND SHAKING

4.1.1 Impacts

According the California Geological Survey the probabilistic seismic ground motions (with a 10% probability of being exceeded in 50 years) are estimated to be approximately 0.5g (50% of gravity in horizontal direction) for the portions of the City underlain by bedrock. Ground shaking levels in areas of Bay fill or on very steep slopes could be significantly higher. The impacts from seismic ground shaking area likely to include damage to older structures lacking shear walls and secure attachment to foundations, damage to many older un-reinforced masonry walls, and widespread shallow slope failures in the upper soil layers on steep slopes. Seismic ground shaking will also trigger ground failures in filled land in the lagoon neighborhoods and along West Shore Road as described below.

4.1.2 Mitigation

The seismic design provisions of the California Building Code (CBC) prescribes minimum building standards that are intended to allow structures to: (1) resist minor earthquakes without damage, (2) resist moderate earthquakes without structural damage but with some nonstructural damage, and (3) resist major earthquakes without collapse but with some structural as well as nonstructural damage. Essential structures, such as fire stations, hospitals or schools, have more stringent earthquake provisions that are set forth in the CBC. All new construction in the City should be required to follow current seismic codes. Most structures in the City of Belvedere were constructed before the adoption of modern building codes. However, experience with past earthquakes in California has shown that single-family wood frame structures like the majority of those in the City are unlikely to experience catastrophic failure or collapse due to seismic ground shaking. The performance and safety of existing structures can be improved by seismic retrofits such as improving attachment of walls to foundations and roofs, adding structural bracing and shear walls and addition of shutoff systems for electrical water and gas connections.

4.2 LIQUEFACTION AND GROUND LURCHING

Potentially liquefiable marine sediments and fills underlie most the Belvedere Lagoon area (Knudsen, 2000), as shown on Figure 3 and described in Table 1. Liquefiable sediments are also likely to be present under the fills along West Shore Road. Liquefaction typically occurs when seismic cyclic shear stresses collapse loose granular soil structures, increasing soil pore water pressure, reducing the effective stress (the frictional interlocking of soil particles) and decreasing soil strength.

4.2.1 Impacts

The most common types of ground failure typically associated with liquefaction include lateral spreading of subsurface layers causing ground fissures, tilting of the surface and loss of bearing within the area of the spread. Vertical settlements commonly occur due to displacement of sand volume through sand boils and densification and/or flow of susceptible sand layers. Loss of bearing strength beneath structure foundations can cause settlement or rotation of the structure. Buoyant buried objects, such as tanks or swimming pools, may float out of the ground.

Soft marine silts and clays like those under the Belvedere Lagoon are also susceptible to ground lurching. Ground lurching is believed to be caused by loss of shear strength in soft silts and clays during seismic ground shaking. Ground lurching can result in permanent displacement and tilting of the ground and ground cracking.

4.2.2 Mitigation

Liquefaction and ground lurching hazards cannot be eliminated in the Belvedere Lagoon area due to the age and nature of the existing construction. Beach and San Rafael Roads, which provide access to the City and contain lifeline utilities, are potentially susceptible to damage in the event of liquefaction or ground lurching induced ground failure. The risk to lifeline utilities could be reduced by installing automatic shutoff valves, bracing, flexible materials, flexible joints and connections, joint restraint, strengthening of support structures, or other means. Locations at risk should also be designed for easy access and repair, and consideration should be given to providing pre-designed replacement/repair fittings to allow rapid bridging of breaks at crucial locations where damage is anticipated.

4.3 TSUNAMI

Low-lying portions of Belvedere are susceptible to inundation from tsunami, waves produced from a seismic event. A regional map showing potential tsunami inundation areas has been published by Ritter and Dupre (1972). This map indicates that the Belvedere lagoon neighborhoods and low-lying areas along the northern shoreline of Belvedere Island could be impacted if a 20-foot-high tsunami wave were to enter the Golden Gate.

Based on the mapping by Ritter and Dupre (1972), and review of landform alterations and development that has taken place over the last 30 years, the portions of Belvedere that appear to be susceptible to tsunami inundation have been depicted on the Geologic Hazards Map, Figure 3. The actual areas that will be impacted from a tsunami will vary depending on factors such as the size of the tsunami wave, tide level at the time of the tsunami, the wave source location and the wave direction. In general, areas adjacent to the shoreline that are below an elevation of approximately 15 to 20 feet above mean sea level appear to have a higher level of risk. The areas of highest risk of tsunami inundation are identified on Figure 3 and described in Table 1.

4.3.1 Impacts

Impacts from tsunami could include damage to improvements from wave inundation and from wave carried debris. Tsunami is a potential safety hazard as well as a hazard to property.

4.3.2 Mitigation of Tsunami

Elimination of potential tsunami inundation risks will not be feasible, since residential development of low-lying shoreline in areas of Belvedere was completed many years ago. Risk from tsunami hazards can be reduced by providing an appropriate evacuation plan. A tsunami warning system is currently in place in the Bay Area. The system is intended to alert people to an eminent tsunami with sufficient time to permit safe evacuation from areas of high risk. Belvedere should periodically review and update the City evacuation plan.

4.4 COMPRESSIBLE MARINE SEDIMENTS

Potentially compressible marine sediments, including Young Bay Mud, former intertidal marsh and sandy shoreline deposits, underlie the Belvedere lagoon neighborhoods and the perimeter shoreline of the City as shown on Figure 3.

4.4.1 Impacts

Settlement of marine sediments under the Belvedere lagoon area due to the filling in the 1940s is likely to be largely complete at this time. However, any additional filling or other addition of new surface loads in areas underlain by soft marine sediments will result in additional settlements. Settlement of marine sediments in Bay margin areas could result in damage to adjacent surface improvements and underground utilities.

4.4.2 Mitigation

Any new construction in Bay margin areas should carefully consider the potential effects of settlement both on the project and on adjacent properties. New construction can be supported on piles where appropriate. All new construction in Bay Margin areas should be designed with the guidance of a qualified geotechnical engineer in accordance with the applicable CBC.

4.5 LANDSLIDES

Landslides have historically caused significant property damage in Marin County and can potentially be a risk to life and safety. Regional mapping of landslide and debris flow susceptibility identifies swale areas on Belvedere Island as potential hazard areas (Ellen, 1997, Wentworth, 1997, Rice, et al., 1976). Based on a review of City records, past landslides have damaged private properties, public streets and utilities. Landslide movement can be triggered by elevated groundwater due to rainfall, saturation by leaking utilities or impounded water, wave erosion and manmade cuts and fills, as well as by seismic ground shaking.

Based on review of records and historic aerial photographs the most likely types of landslides in the Tiburon-Belvedere area appear to be relatively small, shallow debris slides and flows. Landslides originating on slopes steeper than 2:1 (horizontal:vertical) have the potential to move rapidly and travel long distances from the source area. Landslides have typically been triggered by intense rainfall events, especially those that are preceded by periods of several days of very wet weather. Due to the relatively high density of development and man-made modification of slopes on Belvedere and Corinthian Islands, landslide risks in hillside neighborhoods have been categorized by slope inclination and proximity to the shoreline as Categories 1 through 5, as shown on Figure 4 and described in Table 1.

The steep, high cut slope east of West Shore Road exposes areas of loose, blocky rock that have periodically shed rock falls on to the adjacent road and properties. Rock fall hazards can be triggered by seasonal rainfall or seismic ground shaking.

The existing steep slopes adjacent to shoreline areas have historically been subject to a relatively high rate of shallow landslides and sloughing. These hazards appear to be triggered by a combination of rainfall and wave erosion, which have locally created steep, un-vegetated slopes. Properties that are on or adjacent to these slopes have a relatively high risk of experiencing landslide movement.

The development of hillside neighborhoods in Belvedere during the 1930s through the 1950s included construction of homes, streets and utilities across potentially unstable soils. Therefore, it is likely that the existing improvements will periodically be subject to damage from landslide activity during heavy storms or in the event of a strong seismic ground shaking.

4.5.1 Landslide Impacts

Landslide movement can cause large vertical and horizontal ground movements, ground warping and bulging, displacement of large masses of debris from slopes onto roads and structures, and blocking of surface drainage facilities. Debris flows commonly entrain large rocks, uprooted trees and other debris and can bury or flatten houses. Due to their rapid movement, debris flows are a potential threat to life and safety. Rock falls can discharge boulders at relatively high speeds to areas adjacent to steep cut slopes

4.5.2 Landslide Mitigation

The existing public and private improvements in the Belvedere hillside neighborhoods were largely constructed prior to the development of modern hillside grading and building codes. Many existing improvements are situated in swale areas underlain by potentially unstable deposits of colluvium or close to hillsides that have previously experienced landslide activity. Due to the complex soil conditions in the City that have been formed by man-made alteration to the natural conditions, it is not possible to for the City to determine the site specific landslide risks for individual properties. Newer structures, especially those built after the 1970s on deep foundations are more likely to be able to resist soil movement near foundations. Elimination of

potential landslide risks is typically not feasible in mature existing communities like Belvedere. However, Belvedere residents can take precautions to limit potential risks and to protect their safety in the event of landslide movement. The USGS provides a useful discussion of landslide hazard preparedness at http://landslides.usgs.gov. Residents should be encouraged to maintain surface drainage systems and avoid ponding of storm water on their properties. Movement or failure of older unreinforced masonry or deteriorated wood retaining walls can trigger slope failures in adjacent slopes. Maintenance of retaining walls is a critical factor in preserving slope stability in steep hillside areas. Older walls with shallow foundation will be susceptible to failure in the event of strong seismic ground shaking. Residents who are concerned about possible slope stability problems should have their properties evaluated by a qualified geotechnical professional. Geotechnical reports should be required for new construction or for the design of mitigation measures for active landslide movement.

4.6 EXPANSIVE SOILS

In general, the surficial soils in the upland areas of Belvedere are relatively non-expansive or moderately expansive.

4.6.1 Expansive Soil Impacts

Expansive clay soils shrink and swell as a result of seasonal fluctuation in moisture content. This can cause heaving and cracking of slabs-on-grade, pavements, and structures founded on shallow foundations. The amount of seasonal movement can be roughly estimated from the plasticity index. In the City of Belvedere, surface soils are typically of low to moderate plasticity. In general, the potential for expansive soil movement on non-plastic soils or soils of low plasticity is considered to be low. Moderately plastic soils could potentially cause movement of poorly constructed or shallow-founded improvements.

4.6.2 Expansive Soil Mitigation

Where expansive soils are present, building damage due to volume changes associated with expansive soils can be reduced through proper foundation design. Where new construction is proposed, the soil conditions should be evaluated by a qualified geotechnical engineer.

4.7 EROSION

Erosion can be triggered by many natural events such as destruction of vegetation by wildfires, incision of gullies due to uncontrolled surface drainage, and undermining of shoreline slopes by wave action. Areas where natural vegetation is disturbed by construction such as graded slopes will be particularly susceptible to erosion until they can be adequately revegetated. Surface water discharged from developed areas requires careful control to avoid erosion.

4.7.1 Impacts

The impacts of soil erosion from graded areas can include undermining of roads and foundations, potential destabilization of slopes and deposition of excessive amounts of sediment into the Bay.

4.7.2 Mitigation

Erosion impacts can be minimized by maintenance of surface drainage facilities to avoid blockage of inlets or uncontrolled discharge to slopes and maintenance of vegetative cover on areas of exposed soil. New construction projects should comply with applicable City and County storm water control regulations.

SELECTED REFERENCES

Blake, M.C., Graymer, R.W., Jones, D.L., and Soule, Adam, 2000, Geologic map and map database of parts of Marin, San Francisco, Alameda, Contra Costa, and Sonoma Counties, California: U.S. Geological Survey, Miscellaneous Field Studies Map MF-2337, scale 1:75000.

California Division of Mines and Geology, 1996, Probabilistic Seismic Hazard Assessment for the State of California, DMG Open-File Report 96-08.

California Division of Mines and Geology, 1997, Guidelines for Evaluating and Mitigating Seismic Hazards in California: Special Publication 117, 74p.

Campbell, R.H., 1975, Soil Slips, Debris Flows, and Rainstorms in the Santa Monica Mountains and Vicinity, Southern California: U.S. Geological Survey Professional Paper 851, 51p.

Ellen, S.D., and Fleming, R.W., 1987, Mobilization of Debris Flows from Soil Slips, San Francisco Bay Region, California, *in* Costa, J.E. and Wieczorek, G.F., (editors.), Debris Flows/Avalanches: Process, Recognition, and Mitigation: Reviews in Engineering Geology, Vol. VII, Geological Society of America, pp. 31 to 40.

Ellen, S.D., Mark, R.K., Wieczorek, G.F., Wentworth, C.M., Ramsey, D.W., May, T.E., Graham, S.E., Beukelman,G.S., Barron, A.D., and Graymer, R.W., 1997, Map showing principal debris-flow source areas in the San Francisco Bay region, California: U.S. Geological Survey, Open-File Report OF-97-745-E, scale 1:125000.

Knudsen, K.L., Sowers, J.M., Witter, R.C., Wentworth, C.M., Helley, E.J., Nicholson, R.S., Wright, H.M., and Brown, K.H., 2000, Preliminary maps of Quaternary deposits and liquefaction susceptibility, nine-county San Francisco Bay region, California: a digital database: U.S. Geological Survey, Open-File Report OF-2000-444, scale 1:275000.

Nichols, D.R. and Wright, N.A., 1971, Preliminary map of historic margins of marshland, San Francisco Bay, California: U.S. Geological Survey, Open-File Report OF-71-216, scale 1:24000

Nilsen, T.H., 1975, Preliminary photointerpretation maps of landslide and other surficial deposits of 56 - 7.5 minute quadrangles, Alameda, Contra Costa, and Santa Clara Counties, California: U.S. Geological Survey, Open-File Report OF-75-277, scale 1:24000.

Rice, S. J., Smith, T. C., and Strand, R. G., 1976, Geology for Planning: Central and Southeast Marin County, California, California Division of Mines and Geology Open-File Report, 76-02

Ritter, J. R., and Dupre, W. R., 1972, Maps Showing Areas of Potential Inundation by Tsunamis in the San Francisco Bay Region, California, USGS Miscellaneous Field Studies MF-480.

Schlocker, Julius, 1958, Geology of the San Francisco North quadrangle, California: U.S. Geological Survey, Professional Paper 782, scale 1:24000.

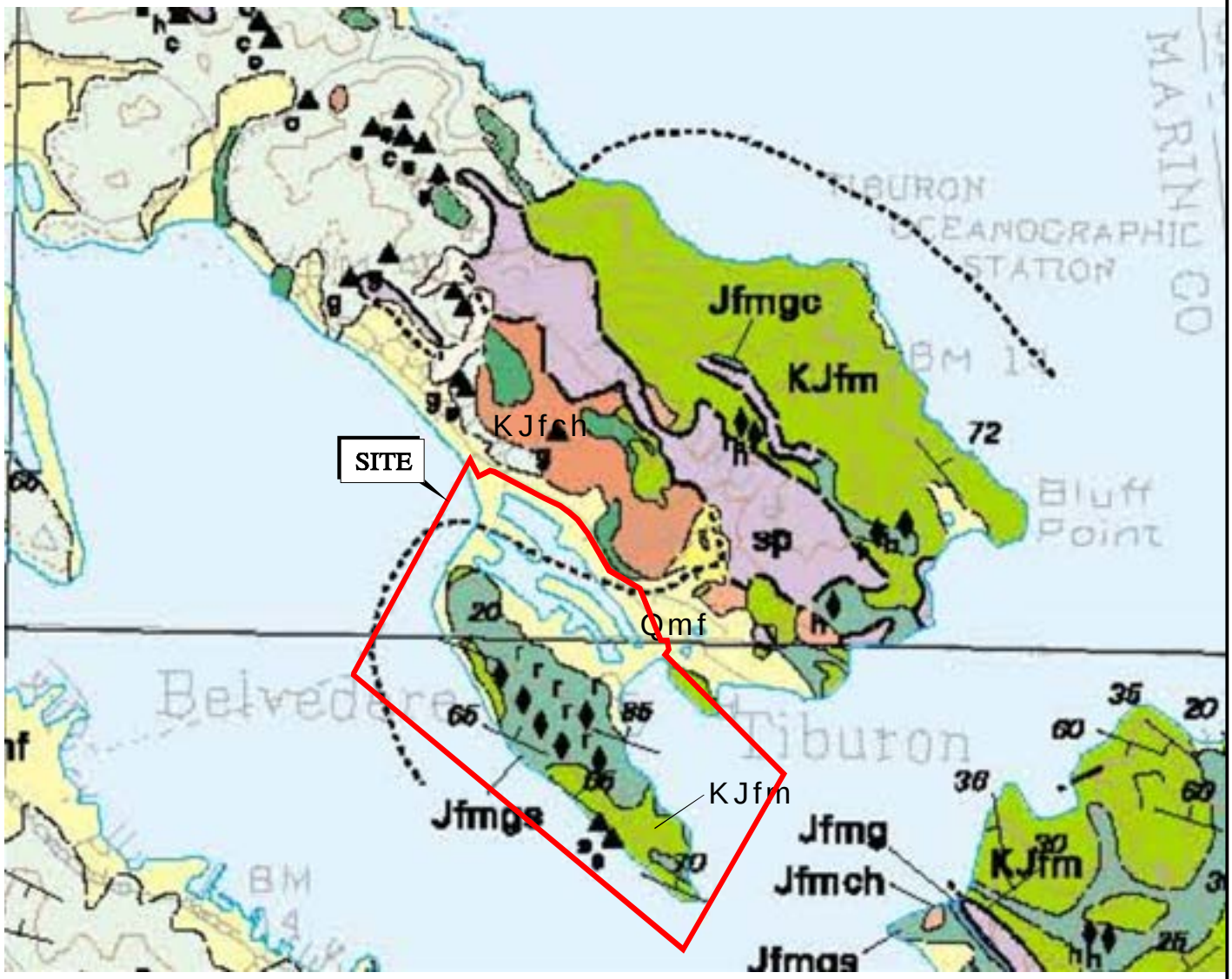
Reneau, S.L., and Dietrich, W.E., 1987, The Importance of Hollows in Debris Flow Studies; Examples from Marin County, California, in Costa, J.E. and Wieczorek, G.F., (editors), Debris Flows/Avalanches: Process, Recognition, and Mitigation: Reviews in Engineering Geology, Vol. VII, Geological Society of America, pp. 165-179.

Wentworth, C.M., Graham, S.E., Pike, R.J., Beukelman, G.S., Ramsey, D.W., and Barron, A.D., 1997, Summary distribution of slides and earth flows in the San Francisco Bay region, California: U.S. Geological Survey, Open-File Report OF-97-745-C, scale 1:125000.

Witter, R.C., Knudsen, K.L., Sowers, J.M., Wentworth, C.M., Koehler, R.D., Randolph, C.E., Brooks, S, K., and Gans, K.D., 2006, Maps of Quaternary deposits and liquefaction susceptibility in the central San Francisco Bay region, California: U.S. Geological Survey, Open-File Report OF-2006-1037, scale 1:200000.

Youd, T.L. and Hoose, S.N., 1978, Historic ground failures in northern California triggered by earthquakes: U.S. Geological Survey, Professional Paper 993, scale 1:250000

FIGURES



EXPLANATION

Qmaf	ARTIFICIAL FILL OVER MARINE AND MARSH DEPOSITS		CONTACT-DESPOSITIONAL OR INTRUSIVE CONTACT, DASHED WHERE APPROXIMATELY LOCATED, DOTTED WHERE CONCEALED, QUIRED WHERE UNCERTAIN
Jfmgs	METAGREENSTONE		
KJfm	METAMORPHIC ROCKS	65	STRIKE AND DIP OF BEDDING
KJfch	CHERT	$\blacklozenge_u$	HIGH GRADE MELANGE BLOCK-LETTER CODE FOR ROCK (u=Jfmgs r=Jfmgs, h=Jfmch)
sp	SERPENTINITE	$\blacktriangle_s$	LOW GRADE MELANGE BLOCK-LETTER CODE FOR ROCK (s=sp, c=KJgs, W=Kfgwy, n=sc)

N

0 FEET 3000

0 METERS 1500

BASE MAP SOURCE: GRAYMER, 2000

ENGEO Expect Excellence

REGIONAL GEOLOGY MAP

BELVEDERE

BELVEDERE, CALIFORNIA

PROJECT NO.: 8816.000.000			FIGURE NO. 1
DATE: DECEMBER 2009			
DRAWN BY: SRP	CHECKED BY: PJS		

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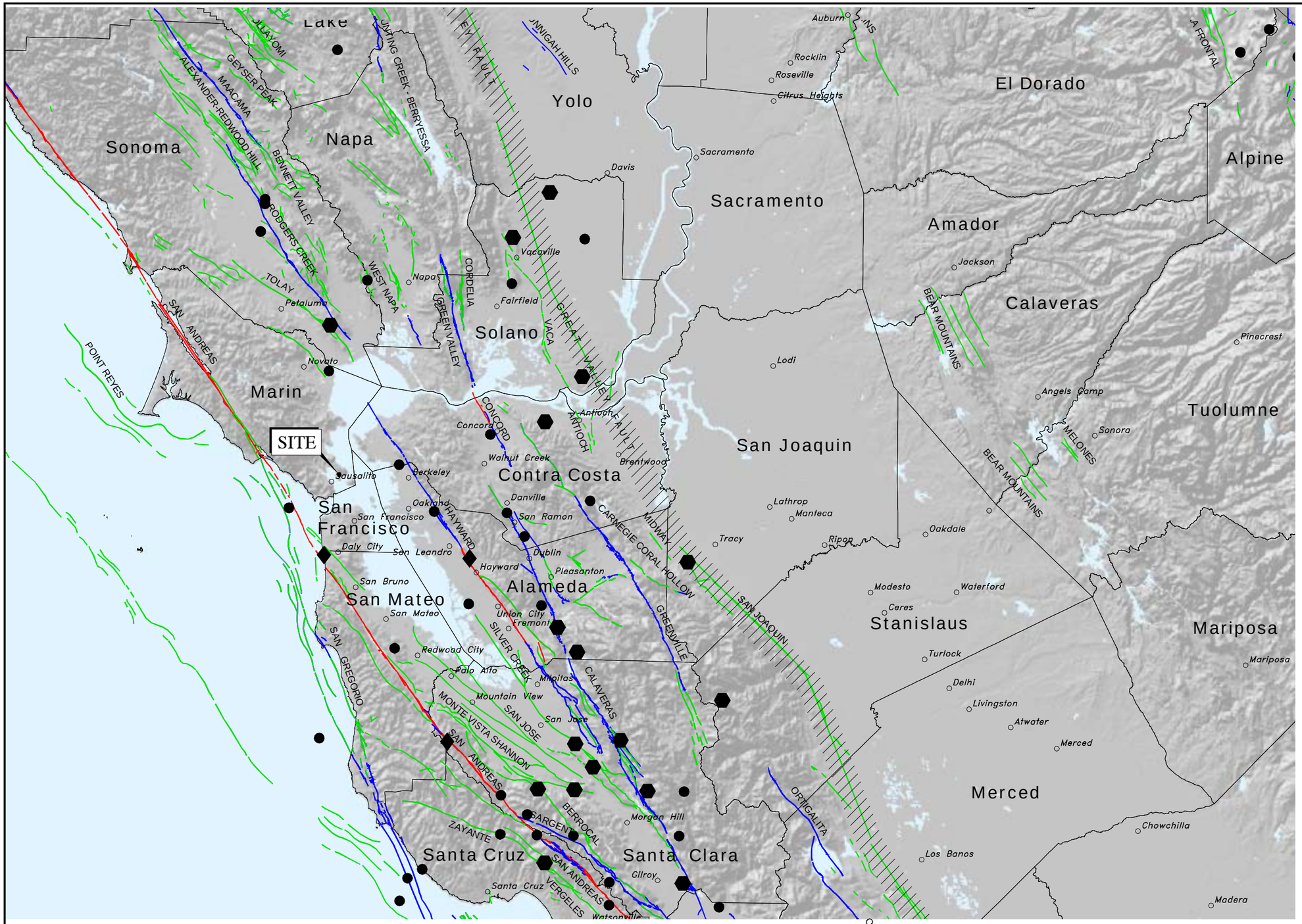

EXPLANATION

- MAGNITUDE 7+
- MAGNITUDE 6-7
- MAGNITUDE 5-6
- HISTORIC FAULT
- HOLOCENE FAULT
- QUATERNARY FAULT
- HISTORIC BLIND THRUST FAULT ZONE

BASE MAP SOURCE:
U.S.G.S. 1-ARC SECOND S.R.T.M. DATABASE
U.S.G.S. QUATERNARY FAULT DATABASE, MARCH, 2006
U.S.G.S. HISTORIC EARTHQUAKE DATABASE (1800-2000)

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REGIONAL FAULTING AND SEISMICITY

BELVEDERE

BELVEDERE, CALIFORNIA

PROJECT NO.: 8816.000.000			FIGURE NO 2
DATE: DECEMBER 2009			
DRAWN BY: SRP	CHECKED BY: PJS		

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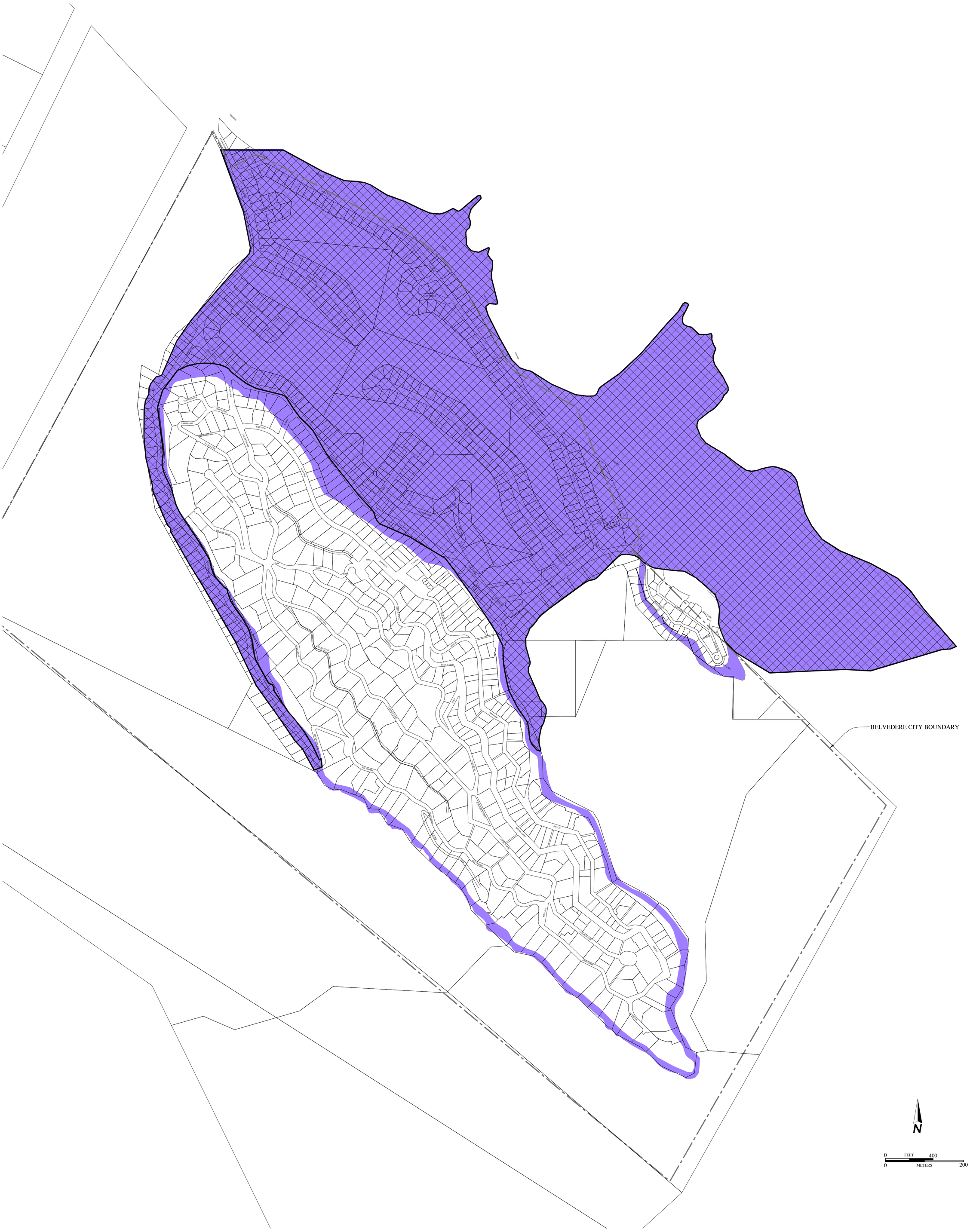

TABLE 1
GEOLOGIC MATERIAL AND PROPERTIES

Geologic Hazard Category	Description	Landslide Susceptibility	Settlement Potential	Liquefaction and Ground Lurching Susceptibility	Erosion Potential	Tsunami Inundation	Comments
Bay Fill over Marine Sediments	Marine sands, silts and clays deposited in the lagoon and around the island periphery	Low	High	High	Low to moderate	High	Seismic ground shaking will potentially be amplified by the soft marine sediments underlying the lagoon neighborhoods
Shoreline Inundation Areas	Low-lying shoreline areas are subject to inundation by storm wave and Tsunami.	Varies	Varies	Varies	High	High	

BASE MAP SOURCE: UNKNOWN

ENGEO Expect Excellence

LIQUEFACTION AND TSUNAMI HAZARDS MAP
BELVEDERE
BELVEDERE, CALIFORNIA

PROJECT NO.: 8816.000.000
DATE: DECEMBER 2009
DRAWN BY: SRP
CHECKED BY: PJS

FIGURE NO. 3

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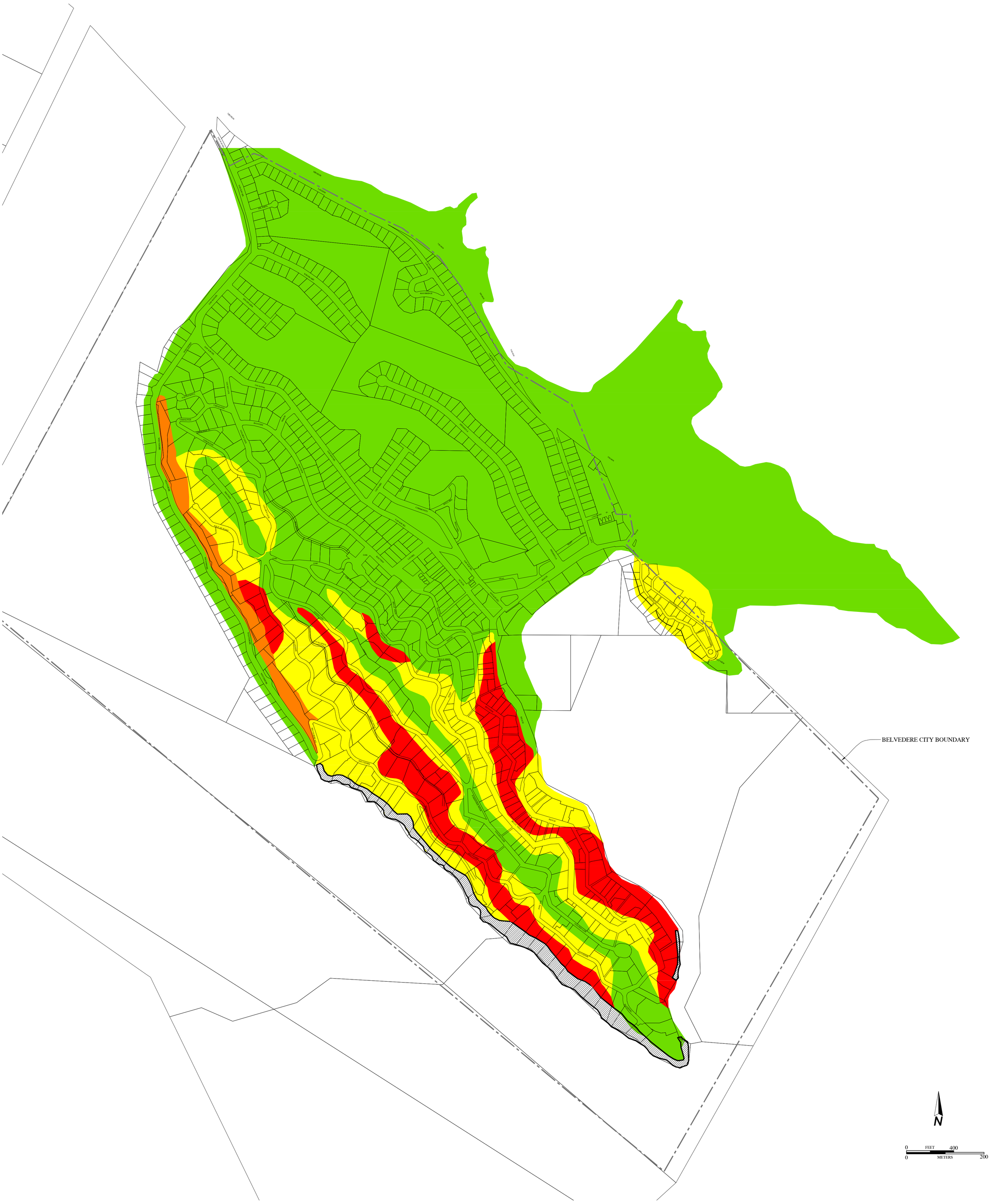

TABLE 1
GEOLOGIC MATERIAL AND PROPERTIES

Geologic Hazard Category	Description	Landslide Susceptibility	Settlement Potential	Liquefaction and Ground Lurching Susceptibility	Erosion Potential	Tsunami Inundation	Comments
Slope Stability Category 1	Developed hillside areas generally inclined at 3H:1V or flatter	Low	Low	Low	Low to moderate	Low	Grading and retaining wall construction may locally create potential slope movement hazards.
Slope Stability Category 2	Developed hillside areas generally inclined at between 3H:1V and 2H:1V	Moderate	Low	Low	High	Low	Grading and retaining wall construction may locally create potential slope movement hazards.
Slope Stability Category 3	Developed hillside areas generally inclined at 2H:1V or steeper	Moderate to High	Low	Low	High	Low	Grading and retaining wall construction may locally create potential slope movement hazards.
Slope Stability Category 4	Steep cut slope above Westside Drive	High	Low	Low	High	Low	Hazard of rock fall to adjacent road and residences
Slope Stability Category 5	Steep slopes adjacent to shoreline subject to wave erosion	High	Low	Low	High	Low	Local stability greatly influenced by degree of fracturing and weathering of bedrock and to continued destabilization by wave erosion

BASE MAP SOURCE: UNKNOWN

ENGEO Expect Excellence

SLOPE STABILITY HAZARDS MAP
BELVEDERE
BELVEDERE, CALIFORNIA

PROJECT NO.: 8816.000.000
DATE: DECEMBER 2009
DRAWN BY: SRP CHECKED BY: PJS

FIGURE NO. 4

ORIGINAL FIGURE PRINTED IN COLOR

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REVISED NOISE IMPACT ANALYSIS

FOR

CITY OF BELVEDERE GENERAL PLAN UPDATE

MAY 2010

PREPARED FOR:
PMC
500 12TH STREET, SUITE 240
OAKLAND, CA 94607

PREPARED BY:
AMBIENT
AIR QUALITY & NOISE CONSULTING
1214 PARK STREET, SUITE 301
PASO ROBLES, CA 93446

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INTRODUCTION

This section describes terminology used to discuss noise and discusses and analyzes the ambient noise environment of the proposed City of Belvedere General Plan Update Planning Area. Construction noise, traffic noise, operational noise, and other noise impacts associated with implementation of the General Plan Update are analyzed. Supporting materials from this report are located in **Appendix A**.

EXISTING SETTING

Acoustic Fundamentals

Noise is generally defined as sound that is loud, disagreeable, or unexpected. Sound is mechanical energy transmitted in the form of a wave because of a disturbance or vibration. Sound levels are described in terms of both amplitude and frequency.

Amplitude

Amplitude is defined as the difference between ambient air pressure and the peak pressure of the sound wave. Amplitude is measured in decibels (dB) on a logarithmic scale. For example, a 65 dB source of sound, such as a truck, when joined by another 65 dB source results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by 3 dB). Amplitude is interpreted by the ear as corresponding to different degrees of loudness. Laboratory measurements correlate a 10 dB increase in amplitude with a perceived doubling of loudness and establish a 3 dB change in amplitude as the minimum audible difference perceptible to the average person.

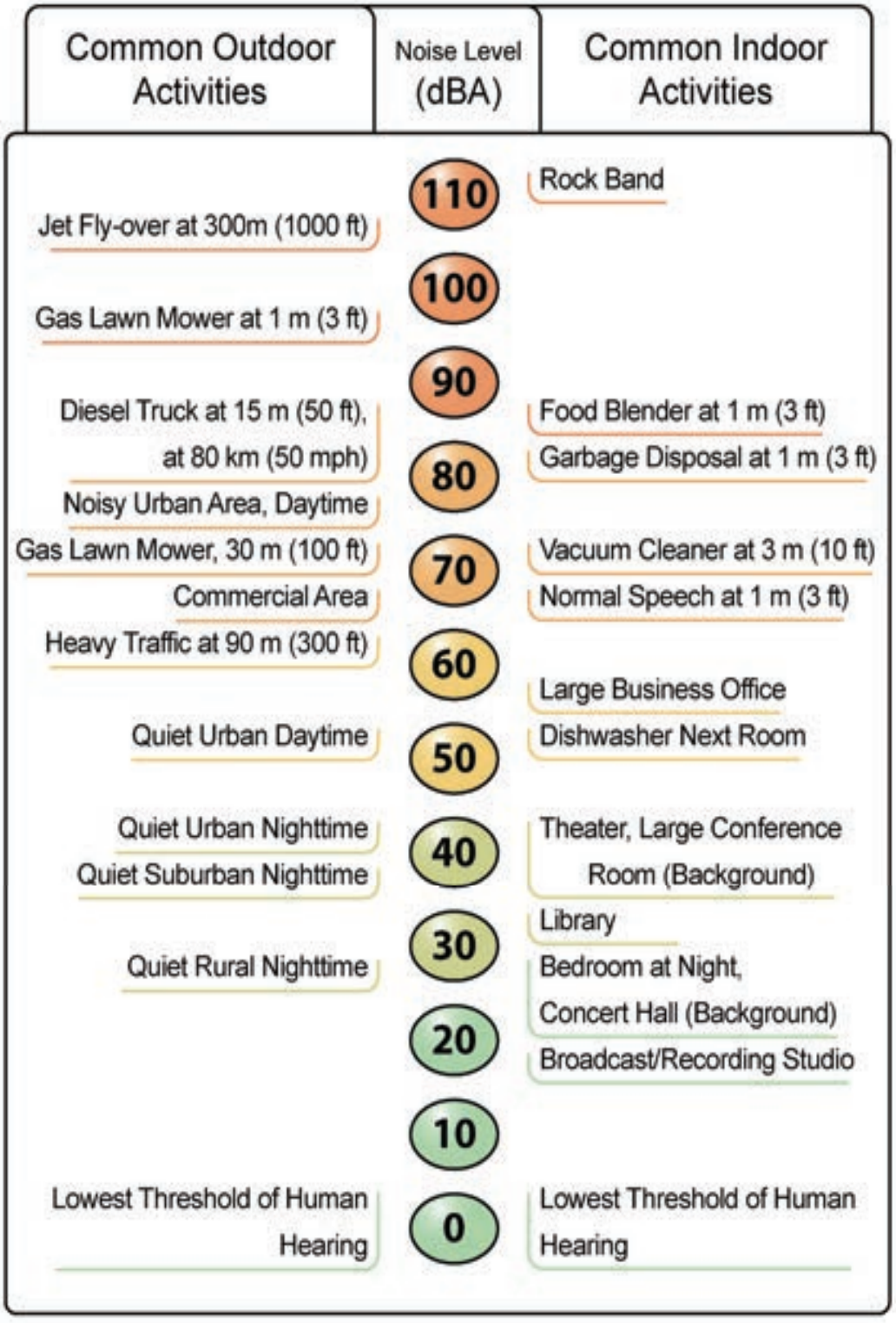
Frequency

The frequency of a sound is defined as the number of fluctuations of the pressure wave per second. The unit of frequency is the Hertz (Hz). One Hz equals one cycle per second. The human ear is not equally sensitive to sound of different frequencies. For instance, the human ear is more sensitive to sound in the higher portion of this range than in the lower and sound waves below 16 Hz or above 20,000 Hz cannot be heard at all. To approximate the sensitivity of the human ear to changes in frequency, environmental sound is usually measured in what is referred to as "A-weighted decibels" (dBA). On this scale, the normal range of human hearing extends from about 10 dBA to about 140 dBA. Common community noise sources and associated noise levels, in dBA, are depicted in **Figure 1**.

Addition of Decibels

Because decibels are logarithmic units, sound levels cannot be added or subtracted through ordinary arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3-dB increase. In other words, when two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dB higher than one source under the same conditions. For example, if one automobile produces a sound level of 70 dB when it passes an observer, two cars passing simultaneously would not produce 140 dB; rather, they would combine to produce 73 dB. Under the decibel scale, three sources of equal loudness together would produce an increase of 5 dB.

FIGURE 1
COMMON NOISE LEVELS



Source: Caltrans 2009

Sound Propagation & Attenuation

Geometric Spreading

Noise sources are generally characterized as either a localized source (i.e., point source) or a line source. Examples of point sources include construction equipment, vehicle horns, alarms, and amplified sound systems. Examples of a line sources include trains and on-road vehicular traffic. Sound from a point source propagates uniformly outward in a spherical pattern.

For a point source, sound levels generally decrease (attenuate) at a rate of approximately 6 decibels for each doubling of distance from the source, depending on ground surface characteristics. For acoustically hard sites (i.e., sites with a reflective surface between the source and the receiver), no excess ground attenuation is assumed. Parking lots and bodies of water are examples of hard surfaces which generally attenuate at this rate. For acoustically absorptive or soft sites (i.e., those sites with an absorptive ground surface between the source and the receiver, such as soft dirt, grass, or scattered bushes and trees), an excess ground-attenuation value of 1.5 decibels per doubling of distance is normally assumed. When soft surfaces are present, the excess ground attenuation for soft surfaces generally results in an overall attenuation rate of approximately 7.5 decibels per doubling of distance from the point source.

On-road vehicle traffic consists of several localized noise sources on a defined path, and hence can be treated as a line source, which approximates the effect of several point sources. Noise from a line source propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels for line sources attenuate at a rate of approximately 3 decibels for each doubling of distance for hard sites and approximately 4.5 decibels per doubling of distance for soft sites.

Atmospheric Effects

Receptors located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels. Sound levels can be increased at large distances (e.g., more than 500 feet) from the highway due to atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence can also have significant effects.

Shielding by Natural or Human-Made Features

A large object or barrier in the path between a noise source and a receiver can substantially attenuate noise levels at the receiver. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Natural terrain features (e.g., hills and dense woods) and human-made features (e.g., buildings and walls) can substantially reduce noise levels. Walls are often constructed between a source and a receiver specifically to reduce noise. A barrier that breaks the line of sight between a source and a receiver will typically result in minimum 5 dB of noise reduction. Taller barriers provide increased noise reduction.

Noise reductions afforded by building construction can vary depending on construction materials and techniques. Standard construction practices typically provide approximately 15 dBA exterior-to-interior noise reductions for building facades, with windows open, and approximately 20-25 dBA, with windows closed. With compliance with current building construction and insulation requirements, exterior-to-interior noise reductions typically average

approximately 25 dBA. The absorptive characteristics of interior rooms, such as carpeted floors, draperies and furniture, can result in further reductions in interior noise.

Human Response to Noise

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities, including sleep, speech, recreation, and tasks that demand concentration or coordination. Hearing loss can occur at the highest noise intensity levels. When community noise interferes with human activities or contributes to stress, public annoyance with the noise source increases. The acceptability of noise and the threat to public well-being are the basis for land use planning policies preventing exposure to excessive community noise levels.

Unfortunately, there is no completely satisfactory way to measure the subjective effects of noise or of the corresponding reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance and habituation to noise over differing individual experiences with noise. Thus, an important way of determining a person's subjective reaction to a new noise is the comparison of it to the existing environment to which one has adapted: the so-called "ambient" environment. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged. Regarding increases in A-weighted noise levels, knowledge of the following relationships will be helpful in understanding this analysis:

- Except in carefully controlled laboratory experiments, a change of 1 dB cannot be perceived by humans;
- Outside of the laboratory, a 3-dB change is considered a just-perceivable difference;
- A change in level of at least 5 dB is required before any noticeable change in community response would be expected. An increase of 5 dB is typically considered substantial;
- A 10-dB change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

A limitation of using a single noise-level increase value to evaluate noise impacts, as discussed above, is that it fails to account for pre-development noise conditions. With this in mind, the Federal Interagency Committee on Noise (FICON) developed guidance to be used for the assessment of project-generated increases in noise levels that take into account the ambient noise level. The FICON recommendations are based upon studies that relate aircraft noise levels to the percentage of persons highly annoyed by aircraft noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, these recommendations are often used in environmental noise impact assessments involving the use of cumulative noise exposure metrics, such as the average-daily noise level (i.e., CNEL, L_{dn}). FICON-recommended noise evaluation criteria are summarized in **Table 1** (FICON 2000).

TABLE 1
FEDERAL INTERAGENCY COMMITTEE ON NOISE
RECOMMENDED CRITERIA FOR EVALUATION OF INCREASES IN AMBIENT NOISE LEVELS

Ambient Noise Level Without Project	Increase Required for Significant Impact
< 60 dB	5.0 dB, or greater
60-65 dB	3.0 dB, or greater
> 65 dB	1.5 dB, or greater

Source: FICON 2000

As depicted in **Table 1**, an increase in the traffic noise level of 5.0, or greater, would typically be considered to result in increased levels of annoyance where existing ambient noise levels are less than 60 dB. Within areas where the ambient noise level ranges from 60 to 65 dB, increased levels of annoyance would be anticipated at increases of 3 dB, or greater. Increases of 1.5 dB, or greater, could result in increased levels of annoyance in areas where the ambient noise level exceeds 65 dB. The rationale for the FICON-recommended criteria is that as ambient noise levels increase, a smaller increase in noise resulting from a project is sufficient to cause significant increases in annoyance (FICON 2000). These criteria are commonly applied for analysis of environmental noise impacts.

EXISTING NOISE ENVIRONMENT

The City of Belvedere is located in Marin County approximately ten miles north of the Golden Gate Bridge. The City is surrounded by water in nearly all directions, including Richardson Bay to the west and north, and Belvedere Cove and Raccoon Straits to the south. In addition to being surrounded by water, Belvedere also has an interior lagoon and two land "bridges" which connect the largest portion of the City to the rest of the Tiburon Peninsula. The Town of Tiburon is located adjacent to and to the east of the City of Belvedere (City of Belvedere 2009a). Noise-sensitive land uses, ambient noise levels, and major noise sources within the City are discussed in more detail below.

NOISE-SENSITIVE LAND USES

Noise-sensitive land uses are generally considered to include those uses that would result in noise exposure that could cause health-related risks to individuals. Places where quiet is essential are also considered noise-sensitive uses. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Other land uses such as libraries, places of worship, and recreation areas are also considered noise-sensitive land uses.

Noise-sensitive land uses within the City consist predominantly of residential land uses, which are generally located within three distinct neighborhoods. Belvedere Island has the largest land area and is the most varied in terms of topography and landforms. Belvedere Lagoon forms the second, flatter portion of the City which surrounds the interior waterway. The third neighborhood is formed on Corinthian Island facing Belvedere Cove, where the island residents share borders with the Town of Tiburon. Smaller, distinct neighborhoods are associated with streets and blocks, such as San Rafael Avenue and West Shore Road. To a lesser extent, other noise-sensitive land uses located within the City of Belvedere include places of worship and community parks (City of Belvedere 2009a).

AMBIENT NOISE ENVIRONMENT

Short-term (10-minute) noise level measurements were conducted on November 2, 2009 January 29, 2009 for the purpose of documenting and measuring the existing noise environment at various locations throughout the City. Ambient noise measurement locations and corresponding measured values (i.e., L_{eq} and L_{max}) are summarized in **Table 2. Table 2** also presents calculated average-daily noise levels (in CNEL/L_{dn}) at measured locations. Noise measurement locations are depicted in **Figure 2**.

TABLE 2
SUMMARY OF MEASURED AMBIENT NOISE LEVELS

Location[1]		Monitoring Period	Primary Noise Sources	Noise Levels (dBA)		
				L_{eq}	L_{max}	CNEL/L_{dn}[2]
1	San Rafael Avenue at Edgewater Road, 25 Feet From Roadway Centerline	10:25-10:45	Vehicle Traffic	61.1	77.3	60.6
		22:00-22:10		49.8	66.3	
2	San Rafael Avenue at Leeward Road, 25 Feet From Roadway Centerline	11:10-11:20	Vehicle Traffic, Construction Noise	56.5	73.1	56.3
		22:25-22:35		45.9	60.7	
3	Community Road at Belvedere Park, 25 Feet From Roadway Centerline	11:30-11:40	Vehicle Traffic.	50.0	64.0	52.4
		22:45-22:55		44.7	61.4	
4	270 Beach Road, Property Line	11:55-12:05	Vehicle Traffic.	50.2	64.8	49.9
		23:10-23:20		39.2	49.2	
5	Belvedere Avenue at Belvedere Way, 15 Feet From Roadway Centerline	12:15-12:25	Vehicle Traffic.	48.7	62.8	49.1
		23:40-23:50		39.7	51.0	
6	BelleVista Avenue at Toyon Avenue, Property Line	12:40-12:50	Vehicle Traffic.	51.1	70.2	50.4
		00:10-00:20		38.7	46.2	
7	Beach Road at Peninsula Road, 35 Feet From Roadway Centerline	09:45-09:55	Vehicle Traffic	56.7	69.2	56.4
		00:35-00:45	Vehicle Traffic	45.7	64.4	
		13:05-13:15	Dredging[3]	60.5	68.6	NC
8	Beach Road North of Main Street, 25 Feet From Roadway Centerline	13:30-13:40	Vehicle Traffic.	62.5	78.1	62.6
		00:50-01:00		52.8	66.2	
9	Tiburon Linear Park, 90 Feet From Centerline of Tiburon Boulevard	13:55-14:05	Vehicle Traffic.	55.7	71.4	55.1
		01:15-01:25		43.7	53.9	
10	Bayview Avenue at Golden Gate Avenue, Property Line	14:25-14:35	Vehicle Traffic	48.9	66.3	49.0
		01:55-02:05		39.2	47.4	

Noise measurements were conducted on November 2, 2009 using a Larson Davis Model 820 Type I sound level meter.
*1. Measurement locations correspond to those depicted in **Figure 2**.*
2. CNEL calculated based on measured daytime and nighttime noise levels.
3. Dredging at a private yacht club, 1 barge-mounted excavator at approximately 215 yards.
NC=Not Calculated

FIGURE 2
NOISE MEASUREMENT LOCATIONS

NOISE SOURCES

Major noise sources located within the City of Belvedere consist of both non-transportation (i.e., stationary) and transportation sources. Noise issues associated with major noise sources are discussed in more detail, as follows:

Stationary Sources

From a land-use planning perspective, stationary-source noise control issues focus on two goals: (1) preventing the introduction of new noise-producing uses in noise-sensitive areas; and (2) preventing encroachment of noise-sensitive uses upon existing noise-producing facilities. The first goal can be achieved by applying noise performance standards to proposed new noise producing uses. The second goal can be met by requiring that new noise-sensitive uses near noise-producing facilities include mitigation measures to ensure compliance with noise performance standards. Each of these goals stresses the importance of avoiding the location of new uses that may be incompatible with adjoining uses.

Within the City of Belvedere, non-transportation noise sources are predominantly associated with activities conducted at local private clubs and construction activities. Exterior noise levels that affect neighboring parcels are typically subject to local noise ordinance standards. Commercial, recreational, and public facility activities can also produce noise that may affect noise-sensitive land uses. These noise sources can be continuous or intermittent and may contain tonal components that are annoying to individuals who live nearby. For instance, emergency-use sirens and backup alarms are often considered nuisance noise sources, but may not occur frequently enough to be considered incompatible with noise-sensitive land uses. Noise generated by stationary sources are often directional and can vary depending on various factors, including site conditions, distance from source, shielding provided by intervening terrain and structures, and ground attenuation rates. Noise levels associated with events and activities at private clubs, as well as, short-term construction activities, are discussed below.

Special Events

Special events, such as weddings, private parties, receptions, banquets, and business retreats, may result in detectable increases in ambient noise levels. Noise levels generated by such sources are primarily a function of the type of event being conducted and can vary substantially depending on the use. The use of amplified music and public address systems, which are occasionally associated with such events, are of particular concern given the potential to result in detectable increases in ambient noise levels at nearby land uses. Noise levels produced by amplified music and public address systems are typically intermittent and can vary depending on various factors, including voice level, volume setting, amplifier power, shielding, wind direction and other atmospheric effects. Given the low noise attenuation potential for water and surrounding hillsides, noise produced by events conducted near the waterfront, have the potential to result in detectable increases in ambient noise levels at nearby residential land uses. The City of Belvedere noise control ordinance currently regulates noise associated with events at private clubs, including the use of amplified music and public address systems (Conneally 2009).

Dredging

Harbor and slip dredging is also conducted on an occasional basis at various locations and private slips. Dredging typically occurs every eight to ten years, depending on the rate of silt deposition. Dredging of private slips would be anticipated to occur on a similar basis. To clear

the channel, dredging typically involves the use of one or two barge-mounted excavators). Dredging at local yacht clubs was most recently conducted in 2009, at the time this report was prepared. Based on noise surveys conducted, the operation of a dredge barge produced noise levels of 60 to 61 dBA L_{eq} at approximately 215 yards.

Construction Activities

Construction noise typically occurs intermittently and varies depending upon the nature or phase (e.g., demolition/land clearing, grading and excavation, erection) of construction. Noise generated by construction equipment, including earth movers, material handlers, and portable generators, can reach high levels. The U.S. Environmental Protection Agency (EPA) has found that the noisiest equipment types operating at construction sites typically range from 88 dBA to 91 dBA L_{eq} at 50 feet. Typical operating cycles may involve 2 minutes of full power, followed by 3 or 4 minutes at lower settings. Although noise ranges were found to be similar for all construction phases, the building construction phase tended to be less noisy (i.e., 79 dBA to 88 dBA L_{eq} at 50 feet), when compared to the initial site preparation and grading phases (EPA 1971). The City of Belvedere noise control ordinance currently regulates noise associated with construction activities.

Transportation Sources

As noted earlier in this report, ambient noise levels in many portions of the City of Belvedere are defined primarily by traffic on area roadways. Roadway traffic noise levels are a function of multiple factors, including the number and type of vehicles, vehicle speeds, and roadway characteristics. Major roadways contributing to the ambient noise environment include Tiburon Boulevard, San Rafael Avenue, and Beach Road. Based on the noise surveys conducted, traffic noise levels along area roadways generally range from the upper 40's to the mid 60's (in dBA CNEL) at approximately 25 feet from the roadway centerlines. There are no nearby public or private airports or railroads that contribute substantially to the ambient noise environment.

REGULATORY FRAMEWORK

Federal, state, and local governments have established noise standards and guidelines to protect citizens from potential hearing damage and various other adverse physiological and social effects associated with noise. Those regulations most applicable to the community are summarized, as follows:

FEDERAL

U.S. Environmental Protection Agency (EPA)

In 1974, the EPA Office of Noise Abatement and Control published a report entitled *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. Although this document does not constitute EPA regulations or standards, it is useful in identifying noise levels at which increased levels of annoyance would be anticipated. Based on an annual-average day-night noise level (expressed as L_{dn} or DNL), the document states that "undue interference with activity and annoyance" will not occur if outdoor noise levels in residential areas are below 55 dBA L_{dn} and indoor levels are below 45 dBA L_{dn} (EPA 1974).

Department of Housing and Urban Development (HUD)

The Federal Department of Housing and Urban Development (HUD) guidelines for the acceptability of residential land uses are set forth in the Code of Federal Regulations, Title 24, Part 51, "Environmental Criteria and Standards." These guidelines identify a noise exposure of 65 dBA L_{dn}, or less, as acceptable. Exterior noise levels of 65 to 75 dBA L_{dn} are considered normally acceptable, provided appropriate sound attenuation is provided to reduce interior noise levels to within acceptable levels. Exterior noise levels above 75 dBA L_{dn} are considered unacceptable. The goal of the interior noise levels for residential, hotel, and hospital/nursing home uses is 45 dBA L_{dn}. These guidelines apply only to new construction supported by HUD grants and are not binding upon local communities (Caltrans 2002a.)

STATE

California Building Code

Title 24 of the California Code of Regulations contains standards for allowable interior noise levels associated with exterior noise sources (California Building Code, 1998 edition, Volume 1, Appendix Chapter 12, Section 1208A). The standards apply to new hotels, motels, dormitories, apartment houses, and dwellings other than detached single-family residences. The standards state that the interior noise level attributable to exterior sources shall not exceed 45 dBA CNEL in any habitable room. Proposed multi-family residential structures to be located where the CNEL exceeds 60 dBA shall require an acoustical analysis showing that the proposed building design would achieve the prescribed allowable interior noise standard.

State of California General Plan Guidelines

The *State of California General Plan Guidelines* (State of California 2003), published by the Governor's Office of Planning and Research (OPR), also provides guidance for the acceptability of projects within specific noise environments. Based on these guidelines, residential uses, churches, libraries, and hospitals are "normally unacceptable" in areas where the exterior noise level exceeds 70 dBA CNEL and "conditionally acceptable" within exterior noise environments between 60 and 70 dBA CNEL. Noise levels of up to 60 dBA CNEL are considered "normally acceptable". The goal of these noise standards is, in part, to allow for a "normally acceptable" interior noise level of 45 dBA CNEL. For instance, assuming an average exterior-to-interior noise reduction of 15 dBA (with windows partially open), an exterior noise level of 60 dBA CNEL, or less, would be sufficient to achieve an interior noise level of 45 dBA CNEL. Higher exterior noise levels may be allowed provided that noise-reduction measures are incorporated to achieve acceptable interior noise levels. Within "conditionally acceptable" exterior noise environments, conventional construction with incorporation of fresh air circulation systems sufficient to allow windows to remain closed would normally suffice. Compliance with current building code requirements and with windows closed, exterior-to-interior noise reductions typically average approximately 25 dBA or more. However, the state stresses that these guidelines can be modified to reflect communities' sensitivities to noise. Adjustment factors may also be used in order to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution. The State recommended noise criteria for land use compatibility are summarized in **Table 3**.

LOCAL

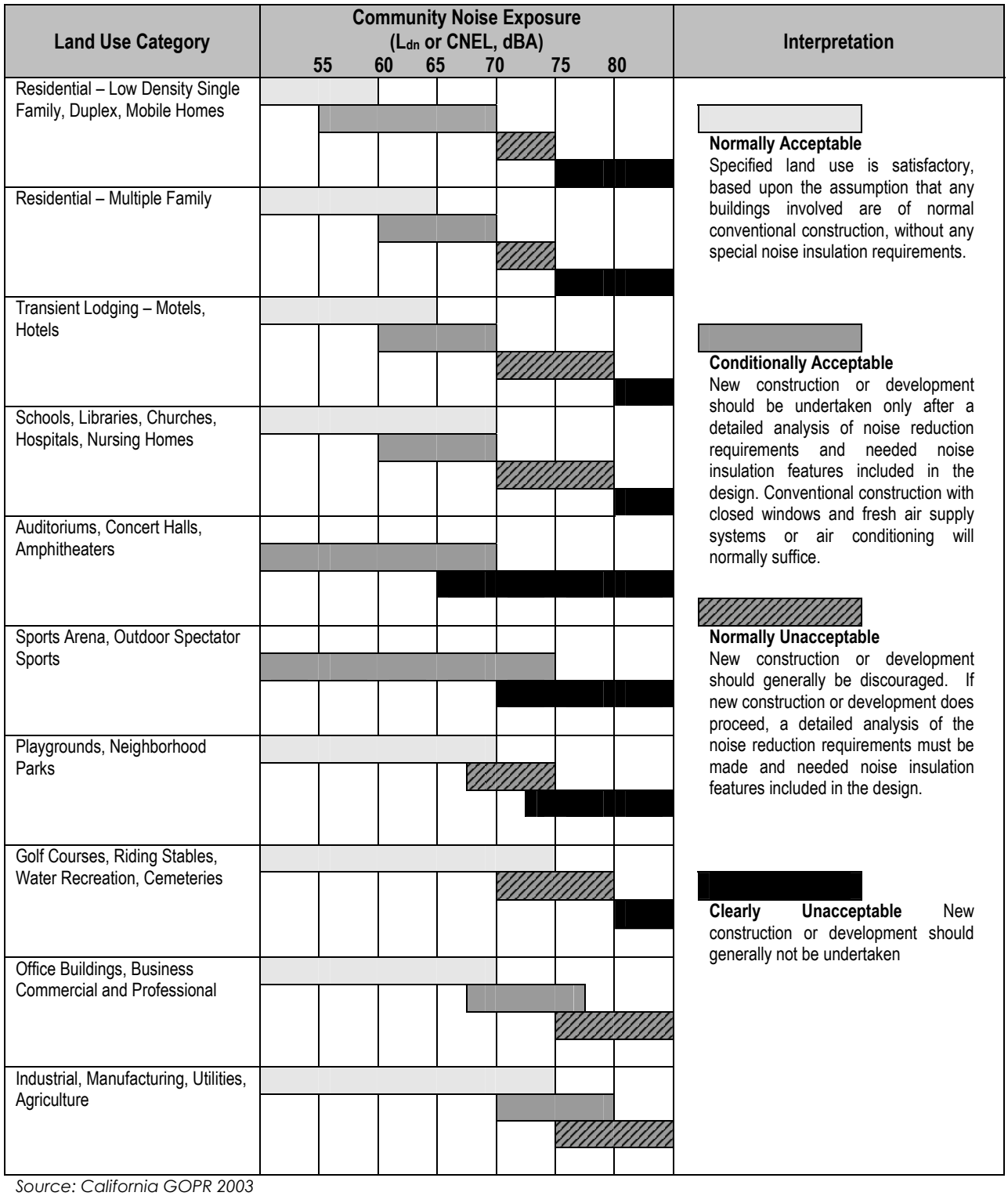
City of Belvedere General Plan Noise Element

The Noise Element of the Belvedere General Plan includes an evaluation of noise sources located within and near the community that could adversely affect community residents. The City's General Plan Noise Element includes a goal to maintain noise levels compatible with public health and safety within the City. To accomplish this, the City's General Plan includes a policy that required the City of Belvedere to "develop a comprehensive Noise Ordinance regulating the hours and days of construction activity, limiting the use of yard/garden and construction equipment which generates significant noise, and regulating amplified sound systems used outdoors, and other noise sources considered objectionable by the community (City of Belvedere 1994)." This General Plan policy has been implemented through the adoption of the City's noise control ordinance (Municipal Code, Title 8, Health & Safety, Chapter 8.10, Noise).

City of Belvedere Municipal Code

The City of Belvedere Municipal Code (Title 8, Health & Safety, Chapter 8.10, Noise) includes various provisions intended to protect community residents from prolonged unnatural or unusual noise levels that could cause increased levels of annoyance, discomfort, or injury. Examples of noise sources subject to the City's municipal Code include, but are not limited to, radios, stereo equipment, musical instruments, landscape maintenance equipment, amplified sound systems, and construction equipment. The operations of nuisance noise sources, such as amplified sound systems, are typically prohibited between the hours of 9 p.m. and 7 a.m., Sunday through Thursday, and between 11 p.m. to 7 a.m. on Fridays and Saturdays. Section 8.10.030 the City's Municipal Code specifically prohibits the use of portable gasoline engine powered leaf blowers. The municipal code also limits noise-generating construction and demolition activities to between the hours of 8:00 a.m. and 5:00 p.m. Monday through Friday. Noise-generating construction and demolition activities are prohibited on weekends and City-recognized holidays. The City Manager may, upon his discretion, grant written exceptions to this condition whenever such work can be demonstrated to be necessary to protect the public's health and safety (City of Belvedere 2009b).

TABLE 3
STATE OF CALIFORNIA
LAND USE COMPATIBILITY NOISE CRITERIA



Source: California GOPR 2003

IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

The impact analysis provided below is based on the following State CEQA Guidelines Appendix G thresholds of significance. A noise impact is considered significant if implementation of the General Plan Update would:

- Result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or of applicable standards of other agencies.

- Result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

- Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

- Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

- Expose people residing or working in the project area to excessive noise levels for a project located within an airport land use plan area or, where such a plan has not been adopted, or within two miles of a public airport or a public use airport.

- Expose people residing or working in the project area to excessive noise levels for a project within the vicinity of a private airstrip.

METHODOLOGY

A combination of use of existing literature and general application of accepted noise thresholds was used to determine the impact of ambient noise levels resulting from and on development within the General Plan Planning Area. Short- and long-term impacts associated with transportation and non-transportation noise sources were qualitatively assessed based on potential increases in ambient noise levels anticipated to occur at noise-sensitive land uses. Traffic noise levels along major area roadways were estimated using the FHWA Highway Traffic Noise Prediction model (FHWA-RD-77-108.) The FHWA modeling was based upon the Calveno noise-emission factors for automobiles and medium- and heavy-duty trucks. Input data used in the model included average-daily traffic volumes, day/night percentages of automobiles and medium and heavy trucks, vehicle speeds, ground attenuation factors, roadway widths, and ground elevation data. Traffic volumes were derived from the traffic analysis prepared for this project. Roadway data and vehicle distribution percentages were based on traffic data obtained during the site reconnaissance conducted for this project, as well as heavy-duty truck distribution percentages for major highways obtained from Caltrans.

TABLE 4
NOISE IMPACT SUMMARY

Issues	Potentially Significant Impact	Less Than Significant with the Incorporated Mitigation	Less Than Significant Impact	No Impact
a) The exposure of persons to, or the generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			✓	
b) The exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?			✓	
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?			✓	
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?		✓		
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				✓
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				✓

DISCUSSION

The City is not located within an airport land use plan area or within two miles of a public or private use airport. Implementation of the proposed General Plan Update would not expose people residing or working in the project area to excessive noise levels. As a result, no impact is anticipated to occur with regard to the exposure of sensitive receptors to aircraft noise levels. This impact is, therefore, not discussed further in this report.

Temporary Construction Noise Impacts

Impact 1 *Construction activities associated with the proposed General Plan Update could result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project and could result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or of applicable standards of other agencies or neighboring jurisdictions. This impact is considered* ***potentially significant****.*

Construction noise typically occurs intermittently and varies depending upon the nature or phase (e.g., demolition/land clearing, grading and excavation, erection) of construction. Noise generated by construction equipment, including earth movers, material handlers, and portable generators, can reach high levels. Temporary increases in ambient noise levels, particularly during the nighttime hours, could result in increased levels of annoyance and potential sleep disruption. Although noise ranges were found to be similar for all construction phases, the grading phase tends to involve the most equipment and resulted in slightly higher average-hourly noise levels. Typical noise levels for individual pieces of construction equipment and distances to predicted noise contours are summarized in **Table 5**. As depicted, individual equipment noise levels typically range from approximately 74 to 88 dBA L_{eq} at 50 feet. Typical operating cycles may involve 2 minutes of full power, followed by 3 or 4 minutes at lower settings. Intermittent noise levels can range from approximately 77 to 95 dBA L_{max}, the loudest of which include the use of pile drivers and impact devices (e.g., hoe rams, impact hammers).

Assuming a construction noise level of 88 dBA L_{eq} and an average attenuation rate of 6 dBA per doubling of distance from the source, construction activities located within approximately 1,330 feet of noise-sensitive receptors could reach levels of approximately 60 dBA L_{eq}. Depending on distances from nearby noise-sensitive land uses and the specific construction activities conducted, construction activities may result in temporary and periodic increases in ambient noise levels at nearby receptors. Of particular concern, are activities that occur during the evening and nighttime hours. Construction activities that occur during these more noise-sensitive hours may result in increased levels of annoyance and potential sleep disruption to occupants of nearby noise-sensitive land uses (e.g., residential dwellings, schools). As a result, because such increases could result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project and could result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or of applicable standards of other agencies or neighboring jurisdictions, this impact is considered **potentially significant**.

TABLE 5
TYPICAL CONSTRUCTION EQUIPMENT NOISE

Equipment	Typical Noise Level (dBA) 50 feet from Source		Distance to Noise Contours (feet, dBA L_{eq})		
	L_{max}	L_{eq}	70 dBA	65 dBA	60 dBA
Air Compressor	80	76	105	187	334
Auger/Rock Drill	85	78	133	236	420
Backhoe/Front End Loader	80	76	105	187	334
Blasting	94	74	83	149	265
Boring Hydraulic Jack/Power Unit	80	77	118	210	374
Compactor (Ground)	80	73	74	133	236
Concrete Batch Plant	83	75	94	167	297
Concrete Mixer Truck	85	81	187	334	594
Concrete Mixer (Vibratory)	80	73	74	133	236
Concrete Pump Truck	82	75	94	167	297
Concrete Saw	90	83	236	420	748

Equipment	Typical Noise Level (dBA) 50 feet from Source		Distance to Noise Contours (feet, dBA L_{eq})		
	L_{max}	L_{eq}	70 dBA	65 dBA	60 dBA
Crane	85	77	118	210	374
Dozer/Grader/Excavator/Scraper	85	81	187	334	594
Drill Rig Truck	84	77	118	210	374
Generator	82	79	149	265	472
Gradall	85	81	187	334	594
Hydraulic Break Ram	90	80	167	297	529
Jack Hammer	85	78	133	236	420
Impact Hammer/Hoe Ram (Mounted)	90	83	236	420	748
Pavement Scarifier/Roller	85	78	133	236	420
Paver	85	82	210	374	667
Pile Driver (Impact/Vibratory)	95	88	420	748	1,330
Pneumatic Tools	85	82	210	374	667
Pumps	77	74	83	149	265
Truck (Dump/Flat Bed)	84	80	167	297	529
Sources: FTA 2006, FHWA 2008					

Proposed General Plan Policies that Provide Mitigation

Policy N-3. *Noise due to Construction Impacts: In order to address Belvedere's concerns regarding new construction and development that creates noise which adversely affects residents:*

Actions:

N-3.2. *Approval from the Building Permit and Planning Departments is required to be issued for all construction requirements in the City. The hours for construction shall continue to be limited from 8 a.m. to 5 p.m. Monday through Friday. The City Manager may, upon discretion, grant written exceptions to this condition whenever such work can be demonstrated to be necessary to protect the public's health and safety.*

Policy N-4. *Noise impacts from residences: Minimize noise generated from outdoor uses and events such as exterior speakers, spa and pool equipment, emergency generators, multiple air conditioning units, incline elevators/hillavators, as well as infrequent loud noises such as pile driving that can be disturbing to nearby homes.*

Actions:

N-4.4. *Erratic loud noise sources such as pile driving shall conform to the City's mandated construction hours of 9 a.m. to 5 p.m. on weekdays, and shall not be used on weekends.*

Due to the short-term nature of construction noise, the intermittent frequency of construction noise, and the required compliance with the City's General Plan Policy Action Items N-3.2 and

N-4.4, which would impose restrictions on the hours of construction, construction noise level increases would not result in a substantial temporary or periodic increase in ambient noise levels above levels existing without the project and will not result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or of applicable standards of other agencies. The impact of new construction noise is reduced to a **less than significant** level.

Mitigation Measures

None required.

Traffic-Generated Noise Impacts

Impact 2 *The proposed General Plan Update could result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project and could result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or of applicable standards of other agencies or neighboring jurisdictions, as a result of increased traffic on the roadway network. Projected increases in traffic noise levels could adversely affect noise-sensitive land uses. In addition, future development of noise-sensitive land uses could be exposed to roadway noise levels in excess of the City's noise standards. This impact would be considered* ***potentially significant****.*

Major noise sources in the planning area consist predominantly of vehicle traffic on area roadways. Major roadway segments in the City include Tiburon Boulevard, San Rafael Avenue, and Beach Road. Traffic noise levels along major area roadways were estimated using the FHWA Highway Traffic Noise Prediction model (FHWA-RD-77-108) for existing and future cumulative (year 2020) conditions. Predicted existing and future cumulative traffic noise levels and distances to projected noise contours are summarized in **Tables 6** and **7**, respectively. It is important to note that predicted noise contours are approximate and do not take into account shielding or reflection of noise due to intervening terrain or structures. As a result, predicted noise contours should be considered to represent bands of similar noise exposure along roadway segments, rather than absolute lines of demarcation. Although these predicted noise contours are not considered site-specific, they are useful for determining potential land use conflicts. Predicted increases in future cumulative traffic noise levels, in comparison to existing traffic noise levels, are summarized in **Table 8**.

Under future cumulative conditions with buildout of the General Plan Update and in comparison to existing conditions (**Table 8**), the General Plan Update would contribute to increased traffic noise levels of approximately 2.7 dBA, or less. The proposed General Plan Update would not result in noticeable increases (i.e., 3.0 dBA or greater) in traffic noise levels along area roadways. The proposed General Plan Update would not contribute to a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. Predicted future cumulative traffic noise levels for Tiburon Boulevard are depicted in **Figure 3**.

As discussed earlier in this report, noise-sensitive land uses are generally considered to be "normally acceptable" within exterior noise environments up to 60 dBA CNEL/L_{dn} and "conditionally acceptable" up to 70 dBA CNEL/L_{dn}. As noted in **Table 7** and with the exception of Tiburon Boulevard, the predicted 60 dBA CNEL/L_{dn} noise contours for area roadways would not extend beyond local roadway right-of-ways. The predicted 60 dBA CNEL/L_{dn} noise contour

FIGURE 3
PREDICTED FUTURE CUMULATIVE TRAFFIC NOISE CONTOURS – TIBURON BOULEVARD

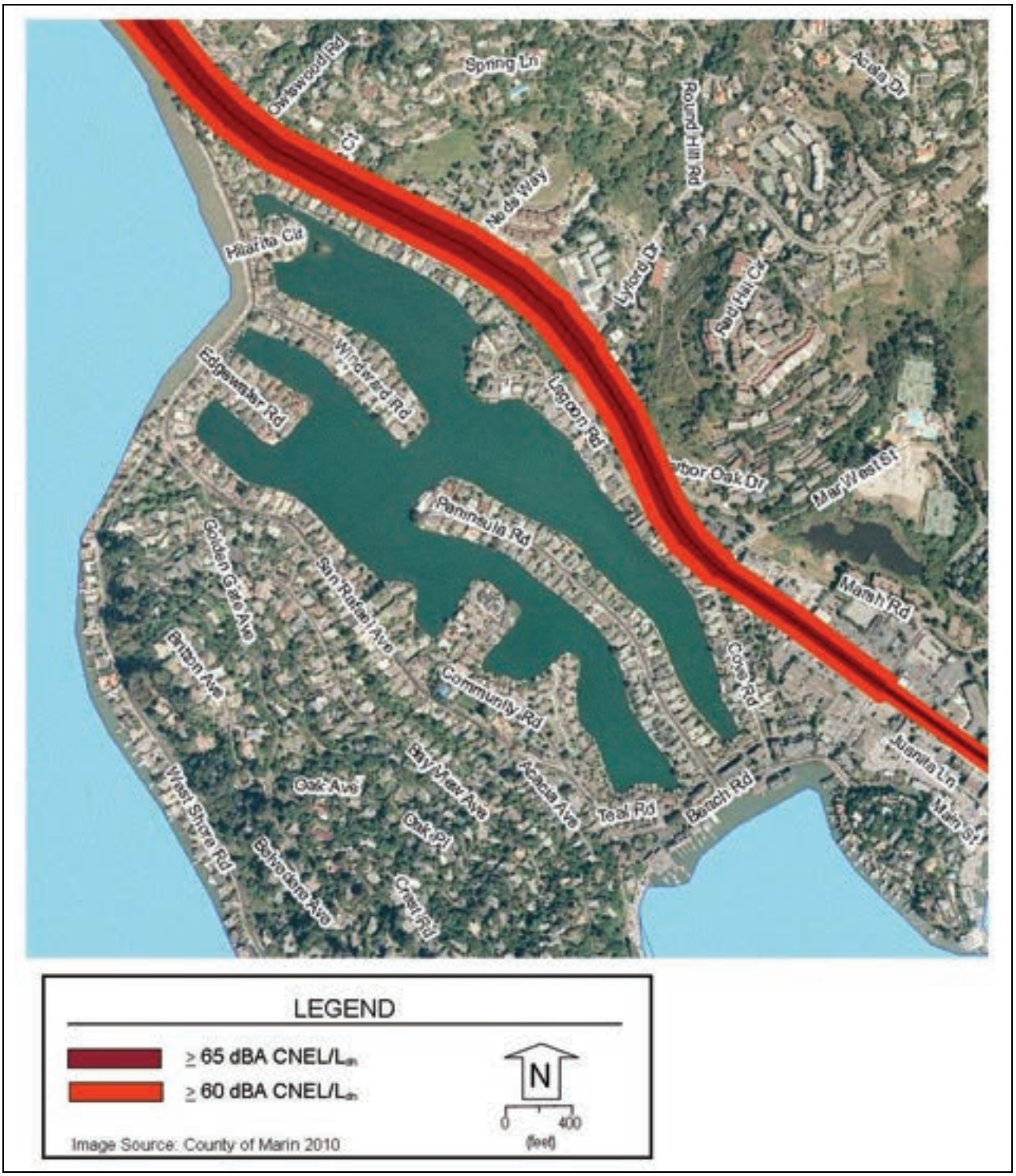


TABLE 6
TRAFFIC NOISE LEVELS - EXISTING CONDITIONS

Roadway Segment	ADT	CNEL/L_{dn} at 50 Feet from Near Travel-lane Centerline	Distance (feet) from Roadway Centerline to CNEL/L_{dn} Contour		
			70	65	60
Tiburon Blvd., West of San Rafael Ave.	16,750	66.43	--	70	150
Tiburon Blvd., San Rafael Ave. to Mar West Ave.	13,650	65.54	--	61	131
Tiburon Blvd., Mar West Ave. to Beach Road	10,470	61.71	--	--	87
Tiburon Blvd., East of Beach Road	5.850	59.18	--	--	61
Mar West Ave., North of Tiburon Blvd.	1,810	51.72	--	--	--
San Rafael Ave., South of Tiburon Blvd.	3,600	54.71	--	--	--
Beach Road, Tiburon Blvd. to Main Street	4,900	56.05	--	--	--
Beach Road, South of Main Street	3,100	54.06	--	--	--

Notes: Traffic noise levels were estimated using the FHWA Highway Traffic Noise Prediction model (FHWA-RD-77-108) Traffic volumes were derived from the traffic analysis prepared for this project and assume that p.m. peak-hour volumes constitute approximately ten percent of average-daily volumes. Roadway data and vehicle distribution percentages were based on traffic data obtained during the site reconnaissance conducted for this project, as well as heavy-duty truck distribution percentages obtained from the California Department of Transportation (Caltrans).
-- Within Roadway Right-of-Way

TABLE 7
PREDICTED TRAFFIC NOISE LEVELS – FUTURE CUMULATIVE (YEAR 2020) CONDITIONS

Roadway Segment	ADT	CNEL/L_{dn} at 50 Feet from Near Travel-lane Centerline	Distance (feet) from Roadway Centerline to CNEL/L_{dn} Contour		
			70	65	60
Tiburon Blvd., West of San Rafael Ave.	22,080	67.63	--	84	180
Tiburon Blvd., San Rafael Ave. to Mar West Ave.	18,720	66.92	--	75	161
Tiburon Blvd., Mar West Ave. to Beach Road	13,760	62.90	--	--	104
Tiburon Blvd., East of Beach Road	8,360	60.73	--	--	76
Mar West Ave., North of Tiburon Blvd.	3,400	54.46	--	--	--
San Rafael Ave., South of Tiburon Blvd.	3,860	55.01	--	--	--
Beach Road, Tiburon Blvd. to Main Street	5,180	56.29	--	--	--
Beach Road, South of Main Street	3,830	54.98	--	--	--

Notes: Traffic noise levels were estimated using the FHWA Highway Traffic Noise Prediction model (FHWA-RD-77-108) Traffic volumes were derived from the traffic analysis prepared for this project and assume that p.m. peak-hour volumes constitute approximately ten percent of average-daily volumes. Roadway data and vehicle distribution percentages were based on traffic data obtained during the site reconnaissance conducted for this project, as well as heavy-duty truck distribution percentages obtained from the California Department of Transportation (Caltrans).
-- Within Roadway Right-of-Way

TABLE 8
PREDICTED CHANGES IN TRAFFIC NOISE LEVELS
FUTURE CUMULATIVE (YEAR 2020) CONDITIONS AS COMPARED TO EXISTING CONDITIONS

Roadway Segment	CNEL/L_{dn} at 50 Feet from Near Travel-lane Centerline		Predicted Change in Noise Levels (CNEL/L_{dn})
	Existing	Future Cumulative (Year 2020)	
Tiburon Blvd., West of San Rafael Ave.	66.43	67.63	1.20
Tiburon Blvd., San Rafael Ave. to Mar West Ave.	65.54	66.92	1.38
Tiburon Blvd., Mar West Ave. to Beach Road	61.71	62.90	1.19
Tiburon Blvd., East of Beach Road	59.18	60.73	1.55
Mar West Ave., North of Tiburon Blvd.	51.72	54.46	2.74
San Rafael Ave., South of Tiburon Blvd.	54.71	55.01	0.30
Beach Road, Tiburon Blvd. to Main Street	56.05	56.29	0.24
Beach Road, South of Main Street	54.06	54.98	0.92

Notes: Traffic noise levels were estimated using the FHWA Highway Traffic Noise Prediction model (FHWA-RD-77-108) Traffic volumes were derived from the traffic analysis prepared for this project and assume that p.m. peak-hour volumes constitute approximately ten percent of average-daily volumes. Roadway data and vehicle distribution percentages were based on traffic data obtained during the site reconnaissance conducted for this project, as well as heavy-duty truck distribution percentages obtained from the California Department of Transportation (Caltrans).

of Tiburon Boulevard would range from a distance of approximately 180 feet from the roadway centerline, west of San Rafael Boulevard, to approximately 76 feet from the roadway centerline, east of Beach Road. The projected 70 dBA CNEL/Ldn noise contour for major roadways is not predicted to extend beyond the roadway right-of-way. Development of noise-sensitive land uses could, however, potentially occur within the projected "normally acceptable" noise contours of major roadways (i.e., 60 dBA CNEL/Ldn), particularly along Tiburon Boulevard. For this reason, implementation of the General Plan Update could result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or of applicable standards of other agencies as a result of increased traffic noise levels. As a result, exposure to vehicular traffic noise on area roadways would be considered a potentially significant impact.

Proposed General Plan Policies that Provide Mitigation

Policy N-1. *Noise and Compatibility Standards: The City shall use the Noise and Land Compatibility Standards shown in Figure N-1, the noise level performance standards in Tables N-1 and N-2, as a guide for future planning and development decisions.*
Actions:
N-1.1: *Continue to apply the current Noise Ordinance to regulate construction noise, amplified sound, hours of use for equipment, etc.*

Policy N-2. *New development of noise-sensitive land uses proposed in noise-impacted areas shall incorporate effective mitigation measures into the project design to reduce exterior and interior noise levels to acceptable levels:*
Actions:

N-2.1. For new single-family residential development, maintain a standard of 60 L_{dn} (day/night average noise level) for exterior noise in private use areas.

N-2.2. For new multi-family residential development maintain a standard of 65 L_{dn} in community outdoor recreation areas.

Implementation of the proposed General Plan Update Policy N-1 and N-2 would reduce potential transportation noise impacts. Future development projects would be required to analyze project-related noise impacts and incorporate necessary noise-reduction measures sufficient to achieve the applicable noise standards of the City's Noise Element. Implementation of these policies and actions will help to reduce impacts associated with proposed development. Noise-reduction measures typically implemented to reduce traffic noise include increased insulation, setbacks, and construction of sound barriers. With implementation of the proposed General Plan Update policies, this impact would be considered **less than significant.**

Mitigation Measures

None required.

Exposure to Stationary-Source Noise

Impact 3 *Subsequent development associated with the proposed General Plan Update could result in new noise-sensitive land uses encroaching upon existing or proposed stationary noise sources or new stationary noise sources encroaching upon existing or proposed noise-sensitive land uses. This could result in a substantial permanent increase in ambient noise levels in the project vicinity above existing levels or could result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or of applicable standards of other agencies. As a result, this impact is considered* ***potentially significant****.*

Implementation of the proposed General Plan Update could result in the future development of land uses that generate noise levels in excess of applicable City noise standards. Such land uses may include commercial, industrial, institutional (public schools), and recreational. In addition, new noise-sensitive land uses could be located in areas of existing stationary noise sources. Exposure of noise-sensitive land uses to non-transportation noise levels could result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project and could result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or of applicable standards of other agencies. As a result, this impact would be considered **potentially significant**.

Proposed General Plan Policies that Provide Mitigation

Policy N-1. Noise and Compatibility Standards: The City shall use the Noise and Land Compatibility Standards shown in Figure N-1, the noise level performance standards in Tables N-1 and N-2, as a guide for future planning and development decisions.

Actions:

N-1.1 Continue to apply the current Noise Ordinance to regulate construction noise, amplified sound, hours of use for equipment, etc.

Policy N-3. Noise due to Construction Impacts: In order to address Belvedere's concerns regarding new construction and development that creates noise which adversely affects residents:

Actions:

N-3.1 The City of Belvedere shall not approve of any mechanical equipment that exceeds 55 dBA at the property line without appropriate mitigation measures.

Policy N-4. Noise impacts from residences: Minimize noise generated from outdoor uses and events such as exterior speakers, spa and pool equipment, emergency generators, multiple air conditioning units, incline elevators/hillavators, as well as infrequent loud noises such as pile driving that can be disturbing to nearby homes.

Actions: The City shall hence establish the following nuisance noise guidelines:

N-4.1 A Design Review shall be conducted that will address the design of exterior speakers and other equipment.

N-4.2 The operations of nuisance noise sources, such as amplified sound systems, shall typically be prohibited between the hours of 9 p.m. and 7 a.m., Sunday through Thursday, and between 11 p.m. to 7 a.m. on Fridays and Saturdays. These policies shall also include amplified sounds in neighborhoods, such as, HVAC equipment, and landscape equipment.

N-4.3 Exterior speakers should be discouraged. If installed, exterior speakers shall be minimized and shall face the subject residence rather than being directed outward toward the hillside and water. Amplified sound shall not be directed towards the neighboring properties or the water. Sound from exterior speakers and equipment will be contained by appropriate insulating features

N-4.4 Erratic loud noise sources such as pile driving shall conform to the City's mandated construction hours of 9 a.m. to 5 p.m. on weekdays, and shall not be used on weekends.

N-4.5 Hillavators installed in the City shall provide adequate noise buffers such as fencing so as to reduce the noise impacts to 60 dBA.

N-4.6 Discourage the use of gas-powered landscape equipment and encourage the use of electric versions.

Implementation of the above policies and standards would reduce noise associated with new stationary noise sources and the placement of new noise-sensitive land uses over which the City has jurisdiction (e.g., commercial and industrial sites, residential uses). However, some existing stationary-source noise impacts cannot be mitigated to a less than significant level due to a lack of quantitative noise standards within the City's existing municipal code. Of particular concern would be existing sources located in proximity to noise-sensitive land uses (e.g., residential), such as activities conducted at commercial uses located near the harbor. To reduce stationary-source noise impacts associated with existing uses to a less than significant level, the following mitigation measure is proposed:

Mitigation Measures

- The City shall adopt and apply quantitative noise standards for stationary noise sources, to be incorporated into the City of Belvedere Municipal Code (Title 8, Health & Safety, Chapter 8.10, Noise) for the resolution of noise complaints associated with existing sources.

Exposure to Groundborne Vibration

Impact 4 *The proposed General Plan Update could result in exposure of persons to or generation of excessive groundborne vibration levels. As a result, this impact is considered potentially significant.*

The effects of ground vibration can vary from no perceptible effects at the lowest levels, low rumbling sounds and detectable vibrations at moderate levels, and slight damage to nearby structures at the highest levels. At the highest levels of vibration, damage to structures is primarily architectural (e.g., loosening and cracking of plaster or stucco coatings) and rarely results in structural damage. The effects of ground vibration are influenced by the duration of the vibration and the distance from the vibration source.

There are no federal, state, or local regulatory standards for vibration. However, various criteria have been established to assist in the evaluation of vibration impacts. For instance, Caltrans has developed vibration criteria based on human perception and structural damage risks. For most structures, Caltrans considers a peak-particle velocity (ppv) threshold of 0.2 inches per second (in/sec) to be the level at which architectural damage (i.e., minor cracking of plaster walls and ceilings) to normal structures may occur. Below 0.10 in/sec there is "virtually no risk of 'architectural' damage to normal buildings." Damage to historic or ancient buildings could occur at levels of 0.08 in/sec ppv. In terms of human annoyance, continuous vibrations in excess of 0.1 in/sec ppv are identified by Caltrans as the minimum level perceptible level for ground vibration. Short periods of ground vibration in excess of 0.2 in/sec ppv can be expected to result in increased levels of annoyance to people within buildings (Caltrans, 2002b).

Groundborne vibration sources located within the City that could potentially affect future development would be primarily associated with construction activities. With the exception of pavement breaking and pile driving, construction activities and related equipment typically generate groundborne vibration levels of less than 0.2 in/sec, which is the architectural damage risk threshold recommended by Caltrans. Based on Caltrans measurement data, use of off-road tractors, dozers, earthmovers, and haul trucks generates groundborne vibration levels of less than 0.10 in/sec, or one half of the architectural damage risk level, at 10 feet. The highest vibration level associated with a pavement breaker was 2.88 in/sec at 10 feet. During pile driving, vibration levels near the source depend mainly on the soil's penetration resistance as well as the type of pile driver used. Impact pile drivers tend to generate higher vibration levels than vibratory or drilled piles. Groundborne vibration levels of pile drivers can range from approximately 0.17 to 1.5 in/sec ppv. Caltrans indicates that the distance to the 0.2 in/sec ppv criterion for pile driving activities would occur at a distance of approximately 50 feet. However, as with construction-generated noise levels, pile driving can result in a high potential for human annoyance from vibrations, and pile-driving activities are typically considered as potentially significant if these activities are performed within 200 feet of occupied structures (Caltrans, 2002b). As a result, this impact would be considered **potentially significant**.

Proposed General Plan Policies that Provide Mitigation

Policy N-3. Noise due to Construction Impacts: In order to address Belvedere's concerns regarding new construction and development that creates noise which adversely affects residents:

Actions:

N-3.2. Approval from the Building Permit and Planning Departments is required to be issued for all construction requirements in the City. The hours for construction shall continue to be limited from 8 a.m.

to 5 p.m. Monday through Friday. The City Manager may, upon discretion, grant written exceptions to this condition whenever such work can be demonstrated to be necessary to protect the public's health and safety.

Policy N-4. Noise impacts from residences: Minimize noise generated from outdoor uses and events such as exterior speakers, spa and pool equipment, emergency generators, multiple air conditioning units, incline elevators/hillavators, as well as infrequent loud noises such as pile driving that can be disturbing to nearby homes.

Actions:

N-4.4. Erratic loud noise sources such as pile driving shall conform to the City's mandated construction hours of 9 a.m. to 5 p.m. on weekdays, and shall not be used on weekends.

Due to the short-term nature of construction vibrations, the intermittent frequency of construction vibrations, and the required compliance with the City's hourly restrictions related to construction activities, construction vibration level increases will not result in exposure of persons to or generation of excessive groundborne vibration. By restricting the hours of construction to avoid vibrations during times when it could potentially be more of a nuisance, the impact of new construction vibration is reduced to a **less than significant** level through the application of the General Plan Update's mitigating policies and associated action items. In addition, individual development projects will be subject to site-specific environmental review, which will necessitate identification of site-specific mitigation in the event that significant impacts are identified.

Mitigation Measures

None required.

Cumulative Traffic-Generated Noise Impacts

Impact 5 Implementation of the proposed City of Belvedere Housing Element Update and General Plan Update would not contribute to a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. However, as discussed in Impact 2, development of noise-sensitive land uses could potentially occur within the projected future 60 dBA CNEL noise contours of major roadways. Therefore, noise impacts are considered ***potentially cumulatively considerable****.*

The cumulative noise setting includes 2020 development anticipated within Marin County in addition to buildout of the proposed General Plan Update. Development in surrounding communities may also contribute to traffic noise levels along some roadway segments. Cumulative development would alter the intensity of land uses in the region and increase housing, employment, shopping, and recreational opportunities. Such development would result in new noise generators and noise-sensitive land uses and potentially increase land use conflicts and hazards associated with noise.

As identified in **Table 8**, implementation of the proposed General Plan Update, in combination with anticipated growth by the year 2020, would result in projected increases in traffic noise levels along major roadway segments of approximately 2.7 dBA CNEL/L_{dn}, or less. Implementation of the proposed General Plan Update would not contribute to a noticeable

increase (i.e., 3.0 dBA, or greater) in traffic noise levels. The proposed General Plan Update would not contribute to a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. However, as discussed in **Impact 2**, development of noise-sensitive land uses could potentially occur within the projected 60 dBA CNEL noise contours of major roadways, particularly Tiburon Boulevard. For this reason, implementation of the General Plan Update could result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or of applicable standards of other agencies as a result of increased traffic noise levels. As a result, exposure to vehicular traffic noise on area roadways would be considered a **potentially significant** impact.

Implementation of the proposed General Plan Update Policy N-1 and N-2, as identified in Impact 2, would reduce potential transportation noise impacts. Future development projects would be required to analyze project-related noise impacts and incorporate necessary noise-reduction measures sufficient to achieve the applicable noise standards of the City's Noise Element. Implementation of these policies and actions will help to reduce impacts associated with proposed development. Noise-reduction measures typically implemented to reduce traffic noise include increased insulation, setbacks, and construction of sound barriers. With implementation of the proposed General Plan Update policies, this impact would be considered **less than significant.**

Mitigation Measures

None required.

REFERENCES

Belvedere, City of. May 19, 2009(a). Draft Housing Element.

Belvedere, City of. Accessed: November 2, 2009(b). City of Belvedere Municipal Code, Title 8, Health & Safety, Chapter 8.10, Noise.

Belvedere, City of. 1994 City of Belvedere General Plan, Noise Element.

California Department of Transportation (Caltrans). Accessed: September 2009. IS/EA Annotated Outline. Available at URL: http://www.dot.ca.gov/ser/vol1/sec4/ch31ea/chap31ea.htm.

California Department of Transportation (Caltrans). 2002a. *California Airport Land Use Planning Handbook.*

California Department of Transportation (Caltrans). 2002b. *Transportation Related Earthborne Vibrations.*

California Department of Transportation (Caltrans). 2007. *2006 Annual Average Daily Truck Traffic on the California State Highway System.*

California Governor's Office of Planning and Research (OPR). 2003. General Plan Guidelines.

Conneally, Dennis. General Manager, San Francisco Yacht Club. November 6, 2009. Telephone Communication with Kurt Legleiter, Principal, AMBIENT Air Quality & Noise Consulting.

County of Marin. MarinMap. Website Url: http://mmgis.marinmap.org/dnn4/. Accessed: February 8, 2010.

Crane Transportation Group. December 2009. Traffic and Circulation Analysis for the Belvedere General Plan Update.

Federal Interagency Committee on Noise (FICON). October 22, 2000. Discussion of Methodologies of Measuring Noise Impact.

San Francisco Yacht Club (SFYC). Accessed: November 2, 2009. Website Url: http://www.sfyc.org/.

United States Department of Transportation, Federal Transit Administration (FTA). 2006. *Transit Noise and Vibration Impact Assessment*.

United States Department of Transportation, Federal Highway Administration (FHWA). 2008. *Roadway Construction Noise Model. Version 1.1*.

United States Environmental Protection Agency (U.S. EPA). 1971. Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances.

United States Environmental Protection Agency (U.S. EPA). 1974. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety.

APPENDIX A
TRAFFIC NOISE PREDICTION

EXISTING CONDITIONS

TIBURON BLVD, WEST OF SAN RAFAEL AVE

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ADT: 16750 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 66.43
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	69.6	149.5	321.9

TIBURON BLVD, SAN RAFAEL AVE TO MAR WEST AVE

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ADT: 13650 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 65.54
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	60.8	130.5	280.8

TIBURON BLVD, MAR WEST AVE TO BEACH ROAD

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ADT: 10470 SPEED: 30 ACTIVE HALF WIDTH (FT): 18
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 61.71
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	87.1	184.4

TIBURON BLVD, EAST OF BEACH ROAD

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ADT: 5850 SPEED: 30 ACTIVE HALF WIDTH (FT): 18
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 59.18
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	60.5	125.8

MAR WEST AVE, NORTH OF TIBURON BLVD
TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	76.14	12.58	9.46
M-TRUCKS	1.56	0.09	0.14
H-TRUCKS	0.01	0.01	0.01

ADT: 1810 SPEED: 25 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 51.72
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

SAN RAFAEL AVE, SOUTH OF TIBURON BLVD
TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	76.14	12.58	9.46
M-TRUCKS	1.56	0.09	0.14
H-TRUCKS	0.01	0.01	0.01

ADT: 3600 SPEED: 25 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 54.71
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	53.6

BEACH ROAD, TIBURON BLVD TO MAIN STREET
TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	76.14	12.58	9.46
M-TRUCKS	1.56	0.09	0.14
H-TRUCKS	0.01	0.01	0.01

ADT: 4900 SPEED: 25 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 56.05
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	65.7

BEACH ROAD, SOUTH OF MAIN STREET
TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	76.14	12.58	9.46
M-TRUCKS	1.56	0.09	0.14
H-TRUCKS	0.01	0.01	0.01

ADT: 3100 SPEED: 25 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 54.06
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

FUTURE CUMULATIVE (YR 2020) CONDITIONS

TIBURON BLVD, WEST OF SAN RAFAEL AVE

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ADT: 22080 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 67.63
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	83.6	179.7	386.9

TIBURON BLVD, SAN RAFAEL AVE TO MAR WEST AVE

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ADT: 18720 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 66.92
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	74.9	161.0	346.6

TIBURON BLVD, MAR WEST AVE TO BEACH ROAD

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ADT: 13760 SPEED: 30 ACTIVE HALF WIDTH (FT): 18
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 62.90
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	103.8	221.0

TIBURON BLVD, EAST OF BEACH ROAD

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ADT: 8360 SPEED: 30 ACTIVE HALF WIDTH (FT): 18
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 60.73
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	75.5	159.0

MAR WEST AVE, NORTH OF TIBURON BLVD

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	76.14	12.58	9.46
M-TRUCKS	1.56	0.09	0.14
H-TRUCKS	0.01	0.01	0.01

ADT: 3400 SPEED: 25 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 54.46
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	51.6

SAN RAFAEL AVE, SOUTH OF TIBURON BLVD

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	76.14	12.58	9.46
M-TRUCKS	1.56	0.09	0.14
H-TRUCKS	0.01	0.01	0.01

ADT: 3860 SPEED: 25 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 55.01
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	56.1

BEACH ROAD, TIBURON BLVD TO MAIN STREET

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	76.14	12.58	9.46
M-TRUCKS	1.56	0.09	0.14
H-TRUCKS	0.01	0.01	0.01

ADT: 5180 SPEED: 25 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 56.29
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	68.1

BEACH ROAD, SOUTH OF MAIN STREET

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	76.14	12.58	9.46
M-TRUCKS	1.56	0.09	0.14
H-TRUCKS	0.01	0.01	0.01

ADT: 3830 SPEED: 25 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 54.98
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	55.8

LETTER OF TRANSMITTAL

April 13, 1984

To the Members of the City Councils of Sausalito, Mill Valley, Tiburon, and Belvedere; Members of the Marin County Board of Supervisors; and San Francisco Bay Conservation and Development Commission Commissioners:

As you know, Richardson Bay is a unique and irreplaceable resource to the people of southern Marin County and the entire Bay Area. However, Richardson Bay has experienced increasing problems over the past years. In order to identify these problems and to offer recommended solutions, this Special Area Plan was prepared.

The purpose of the Richardson Bay Special Area Plan is to provide uniform policies and standards to be used by Belvedere, Mill Valley, Sausalito, Tiburon, Marin County, and the San Francisco Bay Conservation and Development Commission, to manage the future use and protection of this valuable natural resource.

Since April, 1983, the Steering Committee -- Mill Valley Mayor Richard Spotswood; Sausalito Mayor Carol Singer Peltz; Tiburon Councilmember Valerie Bergmann, Belvedere Councilmember Erwin Farley; San Francisco Bay Conservation and Development Commission representatives Barbara Kondylis, Hans Schiller, and Barbara Eastman; and I -- have been meeting to complete our studies of Richardson Bay and our recommended plan. In our work, we have been assisted by a 50-person Advisory Committee representing local individuals and organizations, and government agencies concerned with the future of Richardson bay; specialists in such fields as tidal hydraulics, biology, and law; and staffs of each of the participating agencies.

The plan development process included 12 public hearings; nine hearings on the various elements of the Plan and three hearings on the draft Plan. Part of this process has been the accommodation of many concerns of both citizens and organizations, from wildlife conservation to boating interests. Although not every viewpoint was accepted, all were carefully considered and many are included in the Special Area Plan.

The Special Area Plan, because of its inter-jurisdictional process, is the right vehicle at the right time to join the five local governments and the Bay Commission in a management plan that will lead to betterment of Richardson Bay now and for future generations.

I strongly urge your support for this plan.

Respectfully

ALBERT ARAMBURU
Chair

Richardson Bay
SPECIAL AREA PLAN

Belvedere

Mill Valley

Sausalito

Tiburon

Marin County

San Francisco Bay Conservation and Development Commission

APRIL 1984

This publication was prepared with financial assistance from The San Francisco Foundation and the U.S. Office of Coastal Zone Management. National Oceanic and Atmospheric Administration, under the provisions of the federal Coastal Zone Management Act of 1972, as amended.

CONTENTS

FIGURES

Steering Committee

Albert Aramburu, Chair
Marin County Board of Supervisors

Hans Schiller, Vice-Chair
San Francisco Bay Conservation and Development Commission
(Alternate: Alice Graham)

Valerie Bergmann
Tiburon City Council
(Alternate: Dennis Rockey)

Barbara Eastman
San Francisco Bay Conservation and Development Commission

Erwin Farley
Belvedere City Council
(Alternate: Richard E. Boesel, Jr.)

Barbara Kondylis
San Francisco Bay Conservation and Development Commission

Carol Singer Peltz
Sausalito City Council
(Alternate: Alice Rogers)

Richard Spotswood
Mill Valley City Council
(Alternate: Flora Praszker)

INTRODUCTION

Richardson Bay, situated in southern Marin County, is a unique and valuable scenic and natural resource. The people of Marin County, the San Francisco Bay Area, and California have a substantial and continuing interest in its present and future use. Five local governments have jurisdiction over its waters and shoreline: Marin County and the cities of Sausalito, Mill Valley, Tiburon, and Belvedere, as does the state San Francisco Bay Conservation and Development Commission. Each of these agencies has similar goals for Richardson Bay: protection of its natural resources; use of the water for water-oriented purposes; restoration and enhancement of degraded tidal wetlands; and provision of public access to and along its shoreline.

In recent years, proposals for the expansion of existing recreational boat marinas and construction of new such marinas which would increase the amount of boat berths in Richardson Bay by 50 percent have been made as well as proposals to expand existing and develop new houseboat marinas. In addition, many vessels and floating structures used primarily as residences have anchored or moored offshore in Richardson Bay. On land, new developments have been proposed, each with shoreline public access opportunities.

Because Richardson Bay is a relatively small and enclosed body of water, activities that occur in one local jurisdiction have impact on the other four jurisdictions as well as the Bay Commission's jurisdiction. Recognizing this, the agencies determined there was need for a unified set of planning policies and regulatory controls that would be common to the local governments and the Bay Commission. Thus, the purpose of the Richardson Bay Special Area Plan is to recommend to each agency uniform policies and regulations for adoption as the agency's specific policy for Richardson Bay.

PLANNING PROCESS

The local governments and the Bay Commission appointed a Steering Committee composed of one member of the Marin County Board of Supervisors; one member each from the city councils of Sausalito, Mill Valley, Tiburon, and Belvedere; and three members of the San Francisco Bay Conservation and Development Commission, to guide preparation of the recommended plan. In addition, an Advisory Committee of over 50 individuals representing local residents, groups, organizations, and public agencies with an interest in the future of Richardson Bay was formed to provide information and guidance to the Steering Committee during preparation of the recommended plan.

Five planning background reports were prepared by agency staff and consultants for analysis and tentative adoption by the Steering Committee: (1) Status of Shoreline and Water Uses of Richardson Bay; (2) Water Quality Issues in Richardson Bay; (3) Sediment Hydraulics of Richardson Bay; (4) Aquatic and Wildlife Resources of Richardson Bay; and (5) Regulations

Report for Richardson Bay Special Area Plan. The reports were first reviewed by the Advisory Committee and were then transmitted to the Steering Committee with the Advisory Committee's comments and recommendations. These reports provided the information needed to prepare the findings and policies of the recommended Special Area Plan, as well as allow opportunity for public involvement in discussions of the Advisory Committee and hearings of the Steering Committee. The Advisory Committee held four meetings to discuss the background reports and the Steering Committee held nine hearings on the reports at six meetings, including two joint meetings within the Advisory Committee. In addition, three hearings of the Steering Committee were held to consider the draft Richardson Bay Special Area Plan before its adoption.

DEFINITIONS

Following are definitions of words and terms used in the Special Area Plan:

1. "Houseboat" means a structure in the water, floating or not floating, used for an extended period of time for private residential use and generally not used for recreational or active navigational use.

2. "Live-aboard" means a vessel having capability for active self-propelled navigation moored for an extended period of time and used continuously during that time for private residential use and used on some occasions for recreational or commercial purposes.

3. "Moored for an extended period of time" means, when not in conflict with local codes, located for 30 days or more in one place.

4. "Anchor-out" means a houseboat or live-aboard which is moored or anchored offshore and not at a marina or shoreside facility.

5. "Richardson Bay" means the water covered areas including all tide and submerged lands, tidal marshes, and diked wetlands as shown on the Richardson Bay Special Area Plan Maps.

6. "Local government" means Marin County and the cities of Sausalito, Mill Valley, Tiburon, and Belvedere.

7. "BCDC" or "Bay Commission" means the San Francisco Bay Conservation and Development Commission.

8. "MLLW" or "mean lower low water" means a tidal datum or level which is calculated by determining the mean of the height of the lower of the two daily low tides over a 19-year period."

9. "Water-oriented use" means water-related industries, ports, airports, wildlife refuges, water-oriented recreation and public assembly, and desalinization plants and power plants requiring large amounts of water for cooling purposes.

10. "Recreational boat" or "commercial boat" means any vessel capable of active self-propelled navigation and is used principally for recreation, fishing, or commercial uses. Such vessels may be used occasionally for residential purposes but they are not used for long-term residential purposes.

11. "Fill" or "Bay fill" means earth or any other substance or material, including pilings or structures placed on pilings, and structures floating at some or all times and moored for extended periods, such as houseboats and floating docks.

PLAN CONTENTS

The Special Area Plan consists of three parts. Part I contains the Plan findings and policies. Part II includes the Special Area Plan Maps, which graphically depict the Plan policies, and Part III describes the recommended program for carrying out the Plan.

Part I:
Findings and Policies

RICHARDSON BAY
SPECIAL AREA PLAN

AQUATIC AND WILDLIFE RESOURCES

Richardson Bay provides a wide range of aquatic and wildlife habitats for abundant and diverse populations of fish and wildlife. Because of its location sheltered from strong tides and winds and close proximity to the Pacific Ocean, Richardson Bay is an area of high value for fish that spend part of their life in the ocean and part in an estuary, and for sea birds and migratory waterfowl as a refuge during winter storms. It is estimated that over 350,000 birds seek refuge during the winter months in the Audubon Society's wildlife sanctuary alone. Because of the shallowness of the Bay's water, many acres of mudflats are exposed at low tide providing important feeding areas for shorebirds and habitat for algae and small crustaceans. Moreover, Richardson Bay is one of the few areas in the San Francisco Bay system in which harbor seals reside and haul out.

FINDINGS

1. Richardson Bay and its immediate surrounding upland area provide an environment for a wide range of aquatic and wildlife species because of the close proximity of many diverse habitats and the Bay's location sheltered from strong winds, waves, and tides. These habitats can be generally classified as: (a) marine, estuarine, and subtidal channel and basin water areas; (b) tidal and diked marshes; (c) rocky shore, sandy-pebble beach, mud flat, and artificial structure shorelines; and (d) upland areas.

2. The deep, saline, and cold marine water environment of Richardson Bay is an important segment in the migratory route of anadromous fish and habitat for other ocean living fishes.

3. The major open water area of Richardson Bay is estuarine. Estuaries provide a rich habitat for aquatic vegetation and wildlife. Eelgrass beds, rare in San Francisco Bay, flourish in Richardson Bay and provide a major source of detritus, a primary food source in the Bay ecological food chain. In addition, herring, an important commercial fish, attach their eggs to the eelgrass leaves during the spawning season.

4. Subtidal channels and basins form a network in the shallow mud flats and tidal marshes of upper Richardson Bay acting as conduits for tidal water to flow to the upper reaches of the shallow tidelands. At low tide, the channels and basins retain water where invertebrates tend to congregate, and the habitat becomes an important foraging area for shorebirds and ducks.

5. Rocky shorelines, which include riprap, provide habitat for a number of invertebrates that seek protection among the rocks or burrow in the fine material located behind riprap and in pockets of the natural rocky areas.

6. Sandy-pebble beach is a limited habitat area because the mixture of sand, shells, and small rocks mixed with Bay mud is constantly moving and shifting with the tide. Only invertebrates that can burrow into the deeper substrate live in this environment.

7. Tidal marshes are extraordinarily fertile and, along with eelgrass, are major sources of detritus. Tidal marshes also provide shelter for many invertebrates and shorebirds, produce oxygen, cleanse polluted Bay waters, and are used for foraging by shorebirds. Most marine and estuarine life in Richardson Bay depends directly on these marshes for sustenance or indirectly upon them by feeding on other aquatic life so nourished. Moreover, a few stands of salt marsh birds beak (Cordylanthus maritimus), a rare and endangered annual plant, are located in upper Richardson Bay tidal marshes in Mill Valley and near the Marin Heliport.

8. Upland habitat provides a buffer area for water and marsh area wildlife, particularly shorebirds and migratory waterfowl, insulating the water areas from upland urban activity. Further, upland areas provide shelter and a food foraging area for Bay-related wildlife, particularly shorebirds, during periods of very high tides. Moreover, uplands provide opportunities for public access to marsh and open water areas.

9. Approximately 55 fish species inhabit Richardson Bay all year or for part of their life cycle. Richardson Bay is particularly important for fish spawning and as a habitat for fish in their early lives. Pacific herring, a valuable commercial fish, spawn in the shallow waters and eelgrass beds of Richardson Bay from December through February. The herring and herring eggs are also very important sources of food for birds that inhabit the Bay during winter. Because of their abundance and importance as a food source, herring may be the most important fish in Richardson Bay.

   Anadromous fish, including salmon, steelhead trout, striped bass, sturgeon, and shad, migrate through the marine environment of Richardson Bay upstream through the Delta to fresh water to spawn. These fishes, particularly the young, also venture into the shallower waters of Richardson Bay to rest and feed. The primary migration period for these fishes is in the spring (generally April through June); however, salmon and steelhead also migrate in the fall (late August through November); and some salmon migrate in the winter (December and January).

   Pelagic bait and forage fishes in Richardson Bay, including the Pacific herring, northern anchovy, jacksmelt, and topsmelt, are important food sources for larger fishes and some mammals, such as the harbor seal, and birds such as gulls, terns, grebes, pelicans, cormorants, ducks, and kingfishers.

Marine fishes, which include flounder, sole, and perch, provide some sport fishing in Richardson Bay.

10. There are two shellfish beds in Richardson Bay that contain approximately 146,000 clams. However, shellfish are not presently authorized to be taken from these beds for human consumption because they contain pollutants. The Richardson Bay shellfish population can be expected to flourish and be safely taken for consumption by recreational clammers after water pollution has been significantly reduced.

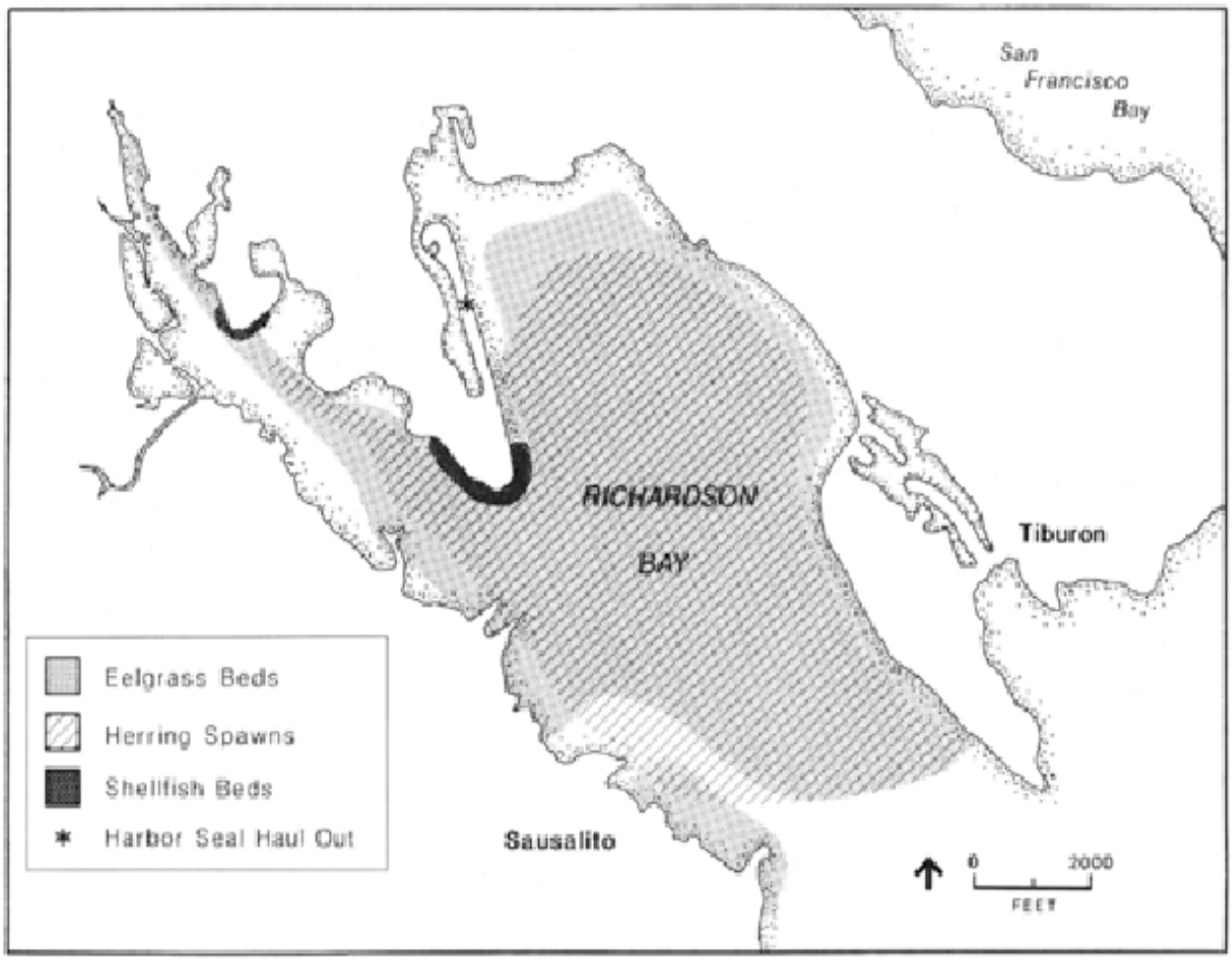


FIGURE 1

Select Resource Areas

SOURCE: Dept. Fish & Game MRA Report 82-6
Aug. 1982, S.F. Bay Shellfish , ABAG, 1977.

11. Richardson Bay provides an important environment for many species of birds. The sheltered open water areas are extensively used by migratory waterfowl particularly during the winter months. The mud flats and tidal marshes are heavily used by shorebirds. These birds feed in the Bay muds and subtidal channels and basins and seek shelter in the tidal marshes.

12. Harbor seals, found in only a few areas in San Francisco Bay, inhabit Richardson Bay and haul out on Strawberry Spit, mainly between November and April. In addition, some seals haul out on floating booms and jetties along the Sausalito waterfront.

13. The state Mount Tamalpais Game Refuge and the Audubon Society's Richardson Bay Wildlife Sanctuary help protect Richardson Bay wildlife. No boating is allowed within the 900 acre Audubon Society Sanctuary during the winter months when the Sanctuary is heavily used by migratory waterfowl as a resting and feeding area. (See Figure 2)

POLICIES

1. The open water, marshes, and mud flats of Richardson Bay are particularly valuable wildlife habitat and should be afforded maximum protection. Eelgrass beds, important to herring spawning and for production of detritus, should also receive maximum protection.

2. Future shoreline developments adjacent to mud flats or tidal or diked marshes should provide a natural landscaped buffer area between the development and the shoreline. The buffer area should be a minimum of 20 to 40 feet wide, depending on the sensitivity of the wildlife and the density and intensity of development, and should be planted with native shrubs and trees such as coyote brush, toyon, and coast live oak.

3. The harbor seal haul-out area on Strawberry Spit should be further protected by buoys placed offshore of the haul-out site during the haul-out season (November to April).

4. Open areas of Richardson Bay used as resting and feeding areas by migratory waterfowl during the winter should be protected from speeding boats through continued patrolling of the Audubon Society Sanctuary and by posting of notice of boat speed restrictions in upper Richardson Bay.

5. Any development within Richardson Bay should avoid destruction of marshes, mud flats, shellfish beds, and eelgrass beds. If such losses are unavoidable, the project should be authorized only if the minimum amount of habitat disturbance necessary to accomplish the purpose of the project occurs and the habitat loss is mitigated to the fullest extent. Mitigation should be within Richardson Bay, preferably at the development site, or if that is not feasible, at a site identified in the Tidal Restoration and Marsh Enhancement section of the Special Area Plan.

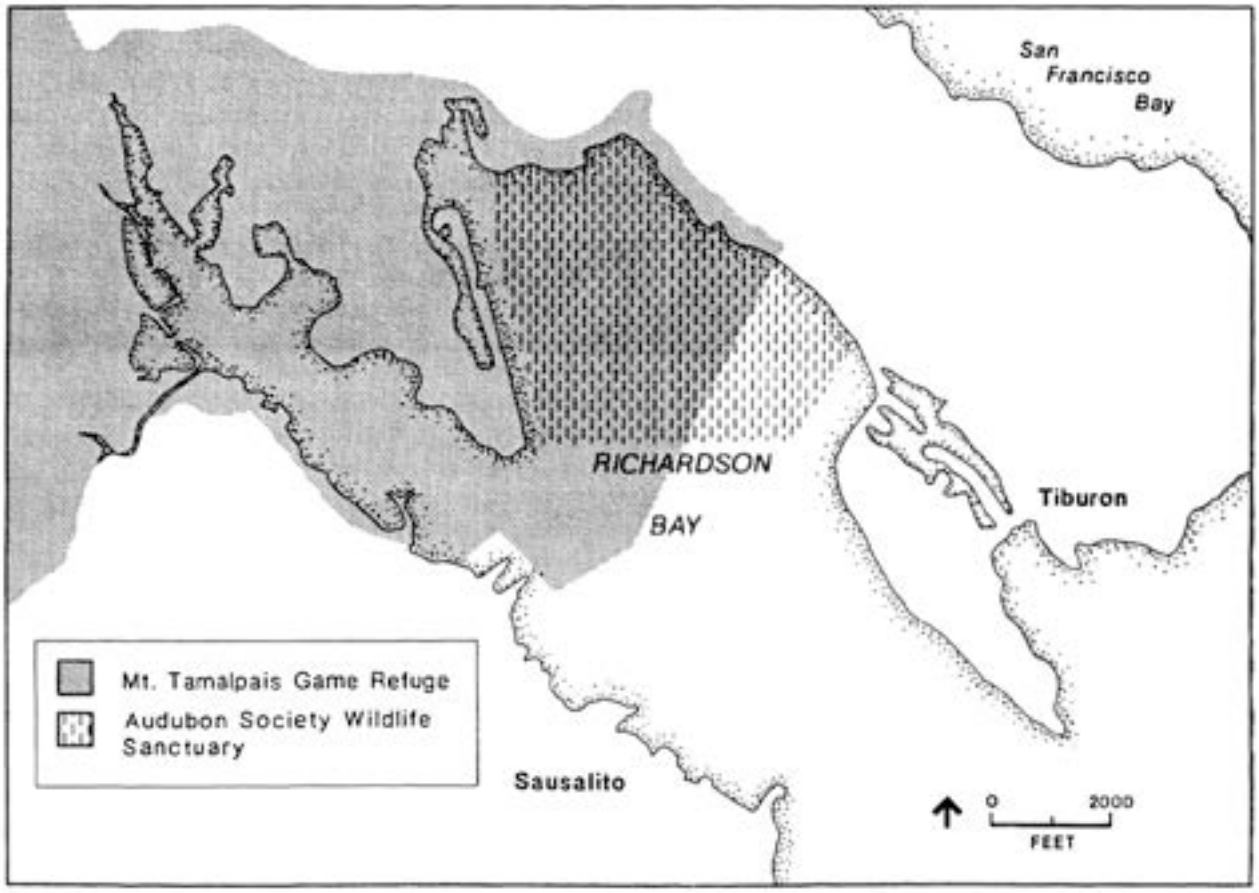


FIGURE 2
Wildlife Refuge and Sanctuary
SOURCE: Fish & Game Code and Audubon Society

WATER OUALITY

Clean marine and estuarine water provides opportunities for recreational activities such as swimming, wading, wind surfing, fishing, and shellfish harvesting. In addition, shoreline recreation activities such as hiking, bicycling, and picnicking are far more enjoyable when the water is not impaired with visible signs of water pollution. Clean marine and estuarine water also provides a healthy habitat for aquatic life, such as resident and migratory fish, for shellfish, and for wildlife including many species of shorebirds, waterfowl, and even mammals such as harbor seals.

Marine and estuarine water, particularly in urban areas, can become polluted and the values and uses of the water severely impaired. Improperly treated sewage discharged into the waters can carry coliform bacteria and biological oxygen demanding substances. Coliform bacteria can cause diseases in humans that ingest the water or can contaminate shellfish that, when eaten, can cause human illness. Further, coliform bacteria provide an index of the presence of more virulent pathogens, the presence of which is less easily assayed. Biological oxygen demanding substances deplete oxygen necessary for aquatic life. Heavy metals washed into the waters from streets and parking lots, particularly during the rainy season, can contaminate many forms of aquatic life, particularly resident fish and shellfish. Sediments carried into the water from upland soil erosion can smother fish spawning grounds, increase water turbidity, and contribute to shoreline accretion in areas of minimal tidal circulation.

Richardson Bay has suffered from water pollution for many years. Because of its enclosed shape, shallowness, and minimal tidal flushing action, pollutants are slow to disperse and to assimilate into the water thereby making Richardson Bay particularly susceptible to pollutant concentration.

The major pollution sources in Richardson Bay have been: (1) treated municipal wastewater; (2) wet weather overflows from municipal treatment plants; (3) untreated wastewater from unsewered houseboats and live-aboards; (4) urban water runoff; (5) sedimentation and erosion; and (6) dredging and dredged material disposal.

As a result of a number of federal, state, and local water pollution abatement programs, the waters of the San Francisco Bay system and Richardson Bay are becoming significantly cleaner. However, pollution problems still exist in Richardson Bay and additional steps should be taken to improve the quality of Richardson Bay waters.

FINDINGS

1. There are 11 categories of beneficial uses of Richardson Bay water established by the State Water Resources Control Board and the San Francisco Bay Regional Water Quality Control Board. Three of these uses – human water contact recreation, non-contact water recreation,

and shellfishing harvesting – have been identified by the Boards as "key beneficial uses" to be protected in Richardson Bay.

2. Water quality in Richardson Bay is influenced by a number of human related processes. The most important factors include: (a) release of untreated and treated wastewater; (b) urban storm water runoff; (c) erosion and sedimentation; and (d) dredging and dredged material disposal.

3. The water quality of Richardson Bay affects its attractiveness and recreational value. Two critical pollutant measures of whether or not the water is safe for human recreation are the coliform bacteria standards for human water contact recreation and for shellfish harvesting. The levels of coliform bacteria represent mainly the release of untreated sewage and graywater. Bacterial testing of Richardson Bay by the Regional Water Quality Control Board in 1973 and 1981 indicated areas of degraded water quality, particularly areas around certain recreational boating and houseboat marinas that lacked sanitary sewer service to houseboats and residential vessels and had minimal tidal flushing.

4. Discharge of treated municipal wastewater into Richardson Bay constituted a major source of water pollution in the form of coliform bacteria, biochemical oxygen demanding substances, and biostimulatory substances. Because of the shallowness of Richardson Bay, poor tidal circulation, and limited capability for pollutant and water mixing, the Regional Water Quality Control Board has banned treated municipal wastewater discharges into Richardson Bay. The Sewerage Agency of Southern Marin and the Sausalito-Marin City Sanitary District are currently carrying out extensive municipal wastewater treatment plans and programs which will: (a) improve treatment at all southern Marin treatment plants – Sausalito-Marin City, Mill Valley, and Sanitary District No. 5 - to secondary treatment level and (b) discharge the treated effluent outside Richardson Bay into the deep water of Raccoon Strait and off the Marin Headlands to assure proper mixing of treated wastewater and Bay water. The Raccoon Strait outfall pipe was completed in September, 1983 and the upgraded Mill Valley and Sanitary District No. 5 treatment plants should be operational in March, 1984. Work on the Sausalito-Marin City treatment plant expansion is scheduled to begin in July, 1984, and should be completed within one and a half to two years.

5. Wet weather overflow discharge into Richardson Bay is a serious source of water pollution. Wet weather discharges occur during and after rainstorms when storm water infiltrates sanitary sewers and overloads sewer and treatment plant capacity. The upgraded treatment plants at Mill Valley, Sanitary District No. 5, and Sausalito-Marin City are designed to accommodate and treat wet weather sewage overflow to the level required by the Regional Water Quality Control Board's Basin Plan.

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6. Urban storm water runoff can carry a variety of pollutants into Richardson Bay. For example, runoff from bayside parking lots can be a source of oil, gasoline, and other pollutants. Because most of this runoff cannot be treated before it enters the Bay, it is necessary to remove the pollutants from land areas before they come into contact with storm water runoff. Marin County and the cities of Sausalito, Mill Valley, Tiburon, and Belvedere are carrying out the urban runoff control measures recommended in the Marin County Surface Runoff Management Plan prepared by the County and the cities to improve the quality of surface runoff into Marin County waters.

7. Although dredge spoils cannot be deposited in Richardson Bay, dredging is commonplace and necessary to maintain existing navigational channels and marina basins in the shallow Bay. Dredging often has short-term, localized adverse impacts on the environment. In some locations, Bay mud may contain pollutants and toxic materials that could be released into the water during the dredging process. If dangerous pollutants are present, they will affect whether dredging should be permitted and, if so, where the dredged material should be disposed.

8. Although suspended sediment concentrations in San Francisco Bay are projected to decrease over the next 50 years, increased sediment loads are entering Richardson Bay from its surrounding watershed.

9. Sedimentation, a product of soil erosion, can have an adverse impact on estuarine water bodies, including Richardson Bay, by covering and eliminating aquatic habitat such as shellfish beds and fish spawning grounds, by increasing conversion of marshes to upland when sediment becomes trapped and builds up in stands of marsh plants, and by filling in natural and dredged navigational channels and marina and boat basins.

10. The natural soil erosion process is accelerated when the soil surface is disturbed, particularly during construction, and when the protective vegetative cover is removed. The disturbed soil mantle is exposed to falling rain and sheet flows of water, which results in the increased movement and loss of soil particles to stream channels and other storm water drainage systems and ultimate deposition in the Bay as sediment.

11. In most cases, the impact of human activity on the land which results in erosion and sedimentation can be substantially reduced and often eliminated by employing proper erosion and sediment control practices. The Association of Bay Area Governments has prepared and adopted a Manual of Standards for Surface Runoff Control Measures which

Includes model erosion and sediment control ordinances and standards. The Regional Water Quality Control Board has directed Richardson Bay local governments to develop erosion and sediment control regulatory programs which are consistent with the Manual and to provide for the installation of approved erosion control measures prior to the start of the annual rainy season (October 15 - April 15). Local governments are currently preparing these programs.

12. The most effective method of controlling erosion on disturbed land is to install erosion control measures, particularly revegetation of the disturbed land, in advance of the rainy season and to prohibit land disturbance, particularly on hillsides, during the rainy season.

13. The U. S. Coast Guard, pursuant to the federal Clean Water Act, has established standards for the design and use of marine sanitation devices (MSDs) which are designed to prevent discharge of untreated or inadequately treated sewage from new vessels and existing vessels, except vessels not equipped with installed toilet facilities. Toilet facilities installed on vessels must be Coast Guard approved MSDs. State and local governments are preempted from adopting or enforcing regulations with respect to the design, manufacture, installation, or use of any MSD.

14. Pursuant to the federal Clean Water Act, the Regional Water Quality Control Board may prepare a petition to be approved and transmitted from the State Water Resources Control Board to the federal Environmental Protection Agency (EPA) requesting the EPA to designate Richardson Bay as a vessel sewage no discharge area. If Richardson Bay is established as a no discharge area, sewage and graywater discharge may be regulated by the state, and enforced at the local level. However, it is not clear whether such prohibition could legally include a requirement of houseboat and live-aboard sewer hookups. Absent establishment of a no discharge area, it appears that the enforcement of sewage discharge from vessels is the responsibility of the Coast Guard.

15. Both sewage (human body wastes) and graywater (galley, bath, and shower water) discharged from vessels or floating structures in Richardson Bay pollute its waters. Some authorized houseboats and live-aboards as well as most, if not all, unauthorized houseboats and live-aboards, do not have U. S. Coast Guard (MSDs) and are not connected to a Regional Water Quality Control Board or Marin County Department of Environmental Health approved sewage and graywater treatment system; they might discharge untreated sewage and/or graywater directly into Richardson Bay.

16. The number of unauthorized houseboats and live-aboards in Richardson Bay has increased in the last ten years, although numbers fluctuate. The Regional Water

Quality Control Board staff estimates that between ten and 20 percent of Richardson Bay recreational berths are used for live-aboard boats. Other local surveys estimate that approximately ten percent of the boats may be live-aboards. Although many of the live-aboards have marine heads (toilets) and other facilities such as galleys, none are hooked up to shoreline sewage systems. Some may be equipped with sewage holding tanks (Type III MSD) but few, if any, use the two existing shoreline pumpout facilities. While some houseboats and live-aboards may have U. S. Coast Guard approved MSDs, others do not. Some have installed alternative sewage disposal systems that presently would be unacceptable to the Regional Water Quality Control Board or the Marin County Department of Environmental Health.

17. The most effective and reliable method of treating sewage and graywater and assuring that the wastes are not discharged into Richardson Bay is the installation of a direct continuous pumpout connection from the live-aboard vessel or houseboat sewage and graywater source facilities to a shoreside sewage treatment facility. Another effective method of treatment is the containment of sewage and graywater within separate live-aboard or houseboat holding tanks which are pumped out at a sewage pumpout station which is directly connected to a shoreside sewage treatment facility.

18. An alternate system of gathering sewage and graywater from houseboats and live-aboards may also be feasible: floating a large holding tank with pumpout mechanism (commonly called a honey barge) around to vessels used as residences. Under this system, sewage and graywater are pumped from the separate holding tanks into the larger barge holding tank for transport to a shoreside pumpout facility and sewage treatment system. Although there is little experience with such a system, the system is theoretically workable. It would involve costs of constructing a holding tank barge system and operating and administering the system. Any such system must be licensed by the Marin County Department of Environmental Health. The staffs of the Regional Water Quality Control Board and Marin County Department of Environmental Health have both expressed skepticism about the economic feasibility and reliability of such a system.

POLICIES

1. The funding and construction of approved sewage treatment facilities to end treated municipal wastewater discharges into Richardson Bay should be expedited as much as possible by local, regional, state, and federal agencies.

2. Existing sewage collection systems should be upgraded and new treatment plants should be designed to accommodate wet weather flows to prevent the discharge of untreated sewage on land or into Richardson Bay.

3. Local governments should continue to carry out the urban runoff control measures recommended in the Marin County Surface Runoff Management Plan to the maximum extent feasible. Bayside parking areas should be designed and constructed so that pollutants are retained on land and not washed into Bay waters.

4. Proposed projects which include new dredging should include testing Bay muds for possible pollutants and contaminants early in the project planning process.

5. The local governments should adopt erosion and sediment control ordinances and regulatory programs that are consistent with applicable provisions of the Association of Bay Area Governments' Manual of Standards for Erosion and Sediment Control Measures as required by the Regional Water Quality Control Board. The ordinances should: (a) either prohibit grading during the rainy season (October 15 - April 15) or provide that grading during the rainy season be authorized only when the local government determines that at no stage of the work will there be any substantial risk of increased sediment discharge from the site; (b) require that all erosion and sediment control measures be installed and operable by the first of October; and (c) provide an exception to (a) and (b) above in emergency situations.

6. The San Francisco Bay Conservation and Development Commission should include erosion and sediment control conditions in its Richardson Bay permits involving shoreline work consistent with applicable provisions of the Association of Bay Area Governments' Manual of Standards of Erosion and Sediment Control Measures and: (a) prohibit grading in the Richardson Bay shoreline band during the rainy season (October 15 - April 15) except when the Commission determines that at no stage of the work will there be any substantial risk of increased sediment discharge from the site; and (b) require installation of all erosion and sediment control measures by the first of October. The Commission should make an exception to the requirements of (a) and (b) above when grading is required in emergency situations.

7. Marinas and yacht harbors should install sewage and graywater pumpout facilities available for public use in easily accessible locations and provide the service free of charge or at a reasonable fee to offset maintenance costs. Marinas should provide on land conveniently located public restrooms. In addition marinas and yacht harbors with vessels used as residences should provide on land conveniently located restrooms, showers, parking and

garbage disposal facilities adequate to serve authorized resident live-aboard occupants, and, wherever possible, transient recreational boaters."

8. There should be no discharge of sewage into Richardson Bay and existing discharges should be eliminated. The local governments and the Bay Commission should request the Regional Water Quality Control Board to petition the federal Environmental Protection Agency (EPA) to designate Richardson Bay as a vessel sewage no discharge area.

9. All houseboat marinas which have houseboats which have sewage or graywater producing facilities onboard should install and maintain sewage and graywater facilities that will directly connect a houseboat to a shoreside sewage treatment system. Houseboats which have sewage and graywater producing facilities onboard should be equipped with and use a system that connects the facilities to a shoreside sewage treatment facility.

10. Subsequent to Richardson Bay being declared a no discharge area by the EPA:

    a. All recreational boat marinas and yacht harbors which have live-aboards which have sewage or graywater producing facilities onboard should either provide and maintain sewage and graywater facilities that will directly connect live-aboard vessels to a shoreside sewage treatment facility or provide conveniently located sewage pumpout facilities and provide the pumpout service free or at reasonable fee to offset maintenance costs;

    b. Live-aboards which have sewage producing facilities onboard should be equipped with and use a system consistent with U. S. Coast Guard regulations that connects the facility to a holding tank which can either be directly connected to a shoreside sewage treatment facility or be emptied at a sewage pumpout station; and

    c. Transient vessels should comply with the sewage no discharge requirements.

11. Subsequent to Richardson Bay being declared a no discharge area by EPA, the Marin County Department of Environmental Health and the Regional Water Quality Control Board should continually monitor the water quality in marinas in which live-aboards discharge graywater and at least every two years report whether the graywater is polluting the marina. If it is determined that the discharged graywater is polluting the water, the live-aboard graywater producing facilities should either be directly connected to a shoreside sewage treatment system or to a holding tank that can be emptied out at a pumpout station.

12. Commercial fishing boat dock facilities should provide onshore restrooms and shower facilities for resident fleet and transient fishing vessel crew use. If live-aboards are authorized at the facility, and subsequent to Richardson Bay being declared a no discharge area by the EPA, the dock owner should either provide and maintain sewage and graywater facilities that will directly connect live-aboard vessels to a shoreside sewage treatment facility or provide a conveniently located sewage pumpout facility and provide the service free or at a reasonable fee to offset maintenance costs. The live-aboard vessels with sewage producing facilities onboard should be equipped with and use a system consistent with U. S. Coast Guard regulations that connects the facility to a holding tank which can either be directly connected to a shoreside sewage treatment facility or be emptied at a sewage pumpout station.

13. Funding should be sought for new studies by the Regional Water Quality Control Board of the water quality of Richardson Bay to evaluate the effect of Richardson Bay water pollution control programs.

NAVIGATION CHANNELS, MARINAS, ANCHORAGES, AND MOORAGES

Because of its sheltered location, size, and proximity to Sausalito and San Francisco, Richardson Bay is especially suitable as an anchorage and harbor for recreational and small commercial vessels. It has a long history of maritime use as a watering station and harbor for careening, whaling, fishing, and shipbuilding since the first settlement of the Bay Area. Since the Second World War, however, recreational boating has grown to become the major maritime use of the Bay. There are now approximately 2,000 recreational marina berths, primarily located in five marinas that have been constructed by dredging the shallows along the Sausalito waterfront. In addition, there are approximately 550 houseboats, mainly located in four houseboat marinas located along the western waterfront of the Bay. Some private small boat docks have been built next to homes in the Strawberry area, in Belvedere, and in Shelter Bay.

At present there are proposals to add approximately 1,000 additional recreational marina berths, of which 260 already have construction approval.

Navigation problems are occurring in Richardson Bay largely due to the high concentration of boating activity and marinas along the Sausalito waterfront and unregulated anchoring in the navigation lanes.

FINDINGS

1. The western shore of Richardson Bay, all of Belvedere Cove, and the eastern shore of Corinthian Island are very suitable locations for small boat harbors because of their sheltered positions and proximity to deep navigable water and the Golden Gate.

2. The typical sail-powered pleasure cruising vessel using Richardson Bay has a draft to the bottom of the keel of about five feet. Motor cabin cruisers typically draw two to three feet and commercial fishing vessels have drafts to ten feet.

3. A vessel with a draft of five feet requires a depth of minus seven feet mean lower low water (-7 feet MMLW) for flotation 100 percent of the time. To allow for inaccuracies in dredging, navigation channels and berthing basins would need to be maintained at -8 feet MLLW for 100 percent flotation.

4. The channel to the U. S. Army Corps of Engineers' Operations Base and turning basin is dredged to between -27 and -30 feet MLLW and is the only actively maintained navigation channel in Richardson Bay. The channel is not a congressionally authorized project but is considered part of the maintenance expense of the Corp's Operations Base.

5. In 1970, Congress authorized the extension of the Corps of Engineers channel to the then proposed Mill Valley small boat harbor. The extended channel was referred to as the Saucelito Canal, but was never dredged because of high cost and is now considered an "inactive" Corps of Engineers project. The City of Mill Valley does not now propose development of a small boat harbor.

6. The Salt Works Canal, which would extend the Corps of Engineers channel to Greenwood Cove, has neither been authorized by Congress or maintained, however, channel markers have been placed along the natural channel to assist in navigation.

7. Unregulated vessels and floating structures anchored or moored in the Marinship Launching Basin area and in the channel leading from Strawberry Spit and the upper part of Richardson Bay to the Corps of Engineers channel are an impediment to navigation.

8. Encroachment of boat docks on natural deep water channels and on designated navigation channels is an impediment to navigation.

9. The U. S. Coast Guard establishes anchorages where vessels may be safely moored without interfering with or presenting a safety hazard to navigation. Except for fairways and navigational channels, vessels may anchor or moor in designated general or special anchorages or other undesignated areas without limitation on specific location or length of stay unless otherwise prohibited by the U. S. Coast Guard. (See Figure 3)

10. Under the federal River and Harbors Act, the Secretary of Transportation is the sole authority which may define and establish anchorage grounds in all navigable waters of the United States. However, provisions are made for local governments to petition the U. S. Coast Guard when they propose new or changed anchorage regulations. To accomplish this, the local District Commander has been given authority to recommend changes in federal anchorage regulations whenever the maritime or commercial interests of the United States require such anchorage grounds for safe navigation. When deemed appropriate, local ordinances can be included as notes to the federal anchorage regulation.

POLICIES

1. The Corps of Engineers' channel and turning basin, vitally important for the maritime future of Richardson Bay, should continue to be marked and maintained.

2. The Marinship Launching Basin should be locally designated and marked as an area of navigation.

3. The Saucelito Canal should be locally designated and marked as a 100-foot wide navigation channel from the Marinship Launching Basin along the natural deep water channel on the northern side of upper Richardson Bay past Strawberry Point to the Shelter Bay harbor.

4. An 100-foot wide navigation channel should be designated and marked from the Saucelito Canal to the Kappas Yacht Harbor.

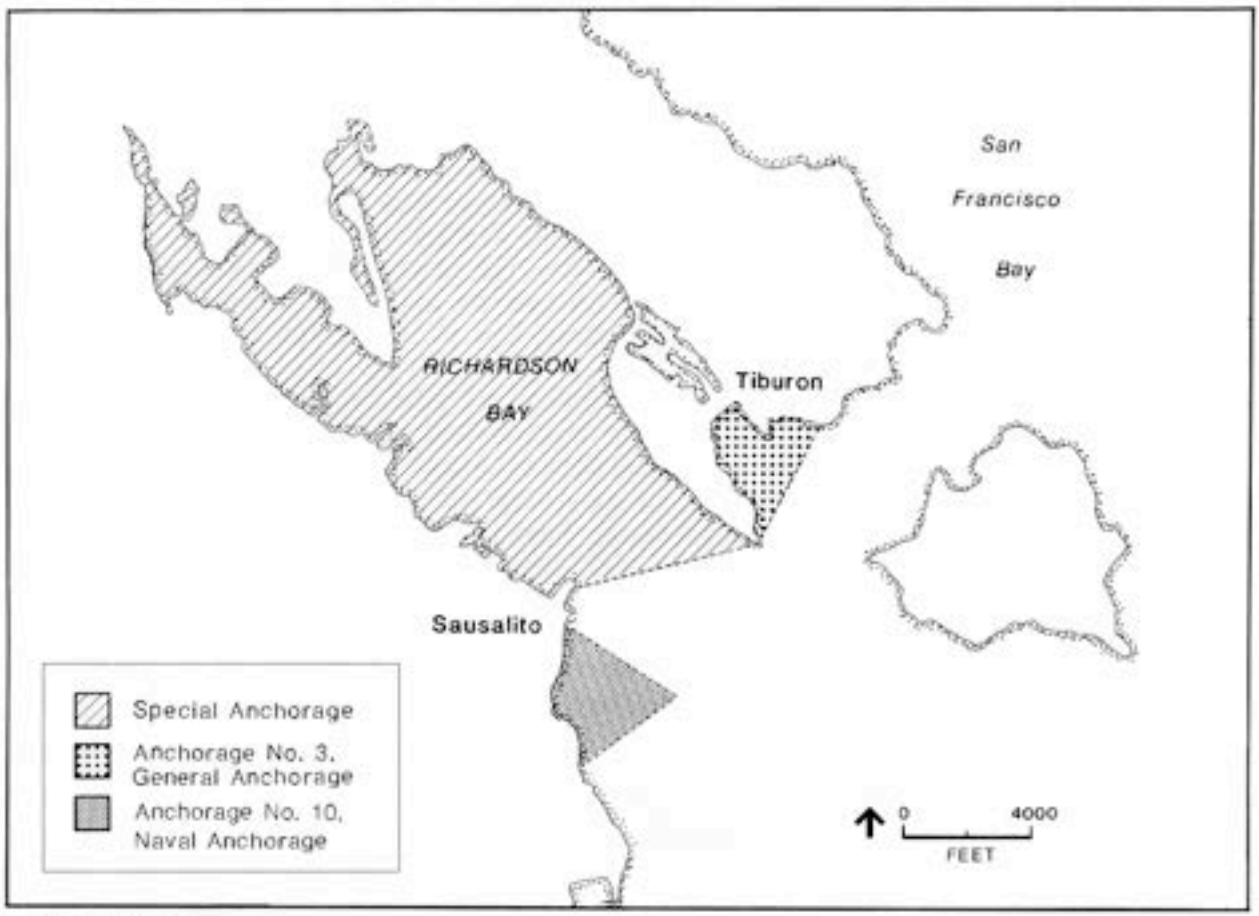

FIGURE 3

Federal Anchorages

SOURCE: Code of Federal Regulations, 33CFR 110.126(a): 33 CFR 110.224(a) (1) and (8)

5. An 100-foot wide navigation channel from the Saucelito Canal to Greenwood Cove through Strawberry Lagoon should be locally designated and marked. The new navigation channel would become operable at the time the channel is cut through Strawberry Spit. At that time, the Salt Works Canal navigation aide markings should be removed.

6. New marinas should be located only in deeper tidal water areas sheltered from strong winds, waves, and storms and adjacent to waters of sufficient depth for navigation or adjacent to maintained navigation channels.

7. The local governments should jointly petition the U. S. Coast Guard to amend the federal Richardson Bay anchorage regulations to include the authority of local anchorage and moorage ordinances as notes to the federal anchorage regulations.

8. Boat docks and floats and other structures or objects should not encroach on the Richardson Bay navigation channels and areas designated on Plan Map 6, Navigation Plan.

DREDGING AND SPOILS DISPOSAL

Until the last few years, the long term maintenance dredging requirements for Richardson Bay marinas and navigation channels have not been a major consideration for regulatory authorities. This is partly because most marinas have been constructed in the last 30 years, and only now is the need for long-term maintenance dredging becoming apparent. However, with the dramatic increase in the last decade in dredging costs and the increasing concern over the adverse environmental effects and costs of dredge spoil disposal, agencies and marina developers and operators are interested in evaluating the overall maintenance dredging requirements for existing and future marina development in Richardson Bay, with the purpose of minimizing dredging costs and adverse environmental impacts.

FINDINGS

1. Water depths in most of Richardson Bay appear to be stable and in equilibrium with natural sedimentation and erosive forces. In fact, the natural shallows and mud flats of Richardson Bay appear to be experiencing a small net rate of erosion over the last 30 years, probably because the effects of the historic Sierra hydraulic mining on suspended sediment concentrations in San Francisco Bay have now dissipated.

2. Sedimentation rates in Richardson Bay marinas amount to about 0.2 foot per year and are markedly lower than elsewhere in San Francisco Bay because of the partial isolation of Richardson Bay from the main San Francisco Bay tidal system. Typical average sedimentation rates in artificial dredged channels in Richardson Bay amount to about 0.5 foot per year.

3. The optimal maintenance dredging depth for marinas and navigation channels, including the Marinship Launching Basin, appears to be about a minimum depth of -8 feet MLLW. By dredging to that depth and allowing siltation to -4 feet MLLW, the dredging pattern followed by some Richardson Bay marinas, maintenance dredging would be required about every 20 years for marina basins and every eight years for navigation channels.

4. With the existing marinas, pattern of boat use, and current dredging practices, long-term maintenance dredging requirements for Richardson Bay will be approximately 60,000 cubic yards per year, of which approximately 25,000 cubic yards per year are attributed to maintaining the Corps of Engineers' channel.

5. If a channel is dredged from the Corps of Engineers' turning basin to the Kappas Yacht Harbor, natural scouring of the channel would be improved if the Clipper Yacht Harbor

Basin #4 is enclosed with a bulkhead. In addition, this would probably reduce sedimentation within the Clipper Yacht Harbor Basin #4.

6. Depths in both the existing Salt Works Canal and in the natural channel to the upper end of Richardson Bay (Saucelito Canal) appear to be in equilibrium with the tidal currents so that additional shoaling is not anticipated and thus dredging would not be necessary.

7. The Corps of Engineers has permitted, on an experimental basis, the disposal of a limited amount of dredged material in Raccoon Strait, which is just outside Richardson Bay.

POLICIES

1. The Corps of Engineers navigation channel and turning basin, currently dredged to -28 feet MLLW, should be maintained at that depth and at current widths. If in the future the channel depth is not necessary to maintain access to the Corps' Operations Base, the channel should be maintained no shallower than -10 feet MLLW to allow navigation by fishing vessels.

2. Marina basins, navigational fairways, the Marinship Launching Basin, and navigational channels designated on Plan Map 6, Navigation Plan, to be dredged should be dredged to a minimum depth of -8 feet MLLW.

3. The Saucelito Canal should be dredged from the Corps of Engineer's turning basin to the Kappas Yacht Harbor area to a minimum depth of -8 feet MLLW.

4. The locally designated navigation channel from the Kappas Yacht Harbor to the Saucelito Canal should be dredged to a minimum depth of -8 feet MLLW.

5. The Salt Works Canal in front of the Strawberry Spit wildlife preserve area should not be dredged.

6. Dredge spoils should be disposed of either: (a) on dry land at an approved fill site; (b) in a Corps of Engineers approved spoiling site in San Francisco Bay outside Richardson Bay; or (c) at sea beyond the 100 fathom line if the dredged materials are contaminated in excess of federal Environmental Protection Agency standards.

7. The Corps of Engineers should continue to evaluate on a case-by-case basis proposals for the disposal of small amounts of dredged materials in Raccoon Strait, which is outside Richardson Bay. If dredge spoils are authorized to be discharged into Raccoon Strait, disposal should not take place during fish migration periods and spoiling should take place on the ebb tide.

RESIDENTIAL VESSELS AND FLOATING STRUCTURES

Within San Francisco Bay, Richardson Bay is home to the largest number of recreational boat marinas, houseboat marinas, and vessels and floating structures used for long-term residential purposes. Richardson Bay, especially the northwest Sausalito shoreline and adjacent area of Marin County jurisdiction, has accommodated residential vessels since the early 1900's. The extensive use of the water area for residential use commenced after World War II when salvaged barges and other floating structures left over from the wartime ship building activity in the Marin shipyards were converted to houseboats. In recent years the Sausalito/Marin County waterfront has witnessed an increase in the numbers, sizes, designs, and shapes of houseboats and live-aboard vessels locating in the area. Many of the vessels and floating structures are unauthorized and have anchored offshore. The number of these anchor-outs has increased in the past few years.

FINDINGS

1. A houseboat is a structure in the water used for an extended period of time for private residential use and generally not used for recreational or active navigation use. A live-aboard is a vessel capable of active self-propelled navigation moored for an extended period of time and used continuously during that period for private residential use and used on some occasions for recreational or commercial purposes. An anchor-out is either a houseboat or live-aboard which is moored or anchored offshore rather than at a marina or shoreside facility.

2. Houseboats, live-aboards, and anchor-outs are located in Richardson Bay primarily along the northwest Sausalito shoreline and adjacent area of Marin County. Sausalito and Marin County have designated in their policy plans and zoning regulations specific marinas where houseboats are allowed. In other water areas, outside of these designated floating home marinas, long-term mooring of houseboats, live-aboards, and anchor-outs is not currently permitted except in some cases an a very limited basis.

3. All lands in Richardson Bay subject to tidal action are subject to the public trust, regardless of ownership. Some tide and submerged lands have been granted in trust by the Legislature to Marin County, Sausalito, and Mill Valley. Other tide and submerged lands have been sold to private parties and are privately patented tidelands.

4. Private residential uses are not public trust uses and are impermissible on grant lands held in trust unless such use is necessarily incidental to the accomplishment of an authorized public trust use, serves a statewide public benefit, and is consistent with the legislative

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grant. The legislative grants to Marin County, Sausalito, and Mill Valley do not authorize residential use.

5. Privately patented tide and submerged lands may be used for any use as long as the use is consistent with local government and Bay Commission policies and regulations and is not inconsistent with public trust needs.

6. In regard to the public trust, the Office of the Attorney General has advised that:

    a. A relatively small number of boats used for residential purposes might be justified in a marina located on lands legislatively granted to a local government consistent with the doctrine of the public trust if the boats were necessarily incidental to the marina use and would provide a degree of security to other boats.

    b. On privately-patented tidelands, houseboats and live-aboards used for long-term residential purposes could be permitted, consistent with public trust principles, only if the use would not be inconsistent with public trust needs. In assessing whether houseboat or live-aboard use would be inconsistent with trust needs in a given instance, the following issues should be considered: (1) whether the use will interfere with existing public trust uses, such as public access to the Bay, navigation, commerce, fishing, scenic view corridors and wildlife habitat; (2) whether the lands are currently needed for public trust uses; (3) whether the use will interfere with future public trust uses in the area; (4) whether the subject area is relatively small in relation to the lands available for trust needs in the vicinity; (5) the period of time for which the lands will be devoted to non-trust uses; and (6) whether, by their cost and permanence, the improvements associated with the houseboats and live-aboards are such as to render difficult or impossible future devotion of the lands to trust purposes, as a practical matter.

POLICIES

1. Vessels and floating structures used for residential purposes (i.e. houseboats and live-aboards) should be allowed only in recreational or houseboat marina berths when consistent with and in compliance with local codes, Bay Commission policies, and public trust needs. All anchor-outs should be removed from Richardson Bay.

2. Within the existing houseboat marinas, limited numbers[1] of new berths should be authorized to accommodate some of the anchor-out houseboats which existed in Richardson Bay on or prior to September 30, 1983, provided the anchor-out houseboat is in compliance with the applicable local government codes, including parking requirements; Bay Commission policies; and policies of the Special Area Plan. No new houseboat marinas should be authorized.[2]

3. To accommodate anchor-outs, a limited number[1] of live-aboards and houseboats should be permitted in the existing and new recreational boat marinas provided: (a) they are necessarily incidental to the recreational boating use; and (b) they are in compliance with the applicable local government codes, including parking requirements; Bay Commission policies; and policies of the Special Area Plan.

4. Any vessel or floating structure used primarily for a nonwater-oriented use such as an office, commercial, or industrial use should not be permitted in Richardson Bay.

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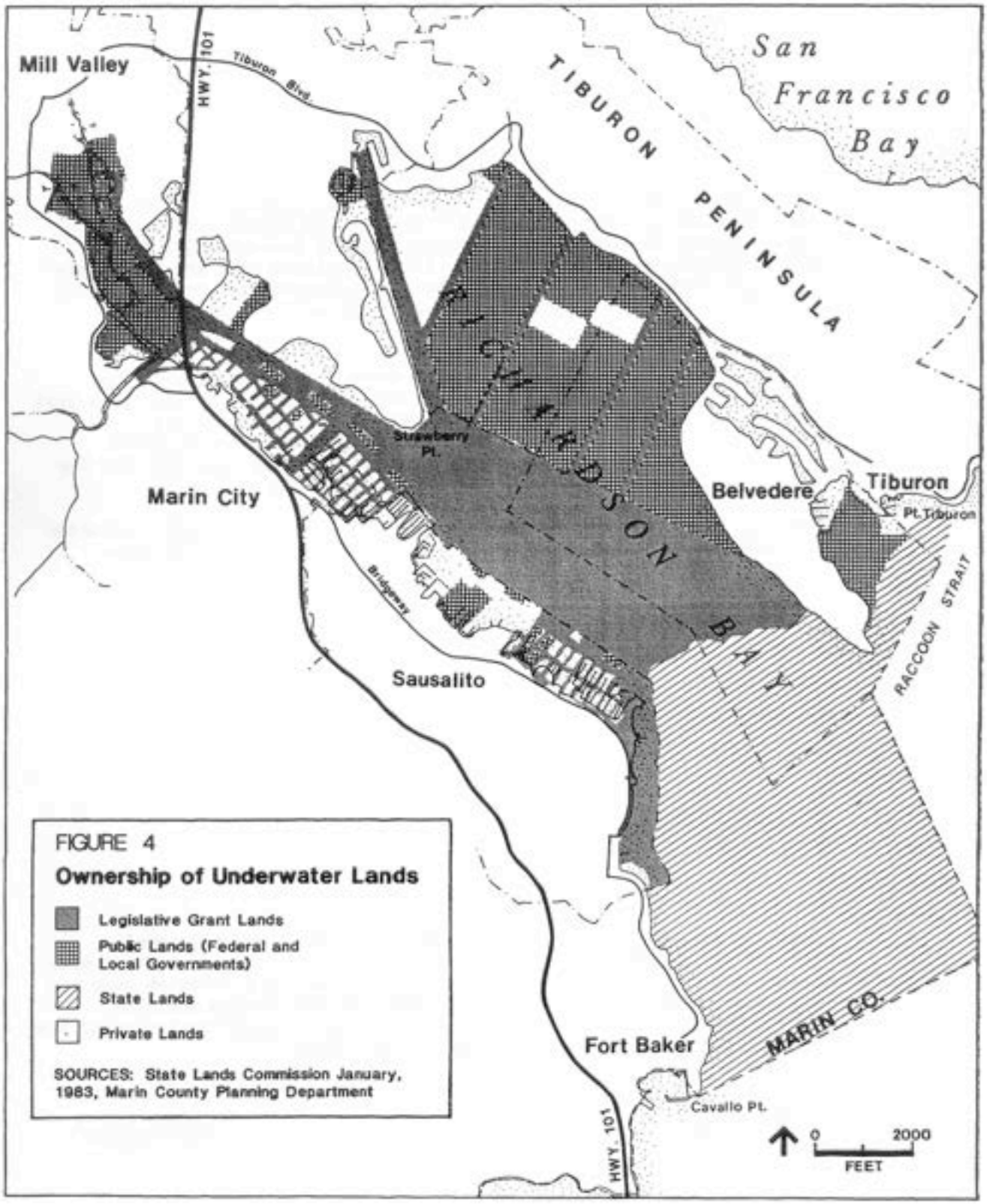
1 The term "limited number" is intended to mean a "relatively small number" of berths, or houseboats, or live-aboards to be consistent with the Attorney General's advice. "Limited number" is a relative term and the exact number that would be authorized at each marina would be dependent on the size of the marina and the individual facilities of the marina such as parking and sanitary capabilities.

2 As proposed, the Gates Cooperative project would be located at an existing houseboat marina. The Galilee Harbor Community Association, an existing residential maritime community, proposes to relocate on the Sausalito waterfront.


Mill Valley
HWY. 101
Tiburon Blvd
TIBURON PENINSULA
San Francisco Bay
RICHARDSON BAY
Strawberry Pt.
Marin City
Belvedere
Tiburon
Pt. Tiburon
Bridgeway
Sausalito
RACCOON STRAIT
MARIN CO.
Fort Baker
Cavallo Pt.
HWY. 101
0
2000
FEET
FIGURE 4
Ownership of Underwater Lands
Legislative Grant Lands
Public Lands (Federal and Local Governments)
State Lands
Private Lands
SOURCES: State Lands Commission January, 1983, Marin County Planning Department

PUBLIC ACCESS, VIEWS, AND VISTAS

Richardson Bay is the visual center of southern Marin County and its dominant and single most important natural resource. In few other areas of San Francisco Bay do so many people live either on or in such close proximity to the water. Richardson Bay is a prime Bay Area recreation resource offering activities ranging from sailing its protected waters and walking or bicycling its shoreline paths to dining in one of the many shoreline restaurants which offer magnificent views of the open Bay waters, passing boats, and distant wooded shoreline. Visual access to its waters and physical access to its shoreline enrich the experience of those living near or visiting Richardson Bay.

FINDINGS

1. Public access includes visual access from inland areas to Richardson Bay and its shoreline and from the water to the inland areas.

2. The shoreline of Richardson Bay contains many uses: residential, commercial, industrial, and public park and open space. Local governments with jurisdiction over Richardson Bay: Marin County and the cities of Sausalito, Mill Valley, Tiburon, and Belvedere, and the Bay Commission require that new developments provide public access to the shoreline of the Bay. The shoreline of Richardson Bay presents an opportunity for the development of a unified public access system linking public parks and accessways along the entire shoreline.

3. Although access to and along the shoreline has increased greatly over the last few years, there is still potential for development of new access, as sites are developed or redeveloped. Local governments and the Strawberry Recreation District have contributed to improved Bay access by providing a number of parks along the waterfront and acquiring the Northwestern Pacific Railroad right-of-way along much of the western shore of Richardson Bay and constructing the Marin County bike path on it. In addition, the local governments have proposed development of additional access and recreation facilities along the waterfront. However, other demands for limited public funds will reduce funds available for the provision of shoreline access by these agencies. Additional public access to Richardson Bay is needed and this can be provided in part by the private sector as part of shoreline development and through grants, gifts, and donations from a variety of public and private sources.

4. In some areas the natural resources in Richardson Bay constrain public access. Examples include sensitive wildlife habitats, such as the harbor seal haul out area, bird rookeries, some marsh areas, and unsafe areas such as steep cliffs.

5. Sandy beaches, such as on the Schoonmaker property in Sausalito, are rare in southern Marin County, and are an important resource for public enjoyment.

6. At some sites, public access could conflict with existing uses or a proposed project. Some water-related industrial uses, such as boat construction and repair yards, might pose a hazard to members of the public unless the public area is adequately separated from the work area. If properly designed and of sufficient size, public access can usually be compatible with any use; however, the potential for conflict is greatest between the general public using access areas immediately adjacent to private residential uses. For this reason, special consideration should be given to the design of public access in residential areas.

7. Richardson Bay, Mount Tamalpais, and San Francisco serve as the major focal points of views and vistas in the Richardson Bay area. Richardson Bay is both a unifying element for the area and a physical divider of its parts. The surface of the Bay and the near, medium, and far vistas it affords offer relief from the urbanized areas and help to create a sense of psychological well-being.

8. Probably the most widely enjoyed "use" of the Bay is simply viewing it – from the shoreline, from the water, and from afar. Views of Richardson Bay also enhance property values. For example, a Bay view can add substantially to the value of a home, office, or apartment building. Also, the water is a major visitor attraction for the tourist industry.

9. Improperly sited buildings and plantings of dense vegetation often block major view corridors to the Bay.

POLICIES

1. A continuous unified public access system should be provided around the entire periphery of Richardson Bay.

2. Maximum feasible public access to and along the Richardson Bay shoreline should be provided as part of each shoreline or water area development consistent with the project. Such areas would include continued development of the pedestrian promenade on the Bay side of existing buildings in downtown Tiburon. The access areas should be connected to existing adjacent public access areas, public park and open space facilities, and public rights-of-way; be related to the adjacent uses; and be designed, constructed, and maintained to indicate their public nature. If there is no public access on adjacent land, but could reasonably be expected to be

provided in the future as part of a development, the public access design should provide for connection to the future adjacent access area. In cases where public access at the project site would be inconsistent because of public safety considerations or significant use conflicts, access should be provided offsite, in nearby areas.

Special consideration should be given in the design of public access areas in marinas where houseboats and live-aboards will be moored to assure that the private residential use does not interfere with the public access use of the marina shoreline.

3. Sandy beaches, such as that on the Schoonmaker property in Sausalito, should be protected for public access and use.

4. Public access areas should be landscaped and appropriate amenities such as seating, lighting, trash containers, drinking fountains, and restrooms should be provided where appropriate. These facilities should be maintained as part of the project and clear and visible signing of the public access area should be provided. Adequate public parking and access facilities for the handicapped should be provided for public use of the access area.

5. Pedestrian and bicycle paths should be separated wherever possible. Access paths for pedestrian use only should be a minimum of six feet in width, and paths designed for bicycle use only should be a minimum of ten feet in width wherever such widths are feasible. Paths designed for joint pedestrian and bicycle use should be 13 feet in width wherever possible.

6. Public access to some natural areas should be provided to permit study and enjoyment of these areas (e.g. by boardwalks on piers in or adjacent to some sloughs or marshes). However, some wildlife habitats may be sensitive to human intrusion. For this reason access in such areas should be limited and design of the access should be carefully evaluated in consultation with appropriate agencies and organizations, such as the Department of Fish and Game and the Audubon Society, to determine the appropriate location and type of access to be provided.

7. New parks and access areas, such as the upland property adjacent to south Bothin Marsh, should provide, where possible, for a variety of activities such as walking, bicycling, picnicking, fishing and boating. Wherever possible, new projects should bring the public into contact with the water. Where feasible and desirable such facilities as small boat launching ramps and dinghy tie-ups should be provided for access from water to land.

December 6, 1984

8. New recreational boating marinas should provide facilities for guest boats and dinghy tie-ups to provide access from water to land for transient boaters. Existing marinas are encouraged to provide the same boating facilities.

9. All local, regional, and state agencies should work together to provide new public access and parks, especially to link the existing shoreline parks and public access areas to the extent feasible without additional filling in the Bay or adversely affecting natural resources.

10. In all shoreline development, the siting and height of all buildings and placement of landscaping should maintain views and vistas of Richardson Bay, Mount Tamalpais and San Francisco through the project from major roadways, vista points, and the shoreline. All development should be subject to design review processes.

11. The public should have a clear visual link between public thoroughfares and shoreline public access areas so that the public nature of shoreline access areas is clear.

12. New shoreline development should be built in clusters, leaving open space around or through the buildings to provide views of the Bay. Areas designated as view corridors within these projects should not be blocked by parked cars, high vegetation or other obstructions that restrict Bay views. Building colors and materials should complement the natural setting.

13. Publicly owned lands which provide views or vistas of the Bay, such as streets, walkways, and rights-of-way, should be designated as view corridors.

14. Plant materials for shoreline landscaping should be selected and sited to dramatize and enhance views of the water for shoreline users. The plant materials used should have demonstrated capacity to thrive with minimum maintenance under high wind speed, high atmospheric salt content, a highly saline water table, and poor subsurface soil with varying drainage capabilities. Whenever possible, native plant materials should be used.

15. Educational signing should be provided in shoreline parks and access areas to identify shoreline features and significant flora and fauna.

16. Marin County and the cities abutting Richardson Bay participating in the implementation of the Richardson Bay Special Area Plan should, as part of their current and future planning procedures, identify locations affording or potentially affording views of Richardson Bay and

San Francisco Bay and make provisions in their current and future planning and development processes to safeguard important existing and potential view corridors and vista points of the water from land and the land from the water, whenever such sites are proposed for development, redevelopment, alterations or additions. Planning departments of the County, cities, and BCDC should work jointly to identify short and long-range views and vista goals and a uniform implementation policy.

TIDAL RESTORATION AND MARSH ENHANCEMENT

The surface area of Richardson Bay and total volume of tidal water are important factors in the health of the Bay. The interchange of oxygen at the water surface and the improvement of tidal action and water circulation increases with increased tidal surface area and volume. Recently, tidal action has been restored to former tidal areas in the upper end of Richardson Bay that were diked off from the Bay in the past. Tidal circulation and marsh restoration can be enhanced in these areas. In addition, other former tidal areas can be restored to tidal status thereby increasing water surface area and volume and improving aquatic and wildlife habitat.

FINDINGS

1. Local government and the Bay Commission's plans and policies provide for the protection and restoration of wetlands around Richardson Bay. Diked areas in Mill Valley and Marin County have been acquired and restored by the City and the County.

2. Some improvement in tidal flushing in upper Richardson Bay would be achieved through increasing the tidal prism by restoring diked off areas to tidal action. This action may also improve scouring of the natural channel adjacent to Shelter Bay thereby improving tidal circulation in upper Richardson Bay.

3. Diked marsh areas restored to tidal status would provide improved year-round habitat for certain aquatic and wildlife species. Some existing tidal marshes, especially those recently returned to tidal action, may be enhanced through creation of additional channels or other tidal circulation improvements.

4. The Goodman Marsh, Belloc Lagoon, and Almonte Marsh have become healthy tidal marshes and important wildlife habitat in recent years because of increased tidal circulation within the marshes. The marshes were enhanced by opening the culvert under Hamilton Avenue connecting Goodman Marsh to Shelter Bay to unobstructed tidal flow, by widening and deepening the channel between Belloc Lagoon and Strawberry Cove, and by cleaning the ditch between south Bothin Marsh and Almonte Marsh.

5. Diked marsh areas that can be restored to tidal action or that have been partially restored but can be enhanced further include: (a) Flea Market Pond in Marin City; (b) Coyote Creek Marsh near Tamalpais Junction; (c) south Bothin Marsh also near Tamalpais Junction; (d) north Bothin Marsh in Mill Valley; (e) Almonte Marsh in Mill Valley; (f) Middle School Marsh in Mill Valley; and (g) Greenwood Cove Pond on the Strawberry Peninsula.

POLICIES

1. Any tidal restoration or marsh enhancement project should be based on a detailed hydraulic, biologic, and engineering analysis and on the tidal marsh restoration guidelines prepared by the Bay Commission. (Recommendations for implementing restoration and enhancement programs for areas identified in Finding 5 and the following policies are contained in Part III: Carrying Out the Special Area Plan.)

2. Tidal circulation should be restored to Flea Market Pond and Greenwood Cove Pond to the extent compatible with flood protection and sediment control needs.

3. Unobstructed tidal flow should be maintained into Goodman Marsh, Belloc Lagoon, and Almonte Marsh, and into Middle School Marsh during the dry season.

4. Tidal circulation within north and south Bothin Marsh, Almonte Marsh, and Coyote Creek Marsh should be enhanced.

5. Buffer areas should be maintained around restored and enhanced wetland areas to insulate the wetlands from human intrusion and provide upland wildlife habitat, and where appropriate, be planted with native shrubs and trees such as Coast live oak, toyon, and coyote brush. Exotic invasive plants within buffer areas should be removed.

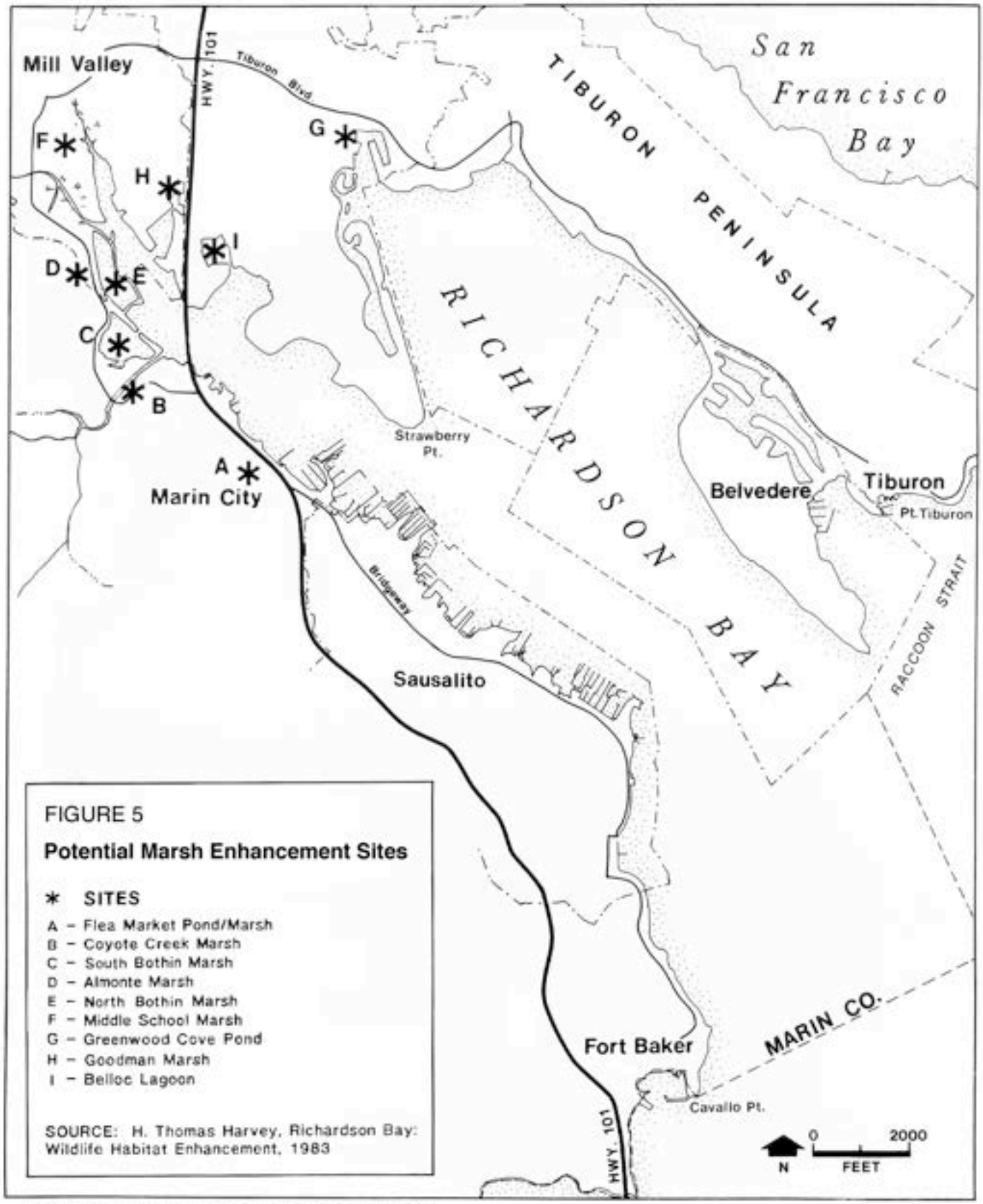


FIGURE 5

Potential Marsh Enhancement Sites

* **SITES**

A – Flea Market Pond/Marsh
B – Coyote Creek Marsh
C – South Bothin Marsh
D – Almonte Marsh
E – North Bothin Marsh
F – Middle School Marsh
G – Greenwood Cove Pond
H – Goodman Marsh
I – Belloc Lagoon

SOURCE: H. Thomas Harvey, Richardson Bay: Wildlife Habitat Enhancement, 1983

RICHARDSON BAY
SPECIAL AREA PLAN

Part II: The Special Area Plan Maps

RICHARDSON BAY
SPECIAL AREA PLAN

THE SPECIAL AREA PLAN MAPS

The Special Area Plan Maps that follow are an integral part of the Richardson Bay Special Area Plan and are based on the Special Area Plan Policies. Plan Maps 1 through 5 indicate the water-related uses of Richardson Bay that are consistent with protecting it as a great natural resource in trust for the needs and benefits of present and future generations. The Navigation Plan, Plan Map 6, identifies the navigation channels and areas that should be locally designated, marked, and maintained for vessel navigation.

The upland areas around Richardson Bay are designated for residential, commercial, industrial, and public park and open space uses in the policy plans and regulations of the local governments and in the Bay Commission's Bay Plan. These designated uses are appropriate uses of the Richardson Bay shoreline and should be continued. The uses are not indicated on the Plan Maps except in cases where existing water and land uses are closely intertwined.

The use of water areas consistent with the policies of local government, the Bay Commission, and public trust needs as indicated on the Plan Maps are as follows:

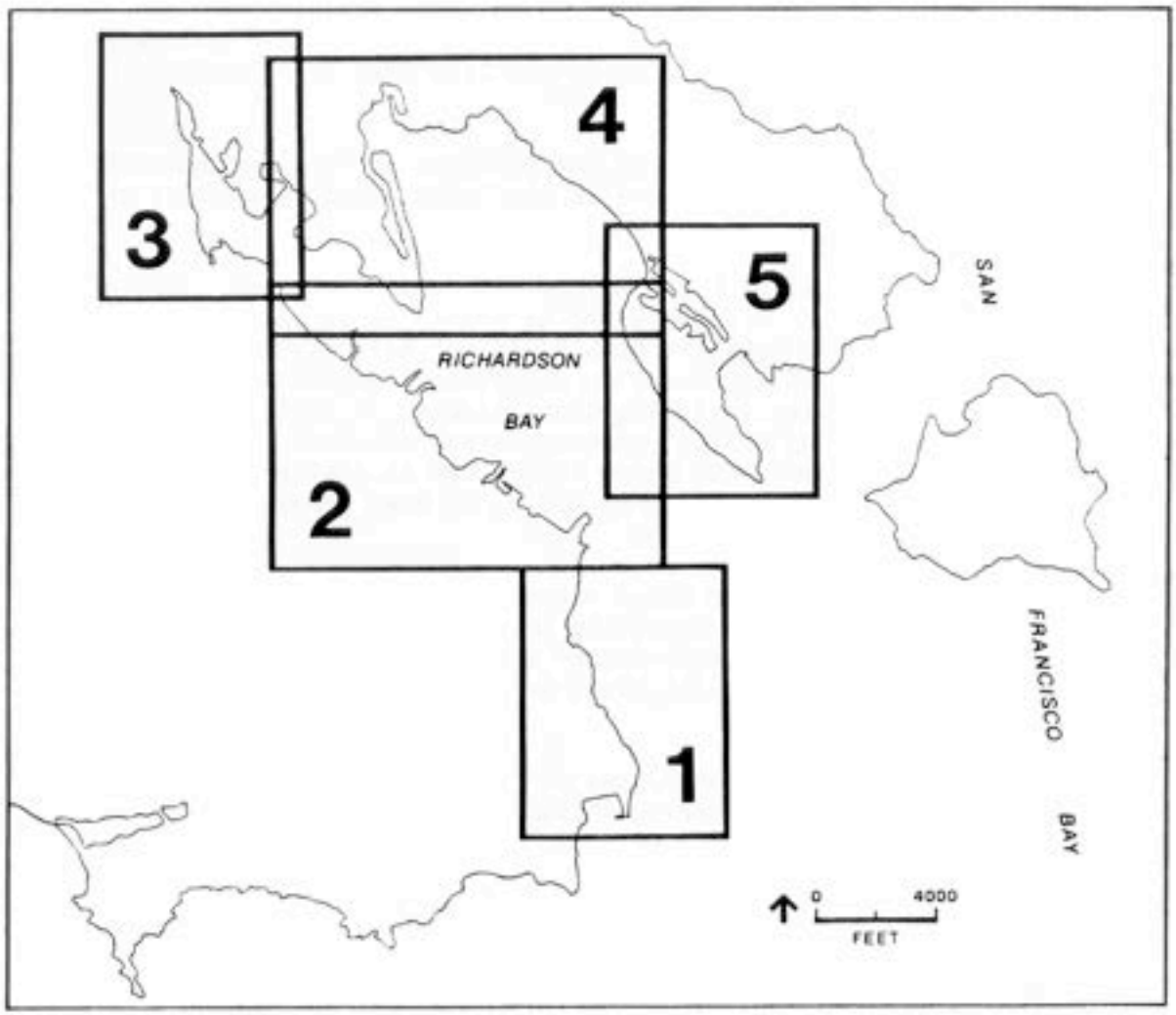
1. Open Water. The shallow tidal waters, marshes, and deeper open waters of Richardson Bay are designated to be protected as open water for aquatic and wildlife habitat; open space and nature study; low intensity water-related recreation uses such as fishing, swimming, wind-surfing, and boating activities including the following facilities for recreational cruising craft: anchorages and moorages, floats, dolphins, buoys, small boat docks and piers (where not in conflict with pierhead and bulkhead lines established by the U. S. Army Corps of Engineers), and small boat launching ramps.

2. Marina Facilities. Deeper tidal waters in areas sheltered from strong winds and storms in close proximity to navigation channels and deep water are designated to be protected for aquatic and wildlife habitat; open space; and marina, yacht club, and marina-related recreational boating use.

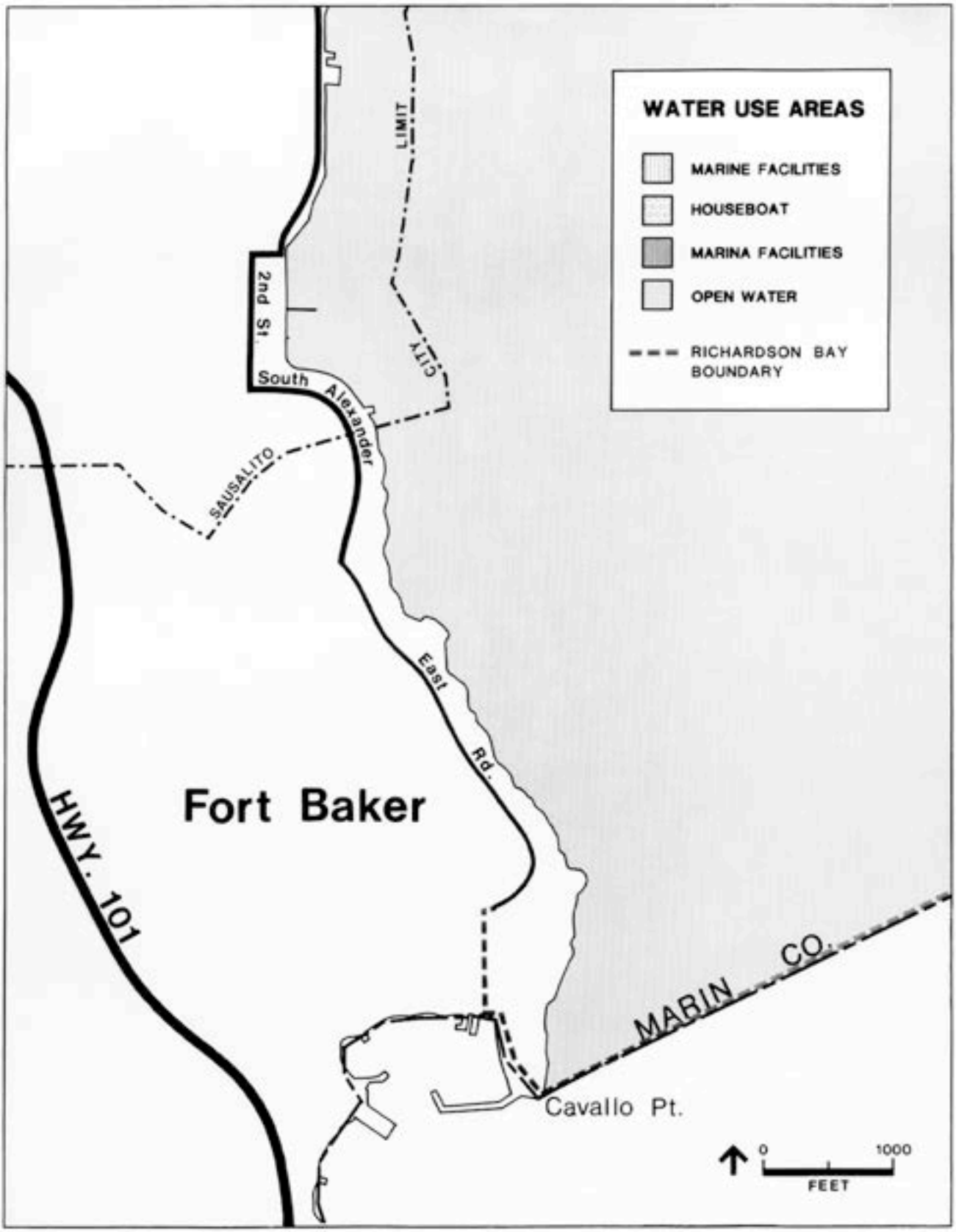
3. Marine Facilities. The waterfront of Sausalito is designated to continue as a "working waterfront" for such marine-oriented uses as boat building, repair, and sales; marine supply and sales; marinas and marina-related facilities; and commercial and sport fishing facilities.

4. Houseboats. The existing houseboat areas are designated for houseboat use for so long as the area is not needed for public trust purposes.

December 6 1984

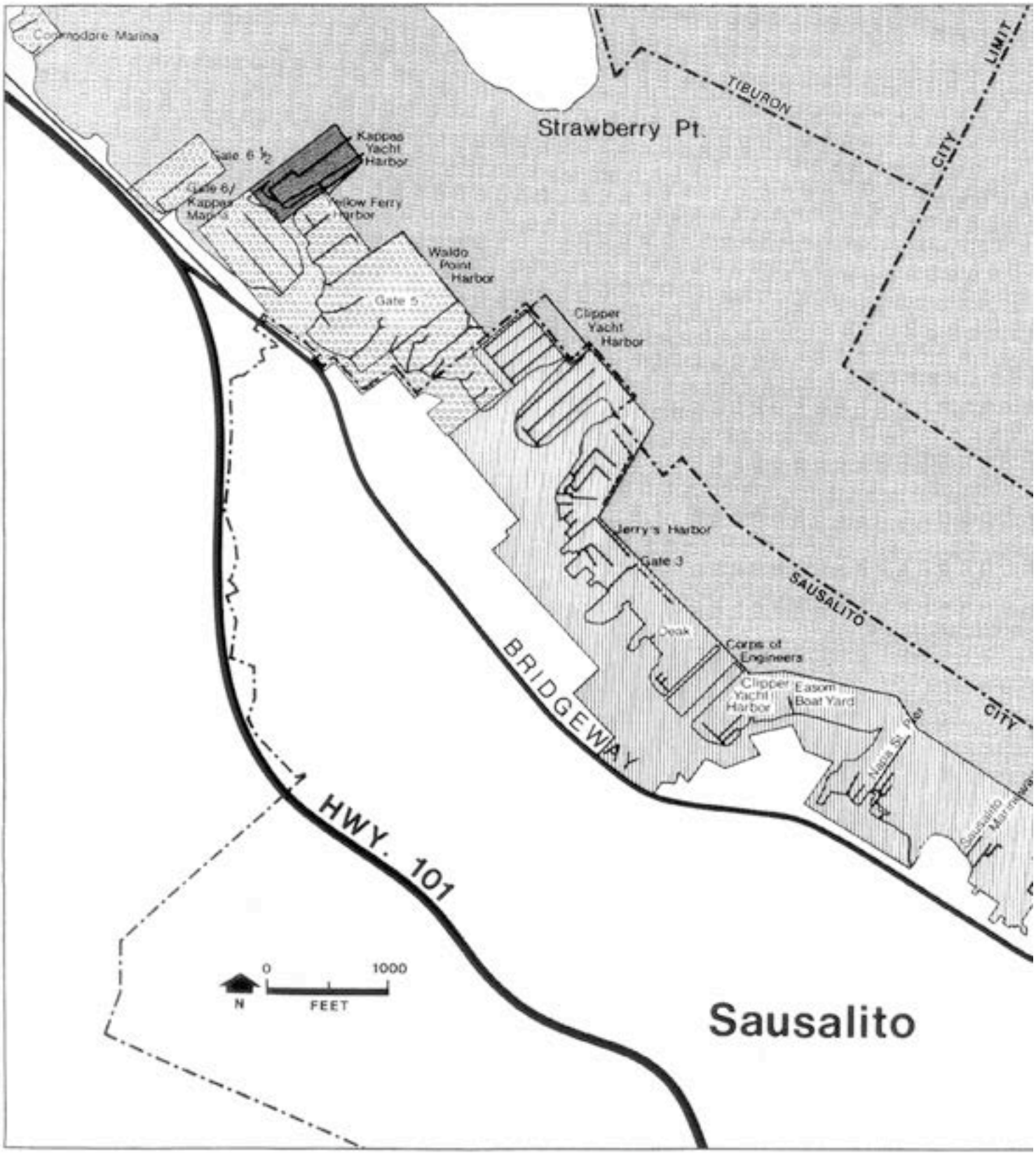


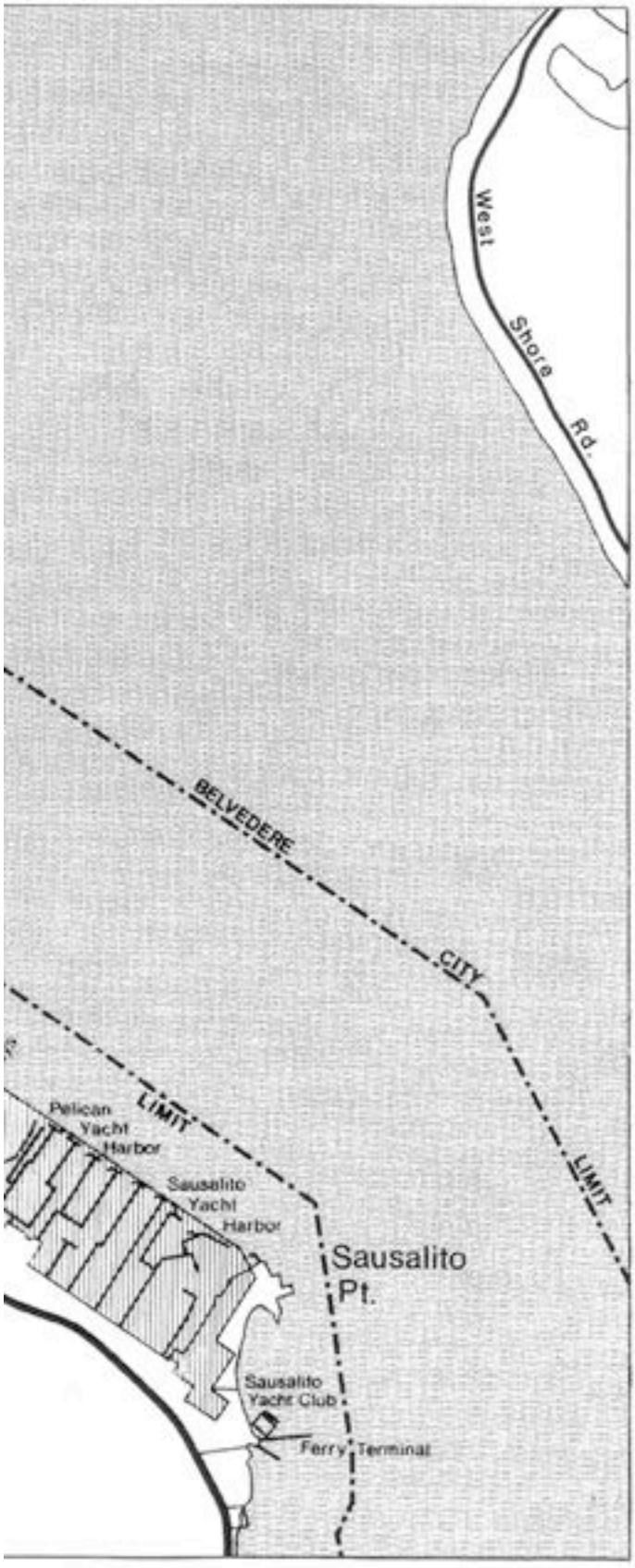
Key to Plan Maps 1-5



RICHARDSON BAY
SPECIAL AREA PLAN

PLAN MAP 1
Southern Sausalito


Commodore Marina
Strawberry Pt.
TIBURON
CITY LIMIT
Kappas Yacht Harbor
Gate 6 ½
Gate 6/ Kappas Marina
Yellow Ferry Harbor
Waldo Point Harbor
Gate 5
Clipper Yacht Harbor
Jerry's Harbor
Gate 3
SAUSALITO
CITY
Corps of Engineers
Clipper Yacht Harbor
Easom Boat Yard
BRIDGEWAY
HWY. 101
0
1000
N
FEET
Sausalito

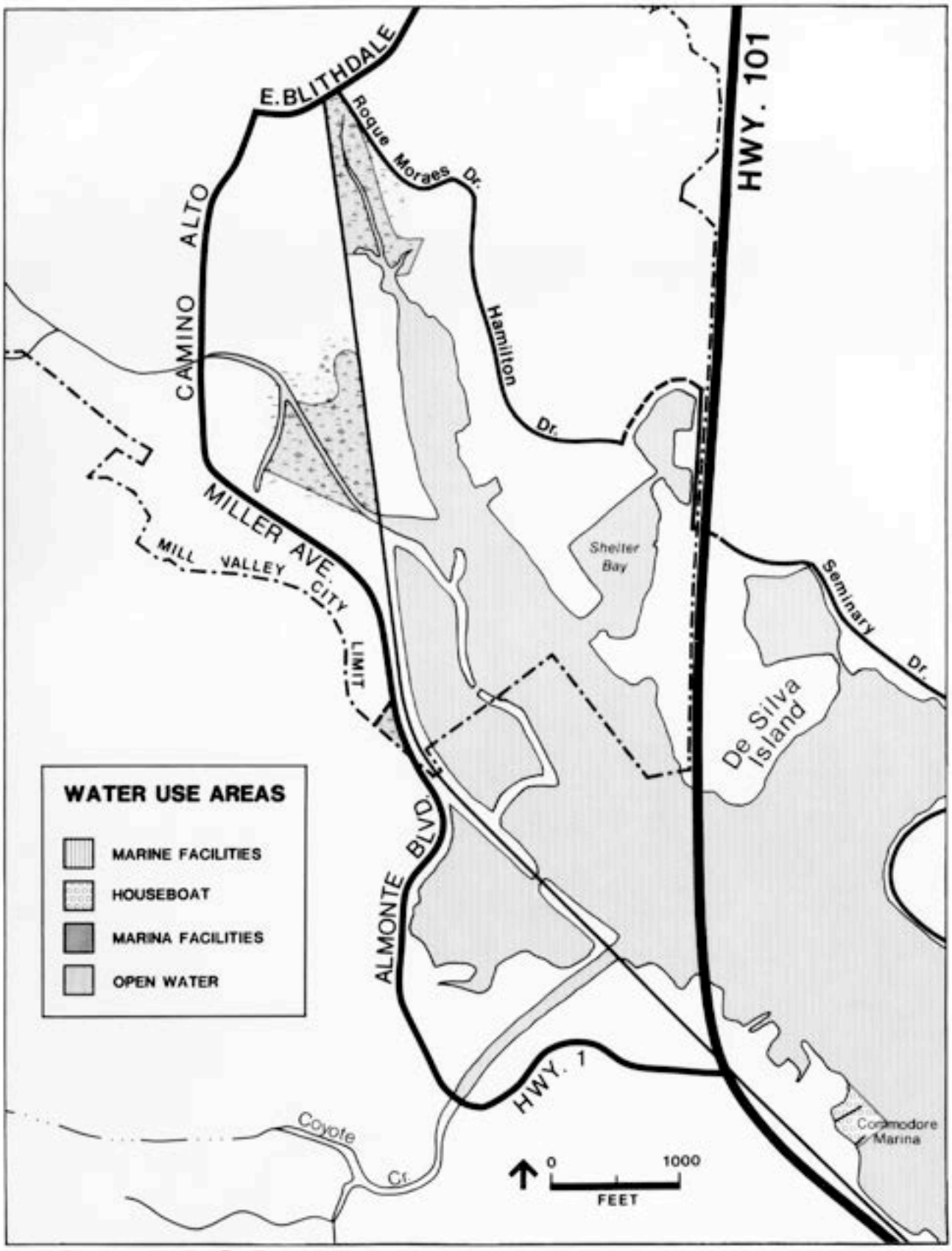


WATER USE AREAS

- MARINE FACILITIES
- HOUSEBOAT
- MARINA FACILITIES
- OPEN WATER

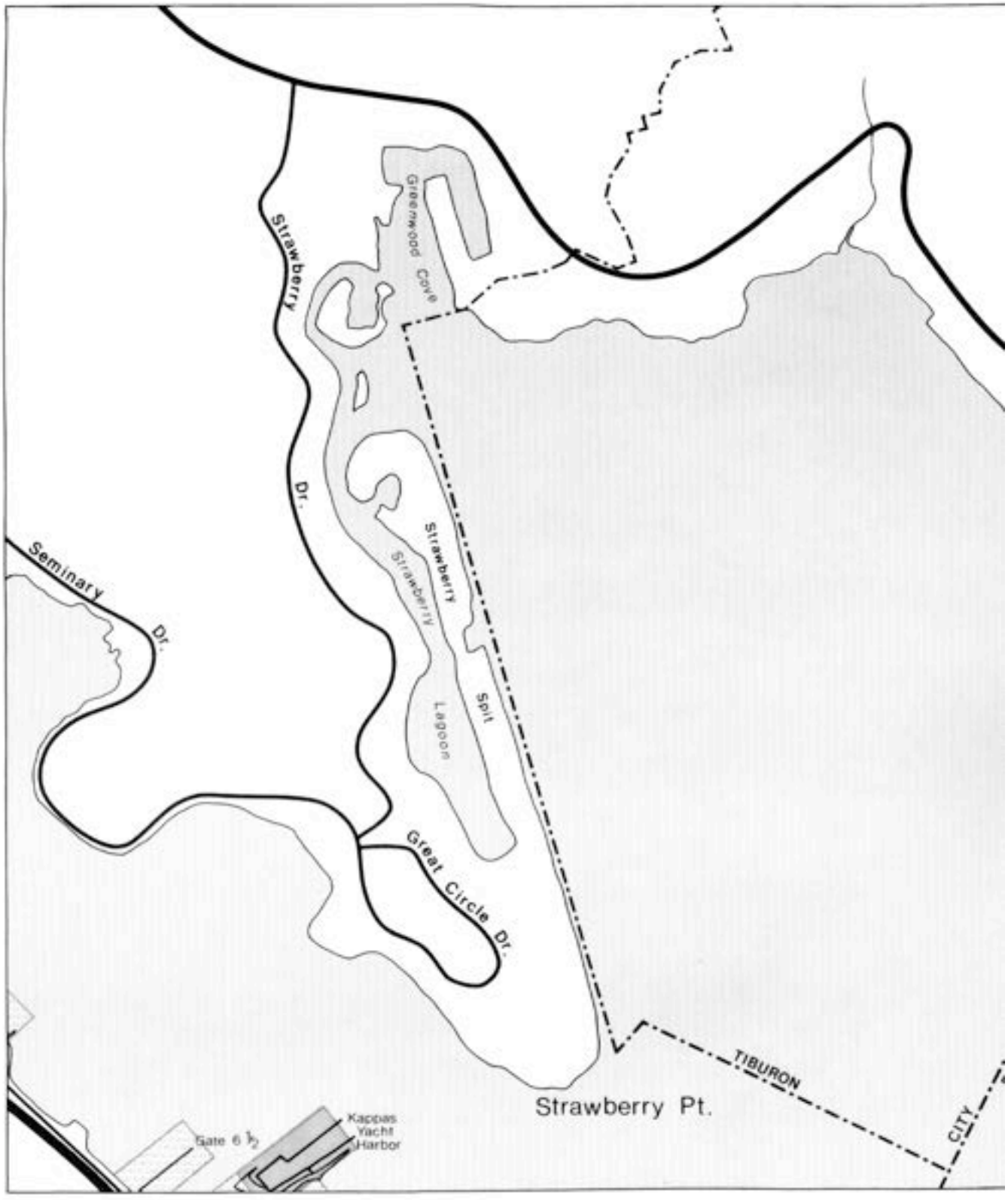
PLAN MAP 2
Northern Sausalito

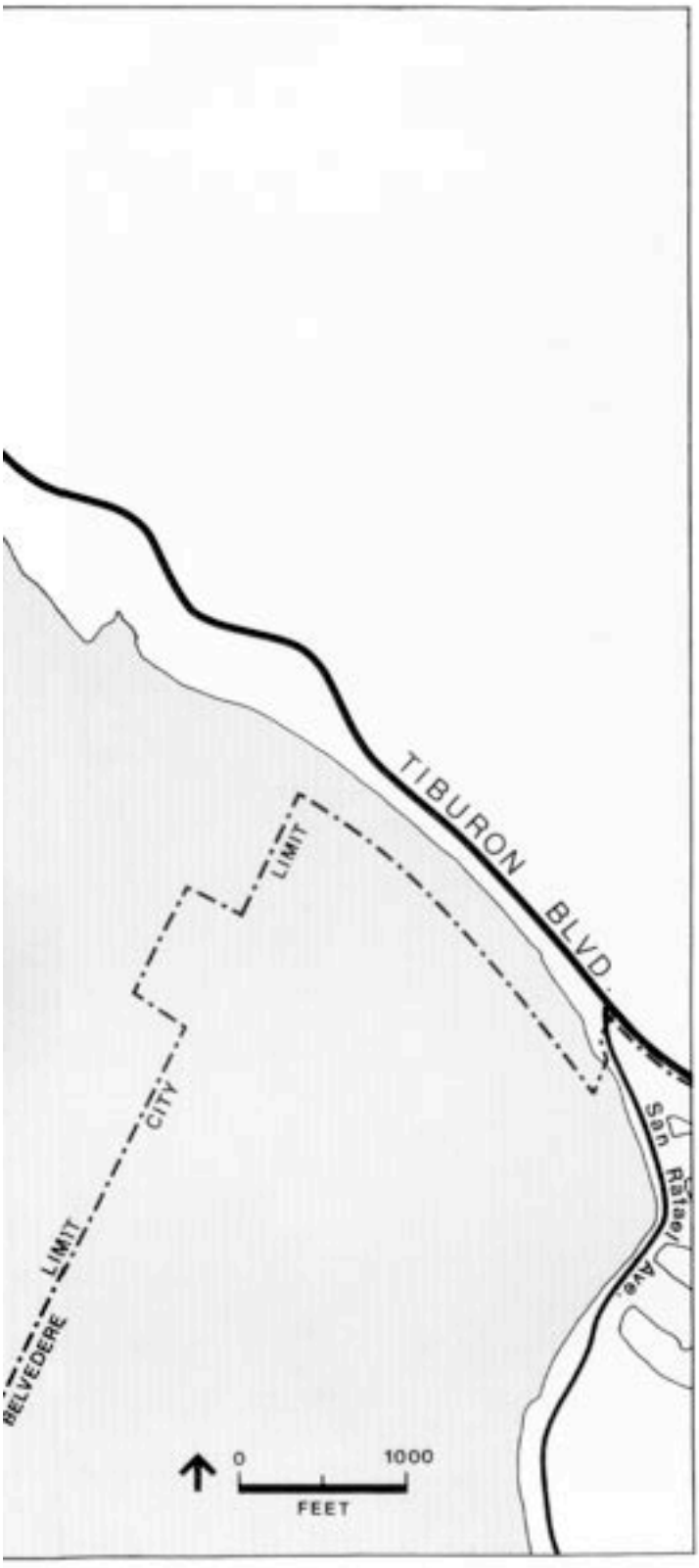
RICHARDSON BAY
SPECIAL AREA PLAN



RICHARDSON BAY
SPECIAL AREA PLAN

PLAN MAP 3
Mill Valley


Strawberry Dr.
Greenwood Cove
Strawberry
Strawberry
Spit
Lagoon
Seminary Dr.
Great Circle Dr.
TIBURON
CITY
Strawberry Pt.
Gate 6 ½
Kappas
Yacht
Harbor



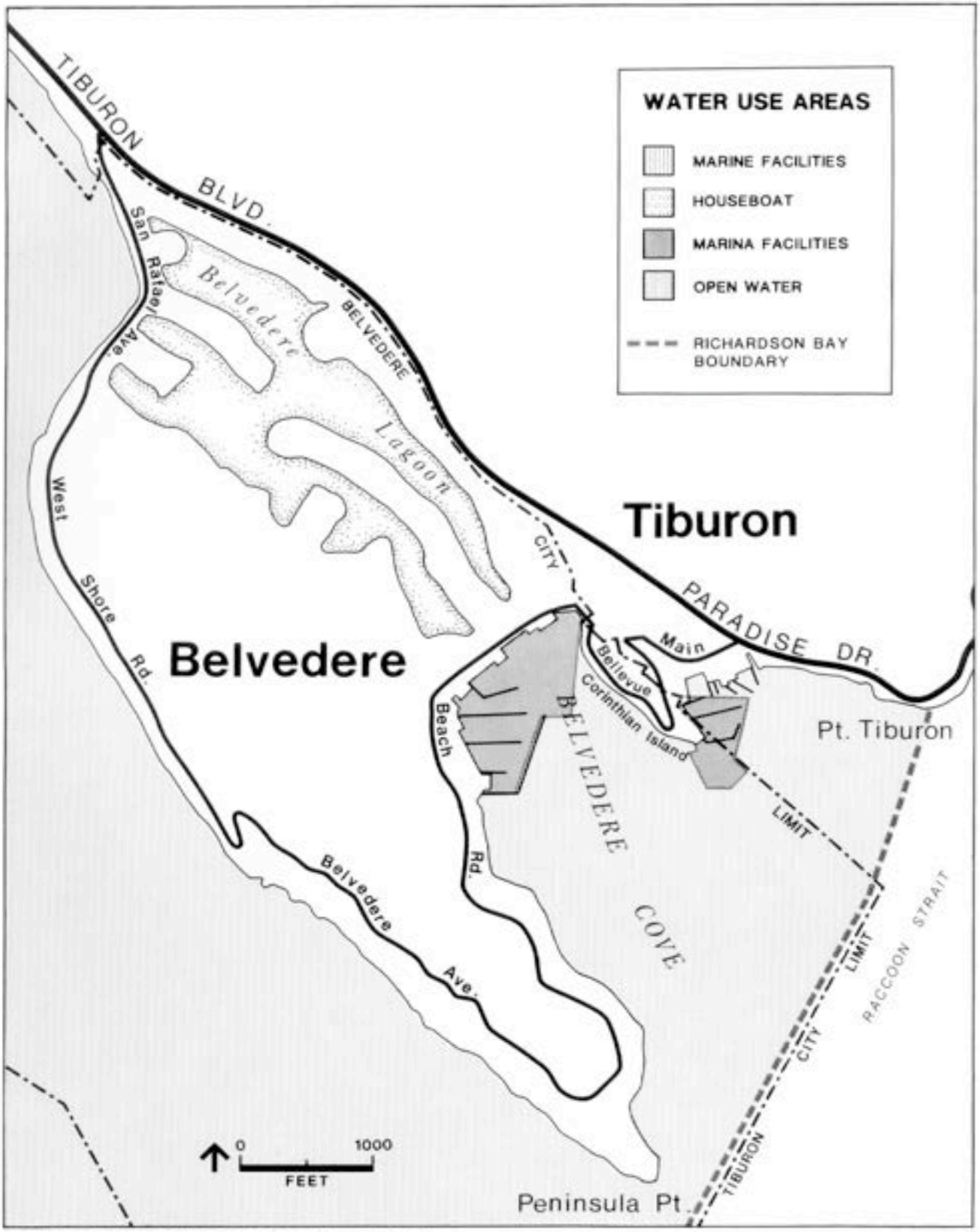
WATER USE AREAS

- MARINE FACILITIES
- HOUSEBOAT
- MARINA FACILITIES
- OPEN WATER

PLAN MAP 4

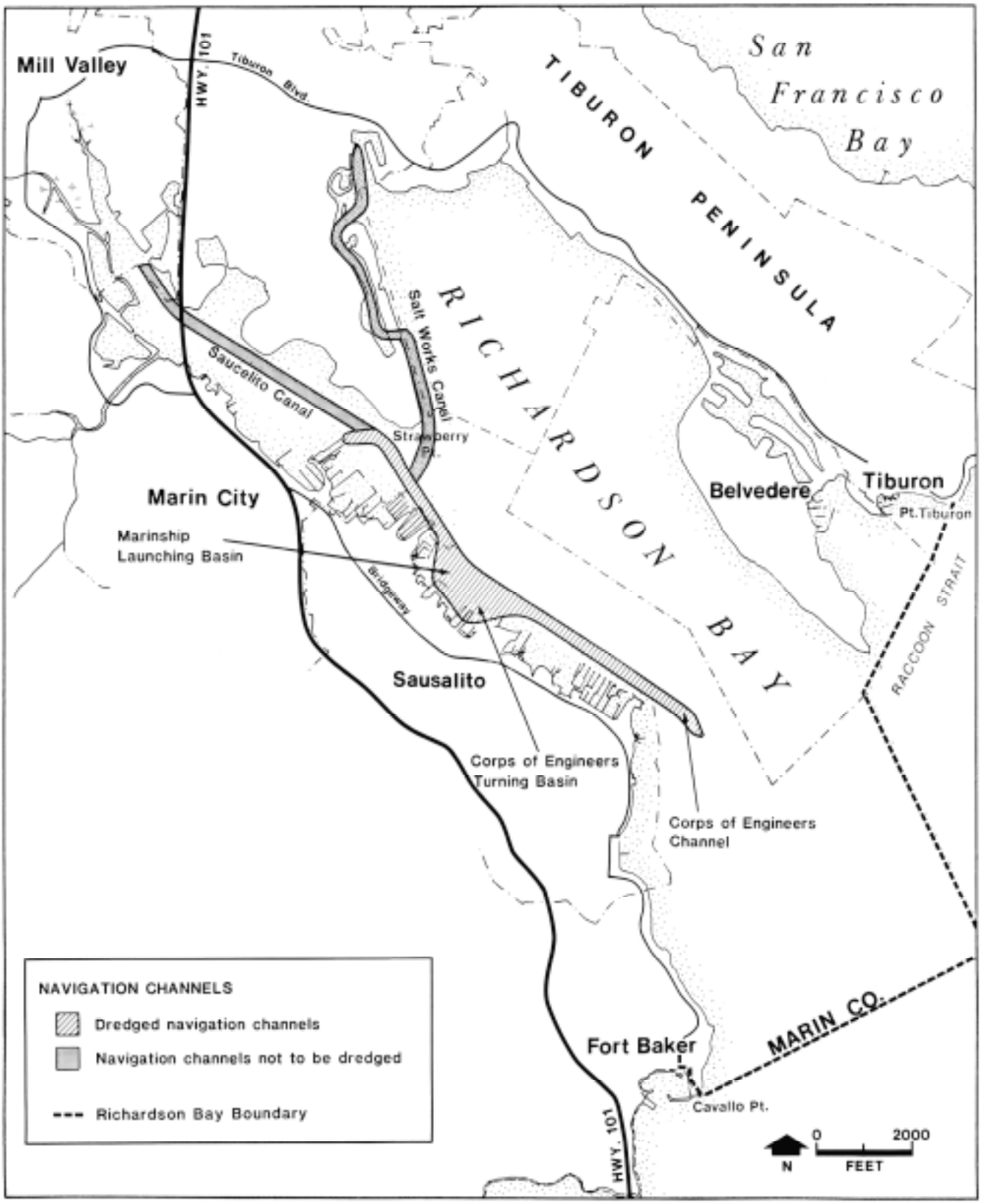
Strawberry Peninsula and Tiburon

RICHARDSON BAY
SPECIAL AREA PLAN



RICHARDSON BAY
SPECIAL AREA PLAN

PLAN MAP 5
Belvedere and Downtown Tiburon



RICHARDSON BAY
SPECIAL AREA PLAN

PLAN MAP 6
Navigation Plan

Part III: Recommendations for Carrying Out the Special Area Plan

RECOMMENDATIONS FOR CARRYING OUT THE SPECIAL AREA PLAN

This part of the Special Area Plan contains recommendations for carrying out the Plan. It is recommended that: (1) the local governments and the Bay Commission establish uniform policy and regulatory control for Richardson Bay by adopting the findings, policies, and map designations as elements of their policy plans; (2) all government agencies carry out their responsibilities and activities in conformity with the policies of the Special Area Plan; (3) Richardson Bay be designated by the federal Environmental Protection Agency as a vessel sewage no discharge area; and (4) the local governments jointly petition the U. S. Coast Guard to amend its Richardson Bay anchorage regulations to include the authority of local anchorage and moorage ordinances as notes to the federal anchorage regulations.

Because certain policies and recommendations of the Plan may best be implemented jointly by the local governments, such as marking and maintaining navigation channels and possible anchorage and moorage areas, it is recommended that a cooperative agreement among the local governments be executed to implement certain policies and recommendations.

Establish Uniform Policy and Regulatory Controls for Richardson Bay

Because the wise use, conservation, and enhancement of Richardson Bay for the benefit of present and future generations are of great concern to the people of Marin County, the Bay Area, and California, it should be the policy of Marin County, Sausalito, Mill Valley, Tiburon, Belvedere, and the San Francisco Bay Conservation and Development Commission to protect, use, and, where possible, restore and enhance the waters and shoreline of Richardson Bay in accord with the findings, policies, map designations, and specific recommendations of the Richardson Bay Special Area Plan.

To assure uniform application of the policies of the Plan throughout Richardson Bay, the local governments and the Bay Commission should adopt Part I. Findings and Policies and Part II. Special Area Plan Maps as amendments to each local government's general plan and applicable regulatory controls and the Bay Commission's San Francisco Bay Plan.

Relation of Local Government Plans and Regulations to the Richardson Bay Special Area Plan

The Richardson Bay Special Area Plan is intended to be an area plan for Richardson Bay as such plans are provided for in Government Code Section 65600 et seq. The policies and map designations of the Special Area Plan are a further specification of each local government's general plan policies and land and water use designations applicable to the unique characteristics of Richardson Bay. As part of the general plan process, the Special Area Plan would become an

amendment to each local government's general plan, like any other plan amendment, and would be internally consistent with the general plan.

Because the Special Area Plan is consistent with almost all uses in each local government's zoning regulations and is a further specification of the particular authorized and permitted uses allowed within the zoning districts, no change to local government zoning regulation is necessary, except where noted in the section Recommendations of Agency Amendments to Policy Plans and Regulation.

Relation of the San Francisco Bay Plan and the Richardson Bay Special Area Plan

The Richardson Bay Special Area Plan is intended to be a more specific application of the general regional policies of the San Francisco Bay Plan and a supplement to those policies because of the unique characteristics of Richardson Bay. Therefore, the policies and map designations of both the Bay Plan and the Richardson Bay Special Area Plan would apply to Richardson Bay except where the two may conflict. In that case, the more specific policies and designations of the Richardson Bay Special Area Plan would control. The policies of the Richardson Bay Special Area Plan are consistent with the provisions of the McAteer-Petris Act (Government Code Section 66600 through Section 66660) and no changes to the Act would be necessary. The policies and map designations of the Special Area Plan are intended to identify public trust needs in Richardson Bay.

Recommendations for Agency Amendments to Policy Plans and Regulations

In order to have a uniform set of planning policies and regulatory controls by the local governments and the Bay Commission over Richardson Bay and its shoreline, specific actions to amend the agencies' policy plans and regulations are recommended. Local governments would adopt the Richardson Bay Special Area Plan according to the normal procedures specified by California planning law for adopting an element of the general plan. Each local government planning commission would hold at least one public hearing before it would take action on the Special Area Plan. Each city council and the Marin County Board of Supervisors would likewise hold a public hearing on the Special Area Plan before taking final action. The Bay Commission would hold at least one public hearing on the Special Area Plan before it can take final action on the Plan. Adequate public notice of the hearings, as prescribed by State planning law and BCDC's regulations, must be given.

Where zoning regulation changes are recommended to implement the policies and land use designations of the Special Area Plan, the local government planning commission would also hold a public hearing on the proposed zoning changes before taking final action and sending a

recommendation to the city council or Board of Supervisors. Similarly, the Council or Board, after public notice, would hold a hearing on the proposed zoning changes prior to taking action on the planning commission's recommendation.

The specific actions each local government and the Bay Commission should take are outlined below:

1. Sausalito

   -- Adopt the Part I. Findings and Policies and Part II. Special Area Plan Maps germane to Sausalito as an element of the Sausalito General Plan.

2. Mill Valley

   -- Adopt the Part I. Findings and Policies and Part II. Special Area Plan Maps germane to Mill Valley as an element of the Mill Valley General Plan.

   -- Change the existing Commercial Recreation District zoning for the property at the upper end of Richardson Bay that is tidal water and marsh to an Open Area District zone.

3. Tiburon

   -- Adopt the Part I. Findings and Policies and Part II. Special Area Plan Maps germane to Tiburon as an element of the Tiburon General Plan.

4. Belvedere

   -- Adopt the Part 1. Findings and Policies and Part II. Special Area Plan Maps germane to Belvedere as an element of the Belvedere General Plan.

5. Marin County

   -- Adopt the Part I. Findings and Policies and Part II. Special Area Plan Maps germane to Marin County as an element of the Marin Countywide Plan.

   -- Change the existing Limited Agricultural District zoning to Open Area District zone and combine with the Bayfront Conservation District zone to the extent possible.

-- Change the existing Resort and Commercial Recreation District zoning that is solely in the water area to Open Area District zone and combine with the Bayfront Conservation District zone to the extent possible.

-- Change the Resort and Commercial Recreation District zoning at Waldo Point Harbor, Yellow Ferry Harbor, and Commodore Marina to Floating Home Marina District zoning.

6. San Francisco Bay Conservation and Development Commission

-- Adopt Part I. Findings and Policies and Part II. Special Area Plan Maps as an amendment to the San Francisco Bay Plan. Add a note referring to the authority of the Special Area Plan to Bay Plan Map No. 11. Amend the notes to Bay Plan Map No. 11 to reflect the policies and provisions of the Special Area Plan.

-- Amend the BCDC federally approved Management Plan for San Francisco Bay to reflect adoption of the Special Area Plan.

Amending the Special Area Plan

The Special Area Plan would amend local governments' general plans and the Bay Commission's Bay Plan. Each agency may amend its policy plan under the provisions set out in State law. Authorization from any of the participating agencies would not be necessary for one agency to amend its general plan or the Bay Plan. But proposed amendments should be referred to each of the participating agencies for review and comment prior to the public hearing and adoption.

As with all plans, the Special Area Plan should be regularly monitored and reviewed. A formal procedure evaluating the plan and determining the need for amendment to reflect changes and new information should be established. This review should take place on an annual basis and at the staff level could be carried out through the Marin City and County Planning Directors' Association and at the council member and supervisor level through the Marin Countywide Plan Advisory Committee.

In regard to Special Area Plan amendments, it must be remembered that development in Richardson Bay and within 100 feet of the shoreline requires authorization from both the local government and the Bay Commission. Thus, to receive necessary authorization a development would need to be consistent with the Special Area Plan amended local government general plan, and the amended Bay Plan. A development that would be inconsistent with both the local general plan and the Bay Plan would require a favorable amendment to both policy plans before the development could be authorized.

Require the Actions of All the Governmental Agencies in Richardson Bay to be Consistent with the Richardson Bay Special Area Plan

Local, state, and federal agencies with jurisdiction and activities within Richardson Bay should carry out their responsibilities and activities in conformity with the policies of the Richardson Bay Special Area Plan. Because Richardson Bay is part of the BCDC segment of the California Coastal Zone, federal agencies should, upon federal certification of the BCDC adopted Special Area Plan as an amendment to the Bay Commission's Management Program for San Francisco Bay, comply with the provisions of the Special Area Plan pursuant to the requirements of the federal Coastal Zone Management Act of 1972, as amended.

Enforcement of the Provisions of the Special Area Plan

Enforcement of the Special Area Plan should primarily be undertaken by local government. Enforcement of all local matters should be carried out by local governments pursuant to their enforceable plans, policies, and regulations. Local governments should adopt new ordinances and enforcement mechanisms when necessary to carry out the policies of the Special Area Plan. If a cooperative agreement among the local governments is developed as recommended in this Plan, the specific enforcement powers to be carried out under the agreement should be spelled out in the agreement. The BCDC should enforce those matters over which it has authority in Richardson Bay and which cannot be enforced by local government or by a cooperative agreement of the local governments.

Designation Of Richardson Bay As No Discharge Area

Richardson Bay should be designated by the federal Environmental Protection Agency (EPA) as a no discharge area in which the discharge of sewage from vessels is prohibited. In order to establish such a no discharge area, federal law requires that it be shown by the State that adequate facilities for the safe and sanitary removal and treatment of sewage from all vessels are reasonably available.

The procedure to follow to secure an EPA no discharge area designation would be to prepare a written request to the San Francisco Bay Regional Water Quality Control Board asking the Board to prepare an application to the EPA for the no discharge area designation. The request should include all the information the Regional Board would need to certify that the protection and enhancement of the waters of Richardson Bay require greater environmental protection than afforded by the applicable federal standards. The information should include:

-- A map showing the location of commercial and recreational pumpout facilities;

-- A description of the location of pumpout facilities.

-- The general schedule of operating hours of the pumpout facilities;

-- The draft requirements on vessels that may be excluded because of insufficient water depth adjacent to the facilities;

-- Information indicating that management of wastes from such pumpout facilities is in conformance with federal law; and

-- Information on vessel population and vessel usage of Richardson Bay.

The Regional Board would conduct a public hearing on the proposed no discharge designation and by a resolution of the Board request EPA to declare Richardson Bay a no discharge area. The Regional Board's application would be transmitted to the State Water Resources Control Board for approval and the application would be submitted to EPA by the State Board. The EPA Administrator would make a determination of whether to establish a Richardson Bay no discharge area within 90 days of receiving the application.

Establishing Locally Designated Anchorages and Moorages in Richardson Bay

The local governments should jointly petition the District Commander of U. S. Coast Guard District 12 to change the Coast Guard regulations governing Anchorage No. 3, General Anchorage, and Anchorage No. 2, Special Anchorage, to either: (a) include local anchorage and moorage ordinances as notes to the Coast Guard anchorage regulations; or (b) establish Anchorage No. 3 and Anchorage No. 2 as non-anchorage areas except when in conformity with applicable ordinances and regulations of the local governments. In establishing the local ordinances and regulations and/or non-anchorage designations, anchoring of vessels within the boundaries of the Audubon Society's Richardson Bay Wildlife Sanctuary should be prohibited during the period October 1 to April 1 of each year.

Marsh Restoration and Enhancement Programs

Following are recommendations for restoring, enhancing, and maintaining tidal circulation and wildlife habitat at Flea Market Pond, Coyote Creek Marsh, north and south Bothin Marsh, Almonte Marsh, Middle School Marsh, Belloc Lagoon, and Goodman Marsh:

1. Flea Market and Greenwood Cove Ponds. Flea Market and Greenwood Cove Ponds should be restored to tidal action. To the extent compatible with flood protection and sediment control needs, the Flea Market Pond tide gate at Highway 101 should be removed to permit

unobstructed tidal flow into the pond and the marsh area on the perimeter of the pond should be increased by excavating back and decreasing the steepness of the pond bank. A wider channel connecting Greenwood Cove Pond to the Salt Works Canal should be constructed to facilitate tidal flow into the Pond. A buffer area around each pond at least 40 feet wide and planted with appropriate native shrub and tree species such as coast live oak, toyon, and coyote brush should be established.

2. Coyote Creek Marsh. Tidal flow and circulation into Coyote Creek Marsh should be improved by increasing the size and number of the small drain culverts under the bike path along Coyote Creek that connect the Marsh with the Creek.

3. South Bothin Marsh. A buffer at least 40 feet wide should be established around south Bothin Marsh and planted with appropriate native shrubs and trees such as coast live oak, toyon, and coyote brush.

4. North Bothin Marsh. Tidal circulation in north Bothin Marsh should be improved by excavating a channel from east to west through the southern end of the east levee. A culvert connecting the northwestern arm of south Bothin Marsh to north Bothin Marsh would further enhance tidal circulation in both marshes. Appropriate native shrubs and trees, such as coast live oak, toyon, and coyote brush, should be planted around the perimeter of the marsh including the former levees.

5. Almonte Marsh. The ditch that transports tidal water to Almonte Marsh should be kept clean and open to permit maximum tidal flow and upland water drainage. A buffer area on the Tamalpais High School side of the Marsh at least 20 feet wide should be established and planted with appropriate native shrubs and trees to screen the habitat from any upland development and provide food and shelter for wildlife.

6. Middle School Marsh. Unobstructed tidal flow into the Middle School Marsh should be maintained during the dry season when the Marsh is not needed for flood control purposes.

7. Goodman Marsh and Belloc Lagoon. Unobstructed tidal flow should be maintained into Goodman Marsh and Belloc Lagoon. The culvert connecting Goodman Marsh to Shelter Bay should be kept clear of obstructions and the channel connecting Belloc Lagoon to Strawberry Cove should be maintained at its existing width and depth. A buffer area at least 40 feet wide should be maintained around Belloc Lagoon and planted with native trees and shrubs such as coast live oak, toyon, and coyote brush.

De Silva Island Archaeological Site

A major California shell mound once inhabitated by ancient Bay Area residents exists on de Silva Island and is identified in state records as Mrn-17. This archaeological site is a cultural and natural resource that should be protected for scientific study. If and when development of de Silva Island is authorized by Marin County, the County should provide, as a development condition, that sufficient protection of the archaeologic site is provided.

Map of View Corridors and Vista Points

A map showing important existing and potential view corridors and vista points should be prepared jointly by the local governments and the Bay Commission and be included as a future Plan amendment in the map section of the Special Area Plan.

Formation of a Cooperative Agreement

An effective method of implementing many of the policies and recommendations of the Special Area Plan that could be more efficiently carried out jointly by the local governments would be through the development of a cooperative agreement among Marin County, Sausalito, Mill Valley, Tiburon, and Belvedere. The agreement could identify local interests and government functions and services in Richardson Bay that could best be carried out jointly at the local level thereby achieving economies in administration and services. The agreement could provide for the pooling of local government resources and experience in an orchestrated effort to implement those policies and recommendations of the Special Area Plan common and mutually acceptable to each local government.

The agreement could provide for the following services:

-- Establishment, administration, and enforcement of the Navigation Plan, including the removal of debris and other obstructions to navigation; the installation of navigational aids; and the regulation of anchor-outs;

-- Provision of water-based police, fire, rescue, and similar public safety services on and from water rather than land;

-- Planning, administering, and supervising dredging activities;

-- Providing and maintaining vessel sewage pumpout facilities;

-- The administration and enforcement of a vessel sewage no discharge area;

-- Coordination of tidal restoration and marsh enhancement projects;

-- Coordination of grant requests;

-- Advocacy of state and federal tax legislation to benefit boat, marina, and yacht club owners in Richardson Bay who install and operate vessel sewage and graywater treatment facilities in compliance with a Richardson Bay vessel sewage no discharge standard; and

-- Establishment of an anchorage and moorage area to serve transient vessels.

The agreement should not include authority over the normal local government land use planning and regulatory controls, such as zoning and use permits, but could include administration of a permit system for controlling use of anchorage and moorage areas.

Boaters that wished to tie up to a mooring facility or anchor in the anchorage area administered under the terms of the agreement would secure a permit which identified the mooring or anchoring conditions, including length of stay.

The agreement could also include provisions for the authority to issue cease and desist orders and civil penalties for violation of those orders.

ADVISORY COMMITTEE

Karlena Palomares, Planning Consultant, Belvedere

Lida Budko, Planning Director, Mill Valley

Katherine Arnaudo, Planning Staff, Sausalito

Mike Foley, Planning Director, Sausalito

Bob Hanna, Director of Community Development, Tiburon

Ted Rose, Waldo Point Harbor

Wally Mays, Sausalito Environmental Action

Karen Miller, U. S. Fish and Wildlife Service

Michael Hertz, Oceanic Society

Eugene Spake, Tamalpais Community Service District

Bryan Wilson, Save San Francisco Bay Association

Marin City Community Service District

Lance Kiley, State Lands Commission

Lt. Joe Simpson, U.S. Coast Guard

Sharon McNamee, Strawberry Recreation District

Richard Thalheimer, Strawberry Point Homeowners Association

Dave Steckler, Kappas Marina

Chris Tellis, Yellow Ferry Harbor

Annette Rose, Art Zone

Zeke Grader, Pacific Coast Federation of Fisherman

Marin Conservation League

Virgina Brunini, Marin County Board of Realtors

Mary Fisherman, Sausalito

Judith Bang, Sausalito

Barbara Salzman, Marin Audubon Society

December 6, 1984

Barry Hibben, Sausalito Land Trust

Jim Swanson, Department of Fish and Game

Hans Lamm, U. S. Army Corps of Engineers

Allison Thompson, Sausalito

Michael DeLeon, Sausalito

Kevin Miles, Sausalito

Tim Albertson, Sausalito

Peter Amick, Sausalito

Herb Madden, Sausalito Yacht Harbor

James Leech, Pelican Harbor

Cliff Pedersen, Clipper Yacht Harbor

Dan Richardi, Sausalito Cruising Club

Craig W. Brown, Sausalito Yacht Club

Annie Hallatt, Galilee Harbor Community Association

Mary Ann Sears, Sausalito Women's Club

Bill Stine, Sausalito Citizens Council

Anna Purnell, Edgewater Seniors

Dan Roberts, Strawberry Community Council

Margaret Zegart, Almonte District Improvement Club

Lon Ralston, Sausalito Rowing Club

Marin City Community Development Corporation

Bill Feldman, Strawberry Recreation District

John Walker, Sewerage Agency of Southern Marin

STAFF

San Francisco Bay Conservation and Development Commission

Alan R. Pendleton, Executive Director
Jeffry S. Blanchfield, Chief Planner
Margit Hind, Planner
Linda Giannini, Planning Secretary

Marin County

Marjorie W. Macris, Planning Director
June Baker, Policy and Program Planner
Carol Williams, Policy and Program Planner
Paul Lord, Planner

CONSULTANTS

H. Thomas Harvey, estuarine biologist, author of memorandum "Richardson Bay: Wildlife Habitat Enhancement."

Yuki Kawaguchi, cartography and graphic arts.

Martha McCart, planning consultant to Marin County.

Shute, Mihaly & Weinburger, Attorneys-at-Law, authors of the report "Regulations Report for Richardson Bay Special Area Plan."

Philip Williams and Associates, hydraulic engineers, authors of the report "Sediment Hydraulics of Richardson Bay."

sustainable BELVEDERE

GREENHOUSE GAS EMISSIONS INVENTORY
Municipal & Community Scale Analysis
Base Year 2005

CITY OF BELVEDERE

Planning Department

+

METROPOLITAN PLANNING GROUP
PLAN B MUNICIPAL CONSULTING

WWW.BELVEDERE2030.ORG

September 2009

CREDITS AND ACKNOWLEDGEMENTS

CITY OF BELVEDERE

George Rodericks, City Manager
Pierce Macdonald, Planning Manager
Felicia Wheaton, Associate Planner
Becky Eastman, Finance Officer
Scott Derdenger, Public Works Manager
Steven Fracolli, Police Chief
Christine O'Rourke, Planning Consultant
All Belvedere Employees

COUNTY OF MARIN

Dawn Weisz, Sustainability Planner
Omar Pena, Assistant Planner
Mike Frost, Deputy Director of Public Works
Alex Soulard, Waste Management Specialist
Tim Rosenfeld, Director of Marin Energy Management Team

PG&E CONTRIBUTORS

Lynne Galal, Senior Project Manager
Corie Cheeseman, Program Manager

WASTE HAULER

Jennifer Dami, Mill Valley Refuse

METROPOLITAN TRANSPORTATION COMMISSION (MTC)

Benjamin Espinoza, Transportation Planner

BAY AREA AIR QUALITY MANAGEMENT DISTRICT (BAAQMD)

Ana Sandoval, Senior Policy Advisor
Abby Young, Principal Environmental Planner

ICLEI-LOCAL GOVERNMENTS FOR SUSTAINABILITY USA

Michelle Wyman, Executive Director
Alden Feldon, California Manager
Wesley Look, Program Officer
Alison Culpen, Program Associate
Kim Lundgren, US Services Director
Jonathan Strunin, Program Officer
Micah Lang, Program Officer

METROPOLITAN PLANNING GROUP

Geoff Bradley, Principal
Marlene Subhashini, Associate Planner
Lauren Mattern, Assistant Planner

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Executive Summary

Climate change, caused by an increase in the concentration of atmospheric greenhouse gases (GHG), has been called one of the greatest challenges facing society today. Potential climate change impacts in Northern California include: declining water supplies, spread of disease, diminished agricultural productivity, sea level rise, and increased incidence of wildfire, flooding, and landslides. In addition, volatile energy markets are forcing communities to think differently about their resources. In California, policies to reduce GHG emissions are being implemented including, among others, the Attorney General's mandates under the California Environmental Quality Act (CEQA) and the Global Warming Solutions Act of 2006, otherwise known as Assembly Bill 32. AB32 requires that the State's GHG emissions be reduced to 1990 levels by 2020 which is about a 25% reduction under business-as-usual estimates. Local governments will have substantial responsibilities in reaching this goal. With decisive action on climate and energy matters, the City of Belvedere and its community will be strategically positioned to benefit and flourish in this emerging arena.

Belvedere recognizes that climate change is a reality, and that human activities are responsible for increasing the concentration of atmospheric greenhouse gases–the primary drivers of climate change. Belvedere understands that climate change has the potential to significantly impact Belvedere's residents and businesses, as well as other communities around the world. Belvedere also recognizes that local governments play a strong role in reducing GHG emissions and mitigating the potential impacts of climate change. A range of actions can dramatically reduce these emissions from the local community and government operations including increasing energy efficiency in buildings and vehicle fleets, bolstering the use of clean, renewable energy sources, establishing land use and transportation plans that reduce vehicle use, and encouraging waste reduction. The benefits of these measures include lower energy bills, improved air quality, economic development, reduced emissions, and an enhanced quality of life throughout the community.

Belvedere has begun its efforts to address the causes and effects of climate change by collaboration with members of Marin Climate and Energy Partnership (MCEP). These partners include the County of Marin, all 11 municipal governments in the County of Marin, the Marin Municipal Water District (MMWD), and the Transportation Authority of Marin (TAM). The City of Belvedere recently completed this government operations and community-scale greenhouse gas emissions inventory as an important first step in its climate protection initiative. These inventories are essential, as advised by the International Council for Local Environmental Initiatives, now known as ICLEI-Local Governments for Sustainability, to establish:

- A baseline emissions inventory, against which to measure future progress, and
- An understanding of where the highest percentages of emissions are coming from, and, therefore, where the greatest opportunities for emissions reductions lie.

This report contains the estimates of greenhouse gas emissions in 2005 resulting from activities and operations of the City of Belvedere and also those taking place within the geographical boundaries of Belvedere. The first step toward reducing greenhouse gas emissions is to identify sources of emissions and establish baseline levels. This information can later inform the selection of a reduction target and possible reduction measures to be included in the Climate Action Plan.

COMMUNITY EMISSIONS INVENTORY

In 2005, the Belvedere community emitted approximately **12,654 metric tons of CO_2e**. As demonstrated in the charts below, the electricity and natural gas use in Belvedere's Residential Sector was by far the largest source of emissions, generating approximately 7,444 metric tons of CO_2e, or 58.8 percent of total 2005 emissions. Transportation sector emissions, totaling 4,115 metric tons CO_2e and representing 32.5 percent of total emissions, are the result of diesel and gasoline combustion in vehicles traveling on local roads. The Commercial/Industrial Sector, the third greatest source of 2005 emissions, generated 594 metric tons CO_2e, or 4.7 percent of the total. The remaining 4 percent (501 metric tons) are the estimated future methane emissions that will result from the decomposition of waste that was generated by the Belvedere community during 2005.

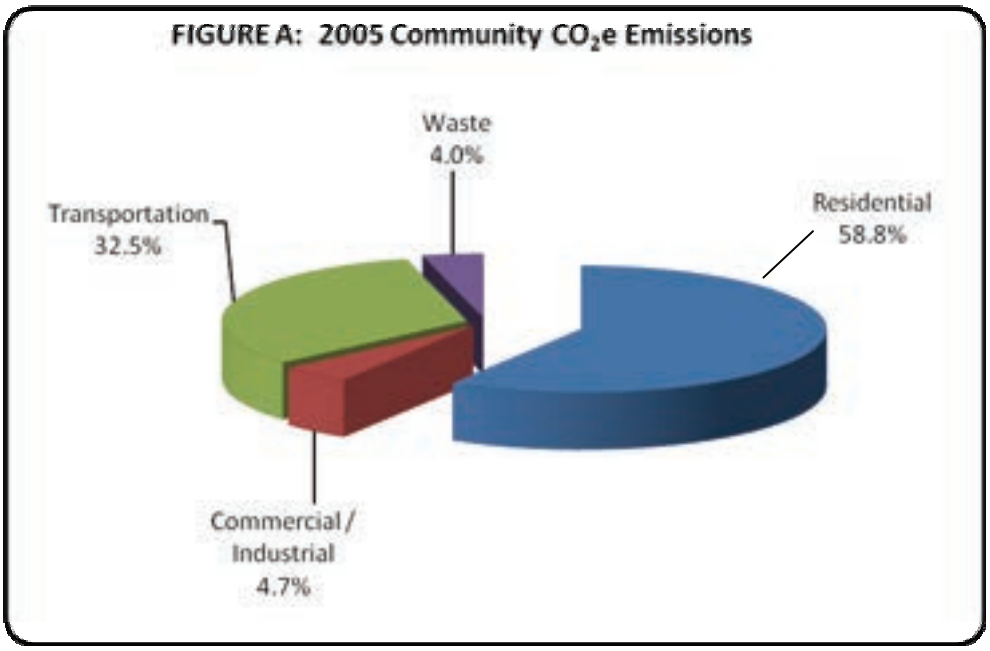


TABLE A: 2005 Community Emissions Summary by Sector

Sector	Greenhouse Gas Emissions (metric tons CO_2e)	Greenhouse Gas Emissions (% CO_2e)	Energy Equivalent (million Btu)
Residential	7,444	58.8%	130,017
Commercial / Industrial	594	4.7%	9,700
Transportation	4,115	32.5%	56,268
Waste	501	4.0%	-
TOTAL	**12,654**	**100.0%**	**195,985**

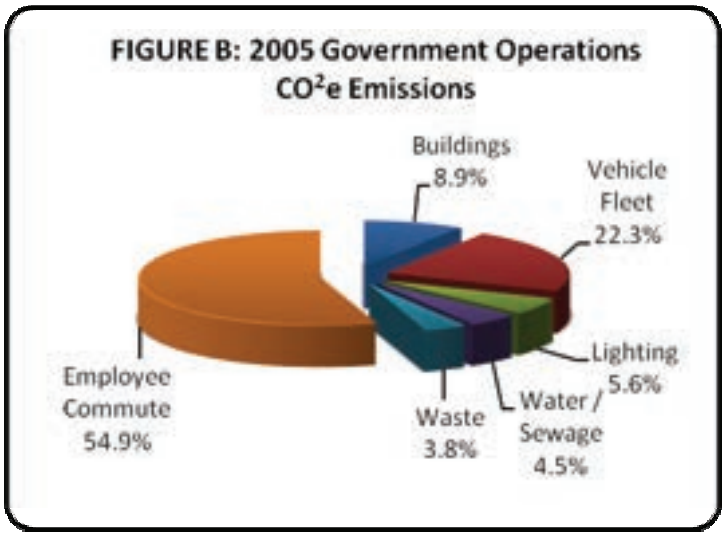
GOVERNMENT OPERATIONS EMISSIONS INVENTORY

In 2005, Belvedere government operations emitted approximately **237 metric tons (tons) of CO_2e**. These municipal emissions constituted approximately 1.9 percent of the community's total quantities. [1] Typically, local government emissions account for approximately two percent of community levels. As a minor contributor to total emissions, actions to reduce municipal energy use and waste will have a limited impact on the Belvedere community's overall emission levels. However, municipal action has powerful symbolic value that extends beyond the magnitude of emissions actually reduced.

Government operations emissions have been categorized according to six primary sectors:

- Buildings and other facilities
- Streetlights, traffic signals, and other public lighting
- Water delivery facilities
- Vehicle Fleet
- Government-generated solid waste
- Employee commute

As demonstrated in the charts below, the Employee Commute Sector was the largest emitter (54.9 percent) in 2005. Emissions from the Vehicle Fleet Sector produced the second highest quantity of emissions, resulting in 22.3 percent of total CO_2e; and the Buildings and Facilities Sector produced 8.9 percent of total emissions. The remainder of emissions came from outdoor lighting, waste, and electricity for pumping water and stormwater.



[1] The City operations figures include all Scope 1 emissions from the on-site combustion of fuels in facilities and vehicles, Scope 2 emissions from the purchase of electricity, and Scope 3 emissions from waste generated by local government operations and emissions associated with employee commute patterns. Emissions from government operations are included as a subset of the Commercial/Industrial Sector.

Cumulatively, the City of Belvedere spent approximately $38,548 on energy (electricity, natural gas, gasoline and diesel) for its operations. Beyond reducing harmful greenhouse gases, any future reductions in municipal energy use have the potential to reduce these costs, enabling Belvedere to reallocate funds toward other municipal services.[2]

TABLE B: 2005 Government Operations Emissions by Sector

Sector	Greenhouse Gas Emissions (metric tons CO_2e)	Greenhouse Gas Emissions (% CO_2e)	Energy Equivalent (million Btu)	Cost ($)	% of Total Cost
Buildings	21	8.9%	338	$11,029	28.6%
Vehicle Fleet	53	22.3%	722	$14,588	37.8%
Lighting	13	5.6%	194	$6,125	15.9%
Water / Sewage	11	4.5%	160	$6,806	17.7%
Waste	9	3.8%	-	-	0.0%
Employee Commute	130	54.9%	1,675	-	0.0%
TOTAL	**237**	**100.0%**	**3,089**	**$38,548**	**100.0%**

[2] No cost is associated with waste or employee commute because the City does not pay directly for those expenses. The cost that is accrued by tax-payers for the handling of City waste can be estimated with further analysis.

CHAPTER ONE

introduction

1.1 PURPOSE OF INVENTORY

The objective of this greenhouse gas emissions inventory is to identify the sources and quantify the volumes of greenhouse gas emissions resulting from governmental operations as well as activities and operations taking place throughout the community of Belvedere. This inventory serves two purposes:

- It creates an emissions baseline against which Belvedere can set emissions reductions targets and measure future progress.
- It allows an understanding of where the highest percentages of emissions are generated in Belvedere's internal operations as well as in the community, and, therefore, identifies the greatest opportunities for emissions reductions.

Belvedere became a member of ICLEI – Local Governments for Sustainability in December 2007. While Belvedere had begun to reduce some greenhouse gas emissions through its government operation actions in previous years, this inventory represents the first step in a systems approach to reducing Belvedere's emissions. This system, developed by ICLEI, is called the Five Milestone Process, and is utilized by local governments across the U.S. to structure their climate protection efforts. The process is as follows:

- Milestone 1: Conduct a baseline GHG emissions **inventory**
- Milestone 2: Adopt an emissions **reduction target**
- Milestone 3: Develop a local **climate action plan** to achieve the reduction target
- Milestone 4: **Implement** the climate action plan
- Milestone 5: **Re-inventory** emissions to monitor progress and report results

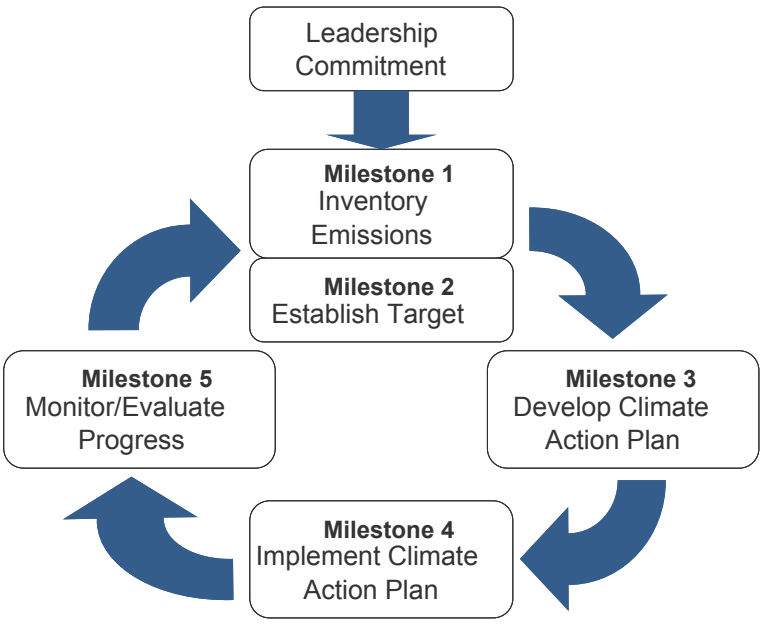


FIGURE 1.1: THE ICLEI FIVE MILESTONE PROCESS

1.2 CLIMATE CHANGE BACKGROUND

A balance of naturally occurring gases dispersed in the atmosphere determines the Earth's climate by trapping solar radiation. This phenomenon is known as the greenhouse effect. Overwhelming evidence suggests that human activities are increasing the concentration of greenhouse gases in the atmosphere, causing a rise in global average surface temperature and consequent climate change. Modern human activity--most notably the burning of fossil fuels for transportation, electricity and heat generation--introduces large amounts of carbon dioxide and other greenhouse gases into the atmosphere.

Collectively, these gases intensify the natural greenhouse effect, causing global average surface temperatures to rise, which affects local and global climate patterns. These changes in climate are forecasted to manifest themselves in a number of ways that might impact Belvedere, such as rising sea levels and changes in the salinity and behavior of the San Francisco Bay, as well as other changes to local and regional weather patterns and species migration.

Beyond the local community, scientists also expect changing temperatures to result in more frequent and damaging storms accompanied by flooding and land slides, summer water shortages as a result of reduced snow pack, and disruption of ecosystems, habitats, and agricultural activities. In response to the threat of climate change, communities worldwide are voluntarily reducing greenhouse gas emissions. Many communities in the United States are taking responsibility for addressing climate change at the local level. Since many of the major sources of greenhouse gas emissions—fuel consumption in personal vehicles, energy consumption in buildings, organic waste decomposition in landfills—are directly or indirectly controlled through local policies, local governments have a primary role to play in reducing greenhouse gas emissions within their jurisdictional boundaries. Through the use of proactive measures around sustainable land use patterns, transportation demand management, energy efficiency, renewable energy, green building, and waste diversion, local governments can dramatically reduce emissions in their communities. In addition, as the effects of climate change become more common and severe, local government adaptation policies will be fundamental in preserving the welfare of local residents and businesses.

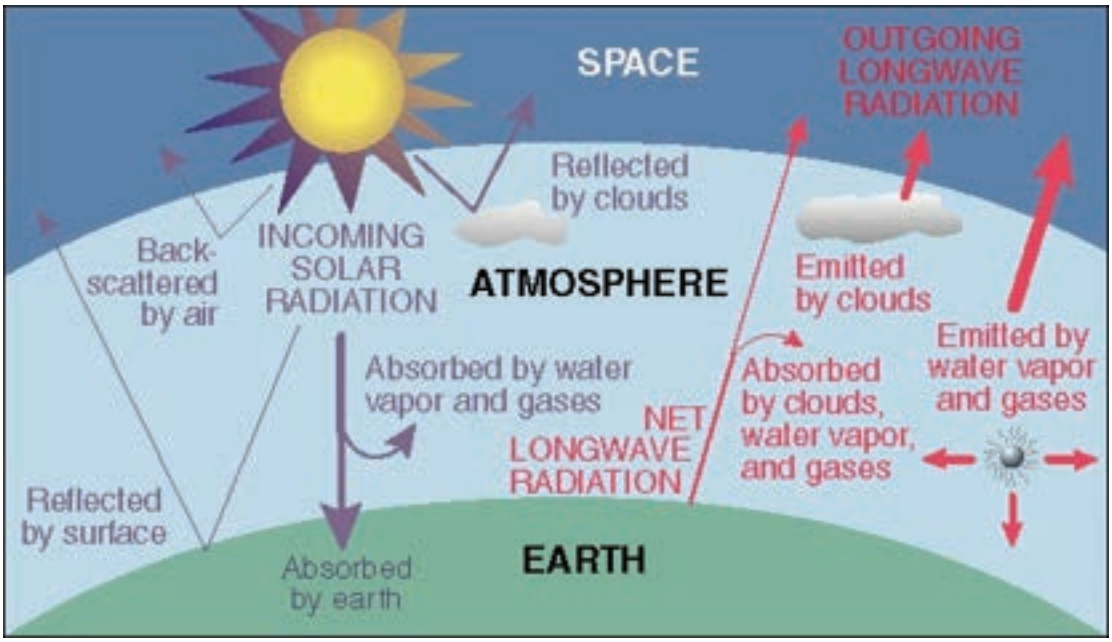


FIGURE 1.2: The Greenhouse Effect

1.3 CITY OF BELVEDERE PROFILE

Belvedere is a city of one square mile, located in Marin County in the San Francisco Bay Area. According to the Association of Bay Area Governments (ABAG), in 2005 the Belvedere population was 2,100, and there were approximately 960 households located in Belvedere. Included as an indicator of commercial activity, the number of jobs within Belvedere in 2005 was 1,130. Belvedere is located in climate zone 3 and, in 2005, experienced an estimated 3,949 Heating Days and 292 Cooling Degree Days.[3]

TABLE 1.1: Belvedere Profile Chart

Size	Population	Annual Budget	Employees	Climate Zone	Cooling Degree Days	Heating Degree Days
1 square mile	2,100	$7,440,140	26	Zone 3	292	3,649

In 2005, Belvedere provided the following core services:

- Parks & Recreation
- Police Services
- Public Works / Infrastructure
- Planning, Building & Code Enforcement

Police Services and Public Works have been identified as having an impact on greenhouse gas emission levels. These services and others, and the facilities and equipment that are instrumental in the delivery of these services, are the focus of this greenhouse gas emissions inventory. There are a number of opportunities for reducing emissions from government operations, many of which have added benefits of reducing government operating costs and improving workplace efficiency.

1.3.1 Sustainability & Climate Change

SUSTAINABILITY AND CLIMATE CHANGE MITIGATION ACTIVITIES IN THE CITY OF BELVEDERE

The City of Belvedere has been actively involved in various sustainability practices for many years. The following is a short summary of activities by group.

WATER REDUCTION

In 1990, the City adopted the Design Review Ordinance which includes a requirement for landscape plans that use drip irrigation systems, encourage drought-tolerant plantings and the minimization of turf areas. The City uses well water to irrigate City parks and low-flow toilets are

[3] Climate Zone information is supplied by the U.S. Department of Energy, http://resourcecenter.pnl.gov/cocoon/morf/ResourceCenter/dbimages/full/973.jpg , accessed 1/29/09. Heating and Cooling Degree Days data for the North Coast Drainage Division is supplied by NOAA Satellite and Information Service, National Climatic Data Center, U.S. Department of Commerce, http://www7.ncdc.noaa.gov/CDO/CDODivisionalSelect.jsp, accessed 1/29/09.

installed in all city facility bathrooms. Marin Municipal Water District provides the community and remainder of the City operations with water. As the transportation and pumping of water consumes a significant amount of energy, water conservation helps reduce energy use. In 2008, the City discontinued the purchase of bottled water for staff and for public meetings, a monthly reduction of approximately 130 plastic bottles and a savings of $50 per month.

EFFICIENT TRANSPORTATION

In 2008, the Police Department replaced two standard emission police vehicles with new hybrid vehicles. More recently, the City has purchased an all-electric vehicle for staff site visits and the Police Department has purchased a bicycle for officer patrols. The City has the lowest second unit permit fees in the County in order to encourage the development of second units and to decrease worker commute trips. When possible, the City allows flexible schedules for employees in order to reduce employee commute trips.

WATER REDUCTION AND RECYCLING

The City of Belvedere has been a member of the Marin Hazardous and Solid Waste JPA since 1990 to provide household hazardous waste collection, recycling and disposal information to citizens and businesses. The City is partnered with the Tiburon Fire Protection District to provide a local household battery recycling program. Mill Valley Refuse provides the City with recycling services for paper and other recyclable waste products. The City follows the County of Marin's Construction and Demolition Waste Recovery Ordinance which requires projects to recycle or reuse at least 50 percent of scrap material from the project. Since 2003, the City has purchased copy paper with a minimum of 30 percent recycled content.

ENERGY EFFICIENCY AND OTHER CLIMATE CHANGE MITIGATION ACTIVITIES

The City's Public Works Department continues its efforts to reduce energy use in our municipal facilities by having installed compact florescent lights, motion sensor lighting and thermostat controls at appropriate locations. Earlier this year, the City began working on a model Green Building ordinance in connection with the Building Energy Retrofit and Solar Transformation (BERST) effort. Belvedere also participates in the Marin Energy Authority (previously known as Community Choice Aggregation) with the goal of providing clean and renewable energy sources to our community.

In 2007, the City joined the Marin Climate and Energy Partnership (MCEP), a collaboration of all eleven Marin municipalities, the Transportation Authority of Marin and the Marin Municipal Water District. A discussion of MCEP climate change mitigation activities is described in the next section. Finally, the City uses Integrated Pest Management (IPM) practices to reduce or eliminate the use of pesticides in the City.

1.4 THE MARIN CLIMATE AND ENERGY PARTNERSHIP

The Marin Climate and Energy Partnership is a collaborative effort of the County of Marin, the 11 municipal governments of Marin, the Marin Municipal Water District (MMWD) and the Transportation Authority of Marin (TAM). Planning for the establishment of the Marin Climate and Energy Partnership was initiated in early 2007 under the auspices of Joint Venture Marin and ICLEI-Local Governments for Sustainability. In March of 2007, leaders from Joint Venture Marin, the Marin Municipal Water District,

and the County of Marin submitted a request for funds from the Marin Community Foundation, for the purpose of organizing cities and public agency partners. This work was being developed alongside ICLEI's multi-year engagement of Marin local governments on climate and energy matters, and the two efforts came together to form the Partnership.

The Partnership applied for and received a $75,000 grant from the Bay Area Quality Management District (BAAQMD) for the purpose of hiring a Climate Action Director. Since October 2008, the Climate Action Director has been working with MCEP members to identify near-term opportunities for reducing greenhouse gas emissions as well as options for comprehensive climate action planning efforts.

CHAPTER TWO

methodology

2.1 ANALYSIS PARAMETERS

The inventories in this report follow two standards, one for government operations emissions and one for community emissions. As local governments all over the world continue to join the climate protection movement, the need for common conventions and a standardized approach to quantifying greenhouse gas (GHG) emissions is more pressing than ever. The community emissions inventory follows the standard outlined in the draft International Local Government GHG Emissions Analysis Protocol (IEAP). ICLEI has been developing this guidance since the inception of its Cities for Climate Protection Campaign in 1993, and has recently formalized version 1 of the IEAP as a means to set a common framework for all local government worldwide. ICLEI is also working with the California Air Resources Board (CARB) and the California Climate Action Registry (CCAR) to leverage the IEAP in establishing a community GHG protocol specifically for California local governments. The pending community protocol will serve as a corollary to the recently adopted Local Government Operations Protocol (LGOP). The LGOP, which was adopted in 2008 by the California Air Resources Board (CARB), serves as the national standard for quantifying and reporting greenhouse emissions from local government operations.

2.1.1 Background

INTERNATIONAL LOCAL GOVERNMENT GHG EMISSIONS ANALYSIS PROTOCOL (IEAP)

ICLEI has developed the International Local Government GHG Protocol (IEAP) to provide an easily implemented set of guidelines to assist local governments in quantifying the greenhouse gas emissions from both their internal operations and from the whole communities within their geopolitical boundaries. By developing common conventions and a standardized approach, ICLEI seeks to make it easier for local governments to achieve tangible reductions in greenhouse gas emissions.

The IEAP states that "an emissions inventory should comprise two parallel analyses for a chosen analysis year, one for local government operations and one for emissions from all sectors in the community, determined by the geopolitical boundary of the Belvedere." This report details the findings from Belvedere's community inventory only.

LOCAL GOVERNMENT OPERATIONS PROTOCOL (LGOP)

In 2008, ICLEI, CARB, and the California Climate Action Registry (CCAR) released the LGOP to serve as a national appendix to the IEAP. The purpose of the LGOP is to provide the principles, approach, methodology, and procedures needed to develop a local government operations greenhouse gas emissions inventory. It leads participants through the process of accurately reporting emissions, including providing calculation methodologies and reporting guidance. The LGOP guidance is divided into three main parts: identifying emissions to be included in the inventory, quantifying emissions using best available estimation methods, and reporting emissions.

The overarching goal of the LGOP is to allow local governments to develop emissions inventories using standards that are consistent, comparable, transparent, and recognized nationally, ultimately enabling the measurement of emissions over time. The LGOP was created only to standardize how emissions inventories are conducted and reported; it represents a currently accepted standard for inventorying emissions and does not contain any legislative or program-

specific requirements. Mandates by the State of California or any other legislative body, while possibly using the LGOP as a standard, do not currently exist, and local governments are not currently required to inventory their emissions. Program-specific requirements, such as ICLEI's Milestones or CCAR's reporting protocol, are addressed in the LGOP but should not be confused with the LGOP itself.

Also, while the LGOP standardizes inventories from government operations, it does not seek to be a wholly accurate inventory of all emissions sources, as certain sources are currently excluded or otherwise impossible to accurately estimate. This and all emissions inventories therefore represent a best estimate of emissions, using best available data and calculation methodologies outlined in the LGOP; it does not provide a complete picture of all emissions resulting from Belvedere's operations, and emissions estimates are subject to change as better data and calculation methodologies become available in the future.

2.1.2 Baseline 2005

A primary aspect of the emissions inventory process is the requirement to select a "performance datum," with which to compare current emissions, or a base year. Local governments should examine the range of data they have over time and select a year that has the most accurate and complete data for all key emission sources. It is also preferable to establish a base year several years in the past to be able to account for the emissions benefits of recent actions. A local government's emissions inventory should comprise all greenhouse gas emissions occurring during a selected calendar year.

This inventory utilizes 2005 as the baseline year, as this year is increasingly becoming the standard for such inventories. The 1990 baseline year as originally identified as the model base year by the State of California is usually too difficult for most local governments to meet and would not produce the most accurate inventory.

After setting a base year and conducting an emissions inventory for that year, local governments should make it a practice to complete a comprehensive emissions inventory on a regular basis to compare to the baseline year. ICLEI recommends conducting and emissions inventory at least every five years.

2.1.3 Boundaries of GHG Inventory Analysis

GOVERNMENT: ORGANIZATIONAL BOUNDARIES

Under the LGOP, two control approaches are used for reporting emissions: operational control or financial control. A local government has operational control over a facility if it has full authority to introduce and implement its operating policies at the facility. A local government has financial control if the operation is fully consolidated in financial accounts. If a local government has joint control over an operation, the contractual agreement will have to be examined to see who has authority over operating policies and implementation, and thus the responsibility to report emissions under operational control.[4] Local governments must choose

[4] Please see Local Government Operations Protocol for more detail on defining government organizational boundary: http://www.icleiusa.org/programs/climate/ghg-protocol

which approach is the most applicable and apply this approach consistently throughout the inventory.

While both control approaches are acceptable, there may be some instances in which the choice may determine whether a source falls inside or outside of a local government's boundary. The LGOP strongly encourages local governments to utilize operational control because it is believed to most accurately represent emissions' sources that local governments can most directly influence and is consistent with other environmental and air quality reporting program requirements. In preparing this inventory, Belvedere uses operational control.

COMMUNITY: GEOPOLITICAL BOUNDARY

Setting an organizational boundary for greenhouse gas emissions accounting and reporting is an important step in the inventory process. The community inventory assesses emissions resulting from activities taking place within the geopolitical boundary of the jurisdiction. The IEAP defines geopolitical boundary as that "consisting of the physical area or region over which the local government has jurisdictional authority." Activities that occur within the community boundary can be controlled or influenced by jurisdictional policies, educational programs and establishing a precedent. Although some local governments may have only limited influence over the level of emissions from some activities, it is important that every effort be made to compile a complete analysis of all activities that result in the emission of greenhouse gases.

Within the geopolitical boundaries of a jurisdiction, emissions are organized according to where they fall relative to those boundaries. There are two primary metrics of internal categorization: 1) scopes, and 2) sectors.

2.1.4 Greenhouse Gases and Types of Emissions

According to both the IEAP and the LGOP, local governments should assess emissions of all six internationally recognized greenhouse gases regulated under the Kyoto Protocol (see Table 2.1 below). Local governments are encouraged to quantify greenhouse gases beyond these six, however neither the IEAP, nor LGOP provides guidance on quantifying or reporting emissions from other gases. As quantifying emissions beyond the three primary GHGs (CO_2, CH_4, and N_2O) can be quite difficult, ICLEI has also created a means for local governments to produce a simplified inventory that is otherwise in accordance with the methodology of the IEAP and LGOP, and is focused on primary policy options associated with climate protection. This alternate approach is what is referred to as the Quick Action Report. It is the standard followed in this particular inventory.

TABLE 2.1: Greenhouse Gases

Gas	Chemical Formula	Activity	Global Warming Potential aka Carbon Dioxide Equivalent (CO_2e)
Carbon Dioxide	CO_2	Combustion	1
Methane	CH_4	Combustion, Anaerobic Decomposition of Organics (Landfills, Wastewater), Fuel Handling	21
Nitrous Oxide	N_2O	Combustion, Wastewater Treatment	310
Hydrofluorocarbons	Various	Leaked Refrigerants, Fire Suppressants	43-11,700
Perfluorocarbons	Various	Aluminum Production, Semiconductor Manufacturing, HVAC Equipment Manufacturing	6,500-9,000
Sulfur Hexafluoride	SF_6	Transmission and Distribution of Power	23,900

2.1.5 Units Used in Reporting Emissions

The IEAP and the LGOP require reporting of individual gas emissions, and this reporting is included in the appendices. In this narrative report, emissions from all gases released by an emissions source (e.g. stationary combustion of natural gas in facilities) are combined and reported in metric tons of carbon dioxide equivalent (CO_2e). This standard is based on the Global Warming Potential (GWP) of each gas, which is a measure of the amount of warming a greenhouse gas may cause, measured against the amount of warming caused by carbon dioxide. See Table 2.1 above for the GWPs of the gases discussed in this section.

2.1.6 Reporting Emissions: The Scopes Framework

For both governmental operations and community inventory reporting, emissions sources are categorized relative to the geopolitical boundary of the community or the operational boundaries of the government. Emission sources are categorized as direct or indirect emissions, and labeled Scope 1, Scope 2 or Scope 3. See Appendix A for details.

2.1.7 Emissions Sectors

ICLEI recommends that local governments examine their emissions in the context of the sector that is responsible for those emissions. Many local governments will find a sector-based analysis more directly relevant to policy making and project management, as it assists in formulating sector-specific reduction measures and climate action plan components. Definitions of Community Sectors are listed in Appendix B.

In most cases, analysis and the facilitation of decision making will be enhanced by further subdividing these sectors in a manner consistent with the way that the local government is accustomed to considering their community and policy setting roles. It is not mandatory that a local government conduct an analysis of all sectors listed by the IPCC. Belvedere's community emissions inventory contains the following sectors:

COMMUNITY SECTORS

- Residential Sector
- Commercial / Industrial Sector
- Transportation
- Waste Generation

GOVERNMENT SECTORS

The LGOP breaks governmental operations emissions down into the following sectors:

- Buildings and Facilities
- Public lighting
- Water delivery
- Vehicle fleet
- Waste generation
- Employee commute

Additionally, this report includes the following two Scope 3 sectors in the government operations inventory:

- Government Generated Waste
- Employee Commute

2.1.8 Significance Thresholds for Reporting Emissions

Within any community or local government's operations there will be emission sources that fall within Scope 1 and Scope 2 that are minimal in magnitude and difficult to accurately measure. At the local government level, rarely used backup generators and fugitive emissions from a fleet maintenance facility are two examples. For these small, difficult to quantify emission sources, the LGOP specifies that up to five percent of total emissions can be reported using estimation methods not outlined in the LGOP.

2.2 QUANTIFYING EMISSIONS

2.2.1 Quantification Methods

Emissions can be quantified in two ways:

Measurement-based methodologies refer to the direct measurement of greenhouse gas emissions (from a monitoring system) emitted from a flue of a power plant, wastewater treatment plant, landfill, or industrial facility. This methodology is not generally available for most types of emissions and will only apply to a few local governments that have these systems.

The majority of the emissions recorded in this inventory have been calculated using **calculation-based methodologies** to calculate emissions using activity data and emission factors. To calculate emissions accordingly, the basic equation below is used:

Activity Data x Emission Factor = Emissions

ACTIVITY DATA

Activity data refer to the relevant measurement of energy use or other greenhouse gas-generating processes such as fuel consumption by fuel type, metered annual electricity consumption, and annual vehicle miles traveled. Please see appendices for a detailed listing of the activity data used in composing this inventory.

EMISSION FACTORS

Emission factors are used to convert energy usage or other activity data into associated emissions quantities. They are usually expressed in terms of emissions per unit of activity data (e.g. lbs CO_2/kWh). Please see Appendices B and C for a listing of emissions factors used in this report. Table 2.2 demonstrates an example of common emission calculations that use this formula.

TABLE 2.2: Basic Emissions Calculations

Activity Data	Emissions Factor	Emissions
Electricity Consumption (kWh)	CO_2 emitted/kWh	CO_2 emitted
Natural Gas Consumption (therms)	CO_2 emitted/therm	CO_2 emitted
Gasoline/Diesel Consumption (gallons)	CO_2 emitted /gallon	CO_2 emitted
Vehicle Miles Traveled	CH_4, N_2O emitted/mile	CH_4, N_20 emitted

2.2.2 CACP Software

To facilitate local government efforts to reduce greenhouse gas emissions, ICLEI developed the Clean Air and Climate Protection (CACP) software in partnership with the State and Territorial Air Pollution Program Administrators (STAPPA), the Association of Local Air Pollution Control Officials (ALAPCO)[5], and Torrie Smith and Associates. This software calculates emissions by combining emission factors with a range of activity data, such as energy consumption and waste generation.[6] This is the primary tool used to calculate emissions for this report.

The CACP software is used by more than 500 U.S. cities and towns to quantify their greenhouse gas emissions. However, it is important to note that precisely calculating emissions from energy use, fuel consumed, and waste disposed is difficult. As with many emissions analyses and models, CACP depends on numerous assumptions, and is limited by the quality of available data. With this in mind, it is useful to consider specific numbers generated by CACP as an approximation of reality, rather than an exact value.

[5] Now the National Association of Clean Air Agencies (NACAA)
[6] Please see Appendices A and B for a list of emission factors.

CHAPTER THREE

2005 government operations inventory

3.1 GOVERNMENT OPERATIONS INVENTORY SUMMARY

In 2005, Belvedere's government operations produced approximately 237 metric tons of CO_2e comprising 1.9 percent of total community emissions. This number includes Scope 1 emissions from the on-site combustion of fuels in buildings/facilities and vehicles, Scope 2 emissions from the purchase of electricity generated outside Belvedere's borders, and Scope 3 emissions from waste generated by local government operations and employee commute patterns.[7]

In order to provide for a useful policy discussion, this chapter provides a breakdown of all emissions by sector and source, rolling up and comparing emissions only as appropriate to avoid double counting, as explained in Section 2.1.6. For a summary by scope, see Appendix C.

3.1.1 Summary by Sector

By better understanding the relative scale of emissions from each of the sectors, Belvedere can more effectively focus emissions reductions strategies to achieve the greatest emissions reductions. For this reason, an analysis of emissions by sector is included here, based on the total of 237 metric tons of CO_2e.

The sectors included in this total are the following:

- Buildings and Facilities
- Public lighting
- Water delivery
- Vehicle fleet
- Waste generation
- Employee commute

As shown in Figure 3.1 and Table 3.1, the Employee Commute sector was the largest emitter (54.9 percent) in 2005. Emissions from the Vehicle Fleet sector produced the second highest quantity of emissions, resulting in 22.3 percent of total CO_2e. Belvedere's buildings and facilities produced 8.9 percent of total emissions with the remainder coming from the Lighting sector (5.6percent), the Water/Sewage sector (4.5 percent), and the Waste sector (3.8 percent).

[7] In this report, this number will be used to represent "total" emissions.

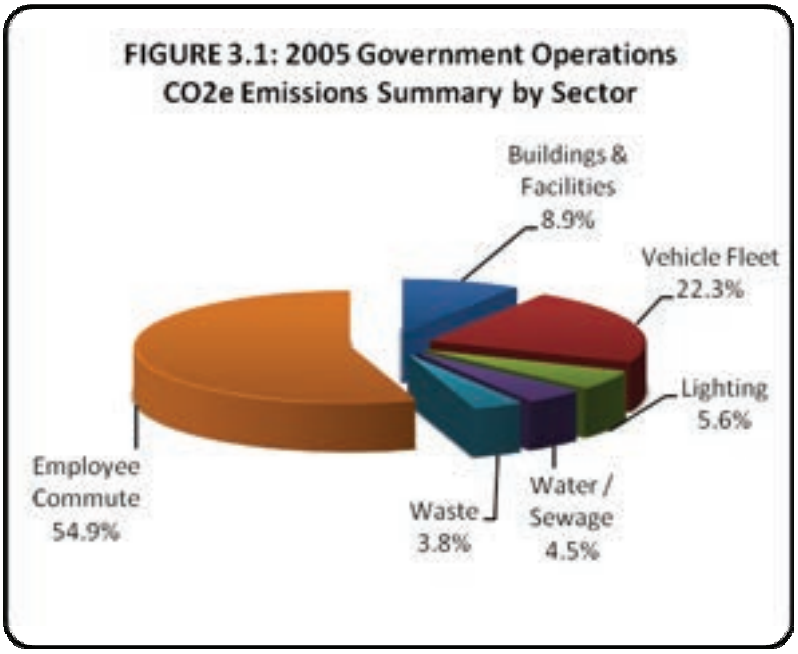
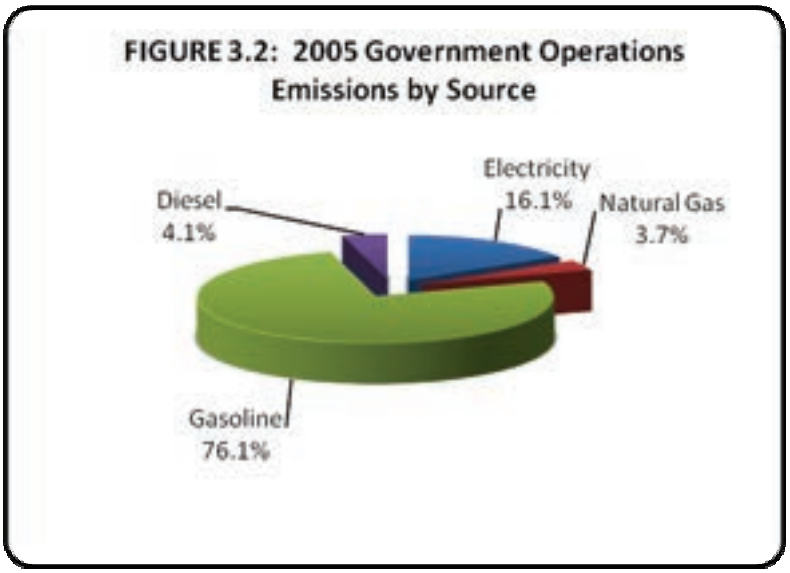


TABLE 3.1: 2005 Government Operations Emissions by Sector

Sector	Greenhouse Gas Emissions (metric tons CO_2e)	Greenhouse Gas Emissions (% CO_2e)
Buildings & Facilities	21	8.9%
Vehicle Fleet	53	22.3%
Lighting	13	5.6%
Water / Sewage	11	4.5%
Waste	9	3.8%
Employee Commute	130	54.9%
TOTAL	**237**	**100.0%**

3.1.2 Summary by Source

When considering how to reduce emissions, it is also helpful to look not only at which sectors are generating emissions, but also at the specific raw resources and materials (gasoline, diesel, electricity, natural gas, solid waste, etc.) whose use directly result in the release of greenhouse gases. Such analysis can help target resource management in a way that will successfully reduce greenhouse gas emissions. Below is a summary of Belvedere's government operations 2005 greenhouse gas emissions by fuel type or material, based upon the total government operations emissions of 237 metric tons.



As shown in Figure 3.2, the greatest percentage of government emissions (76.1 percent) came from gasoline. The next highest percentage of emissions came from electricity (16.1 percent) and diesel (4.1 percent).

TABLE 3.2: 2005 Government Operations Emissions by Source

Source	Greenhouse Gas Emissions (metric tons CO_2e)	Greenhouse Gas Emissions (% CO_2e)
Electricity	37	16.1%
Natural Gas	8	3.7%
Gasoline	173	76.1%
Diesel	9	4.1%
TOTAL	**228**	**100.0%**

3.1.3 Summary of Energy-Related Costs

In addition to tracking energy consumption and generating emissions estimates, this report looks at the basic energy costs of various government operations. During 2005, Belvedere's internal operations spent approximately $38,548 on energy (electricity, natural gas, gasoline and diesel) for its buildings, streetlights and vehicles. Sixty-two percent of these energy expenses ($23,952) are the result of electricity and natural gas purchases from PG&E. Belvedere spent approximately $14,588 on gasoline and diesel for the municipal fleet (38 percent of total costs).[8] Beyond reducing harmful greenhouse gases, any future reductions in energy use will have the potential to reduce these costs, enabling Belvedere to reallocate limited funds toward other municipal services or create a revolving energy loan fund to support future climate protection activities.

[8] Expense records for gasoline and diesel purchases were not obtained for this report. Instead, expenses were estimated using average annual fuel prices provided by the Metropolitan Transportation Commission (MTC) and the California Energy Commission.

TABLE 3.3: 2005 Government Operations Costs by Sector

Sector	Cost ($)
Buildings	$11,029
Vehicle Fleet	$14,588
Lighting	$6,125
Water / Sewage	$6,806
Waste	-
Employee Commute	-
TOTAL	**$38,548**

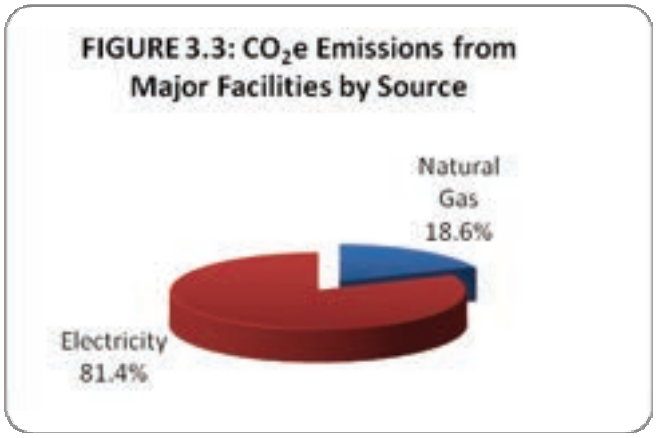
3.2 GOVERNMENT OPERATIONS INVENTORY DETAIL BY SECTOR

This section discusses the activities and types of emissions coming from government operations by taking a detailed look at each primary sector. Again, the sectors included in this analysis are:

- Facilities & Buildings
- Public lighting
- Water delivery
- Vehicle fleet
- Waste generation
- Employee commute

3.2.1 Buildings and Facilities

Buildings and facilities operated by local governments produce a significant amount of greenhouse gas emissions. In 2005, Belvedere operated three major facilities, including City hall, the corporation yard, and a community center. Electricity consumption and the on-site combustion of fuels such as natural gas were the most significant sources of 2005 greenhouse gas emissions from Belvedere facilities.

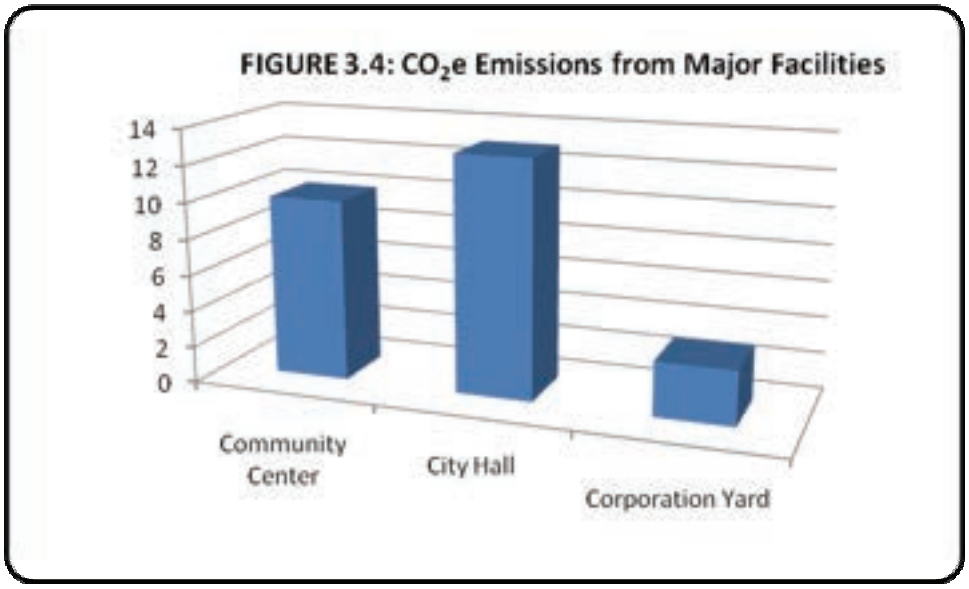


In 2005, the operation of Belvedere facilities produced approximately 338 metric tons of CO_2e from all of these sources. Belvedere spent approximately $11,029 in 2005 on the fuels and electricity that were the cause of these emissions. Figure 3.4 depicts 2005 emissions per facility, and Table 3.4 shows estimated costs associated with the activities that generated these emissions. As discussed in Section 3.1, emissions from facilities represent 8.9 percent of "total" emissions from Belvedere operations in 2005. Of total facility emissions, 81.4 percent came from the consumption of

electricity, 18.6 percent came from the combustion of natural gas, and .1% came from the combustion of gasoline in generators (see Table 3.4).[9]

TABLE 3.4: Energy Use and CO_2e Emissions from Facilities

Facility	Greenhouse Gas Emissions (metric tons CO_2e)	% CO_2e of All Facilities	Electricity Use (kWh)	Natural Gas Use (therms)	Gasoline (gallons)	Cost ($)	Energy Equivalent (million Btu)
Community Center	8	39.6%	1,753	1,440	0	$3,193	146
City Hall	11	53.5%	11,307	255	0	$6,806	171
Corporation Yard	1	6.8%	6,160	0	0	$1,022	21
Generator	0.03	0.1%	0	0	3	$8	0.4
TOTAL	**21**	**100%**	**19,220**	**1,695**	**3**	**$11,029**	**338**



3.2.2 Streetlights and Other Public Lighting

Electricity consumed in the operation of Belvedere's streetlights is a source of greenhouse gas emissions. In 2005, public lighting in Belvedere consumed a total of 56,907 kWh, producing approximately 194 metric tons CO_2e. This represents 5.6 percent of total emissions from Belvedere in 2005. There are a number of ways that Belvedere can improve the efficiency of public lighting, reducing the amount of greenhouse gas

[9] For a detailed description of the methodology and emission factors used in calculating the above numbers please see Appendix H.

emissions being generated by Belvedere operations and saving tax-payer dollars.

TABLE 3.5: Energy Use and CO_2e Emissions from Public Lighting

Source	Greenhouse Gas Emissions (metric tons CO_2e)	% CO_2e	Electricity Use (kWh)	Cost ($)	Energy Equivalent (million Btu)
Streetlights	13	100.0%	56,907	$6,125.00	194
TOTAL	**13**	**100.0%**	**56,907**	**$6,125.00**	**194**

3.2.3 Water Delivery Facilities

This section addresses any facilities used for the management and distribution of water and systems, and sewage/wastewater management. Electricity consumption and the on-site combustion of fuels such as natural gas are the most significant sources of greenhouse gas emissions from the operation of Belvedere water delivery facilities.

In 2005, Belvedere emitted approximately 11 metric tons of CO_2e from all of these sources, which represents 4.5 percent of total emissions from Belvedere in 2005. Belvedere spent $6,806 in 2005 on the natural gas and electricity that were the cause of these emissions. Table 3.6 shows emissions, consumption, and costs associated with water and wastewater delivery.

TABLE 3.6: Energy Use and CO_2e Emissions from Water Delivery Facilities

Source	Greenhouse Gas Emissions (metric tons CO_2e)	% CO_2e	Electricity Use (kWh)	Natural Gas Use (therms)	Cost ($)	Energy Equivalent (million Btu)
Water Pumps	5	50.0%	18,401	186	$3,781	82
Irrigation / Sprinkler Systems	0.1	0.8%	348	0	$139	1
Sewage / Wastewater Management	5	49.2%	21,074	54	$2,886	77
TOTAL	**11**	**100.0%**	**39,823**	**240**	**$6,806**	**160**

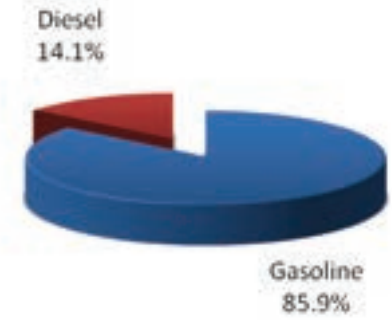
3.2.4 Vehicle Fleet

The majority of jurisdictions use vehicles as an integral part of their daily operations—from maintenance trucks used for parks and recreation to police cruisers. Combustion of fuels produces significant quantities of emissions within most local governments. Belvedere will be able to reduce its emissions by enacting policies such as purchasing alternative fuel vehicles, replacing oversized vehicles with more appropriately-sized ones, or removing vehicles from the fleet.

In 2005, Belvedere operated a fleet of approximately 14 vehicles used for primarily for police activities, street sweeping, landscaping and park maintenance. In 2005, the majority of vehicles in the fleet (64 percent) were used in the public works department.

In 2005, Belvedere's fleet operation consumed approximately 727 gallons of diesel and 5,039 gallons of gasoline, producing a total of 53 metric tons CO_2e, or 22.3 percent of total government emissions. On a gallon basis, Belvedere's fleet consumed 87.4 percent gasoline and 12.6 percent diesel. As shown in Figure 3.5, 85.9 percent of Belvedere's fleet emissions came from gasoline and 14.1 percent from diesel, diesel being slightly more carbon intensive than gasoline. See Figure 3.6 for a depiction of emissions per city department.

FIGURE 3.5: Vehicle Fleet CO_2e Emissions by Fuel Type



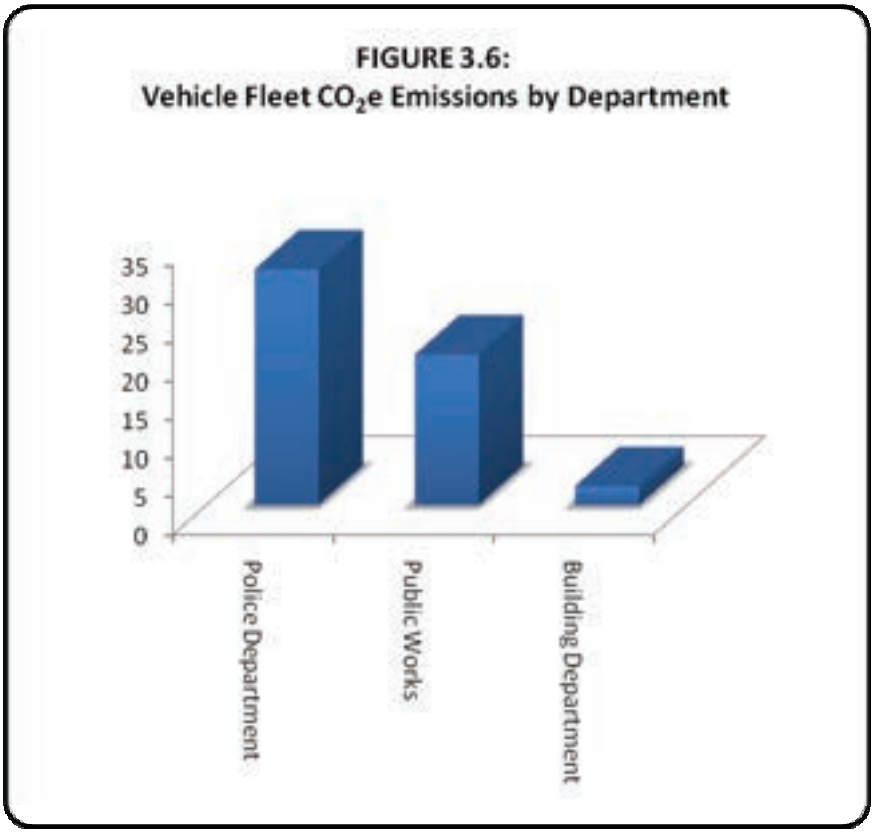


TABLE 3.7: Vehicle Fleet CO_2e Emissions by Department

Function	GHG Emissions (metric tons)	% CO_2e of Fleet Emissions	Gasoline Consumption (gal)	Diesel Consumption (gal)	Cost ($)	Energy Equivalent (million Btu)
Police Department	31	58.2%	3,445	0	$8,681	433
Public Works	20	37.1%	1,322	727	$5,222	255
Building Department	2	4.7%	272	0	$685	34
TOTAL	**53**	**100.0%**	**5,039**	**727**	**$14,588**	**722**

3.2.5 Solid Waste Generation

Despite recent success with improving diversion rates throughout California, our communities and government operations have not yet reached "zero waste." Among the solid waste routinely generated by government buildings and operations, organic materials (including paper, food scraps, plant debris, textiles, construction waste, etc.) within the landfilled waste stream

generate methane (CH_4) as they decay in the anaerobic environment of a landfill. An estimated 75 percent of this methane is routinely captured via landfill gas collection systems;[10] however, a portion escapes into the atmosphere, contributing to the greenhouse effect. As such, quantifying the amount of waste generated by government operations and calculating the resulting greenhouse gas emissions is an important component of a comprehensive emission inventory.

It is estimated that the waste disposed by Belvedere's government facilities in 2005 will cumulatively produce .4 metric ton of methane gas, or 9 metric tons $C0_2e$. Please see Table 3.8 for a breakdown of emissions per facility.

TABLE 3.8: Solid Waste CO_2e Emissions by Facility

Source	Greenhouse Gas Emissions (metric tons CO_2e)	% CO_2e of Waste Generation	Landfilled Waste (Tons)
Community Center	2	20.8%	7
Parks	1	12.4%	4
Corporation Yard	5	52.5%	19
City Hall	1	14.3%	5
TOTAL	**9**	**100.0%**	**36**

Fugitive methane emissions resulting from the anaerobic decomposition of municipal solid waste are a unique class of indirect emissions and are classified as Scope 3 under the LGOP. These emissions are considered indirect because they do not result at the point of waste generation (as with fuel combustion), but in a landfill located outside of Belvedere's jurisdictional boundaries all together. These emissions are further differentiated from Scope 2 indirect emissions (such as electricity), because they are not generated in the base 2005 (as with electricity generation) but over a lengthy decomposition period of about 100 years. Belvedere is in a position to reduce emissions from government generated waste by decreasing material consumption and increasing recycling and composting in government facilities.

[10] Most commonly, captured methane gas is flared into the atmosphere, a process which converts the methane gas to levels of CO_2 commensurate with aerobic decomposition, effectively negating the anthropogenic impact on atmospheric greenhouse gas concentration. Increasingly, landfill methane is being used to power gas-fired turbines as a carbon-neutral means of generating electricity.

3.2.6 Employee Commute

By the LGOP standard, tailpipe emissions from passenger vehicles operated by municipal employees traveling to and from work are considered indirect emissions and are reported under Scope 3 (CO_2, N_20, and CH_4). The LGOP encourages reporting these emissions as the scale of emissions from employees commuting is often relatively large when compared to the rest of government operations and because local governments do have the ability to influence their employees' commute decisions through alternative commute policies.

Local governments can see significant emissions reductions by encouraging and creating incentives for alternatives to driving alone to work. Many local governments have developed effective programs for reducing emissions from the commute patterns of their employees, and therefore, employee commute emissions were included in this report as an area where Belvedere can make significant progress towards greenhouse gas emissions reductions.

In 2005, employees commuting in vehicles to and from their jobs at the City of Belvedere emitted approximately 130 metric tons CO_2e, or 54.9 percent of total government emissions.

CHAPTER FOUR

2005 community inventory

4.1 COMMUNITY INVENTORY SUMMARY

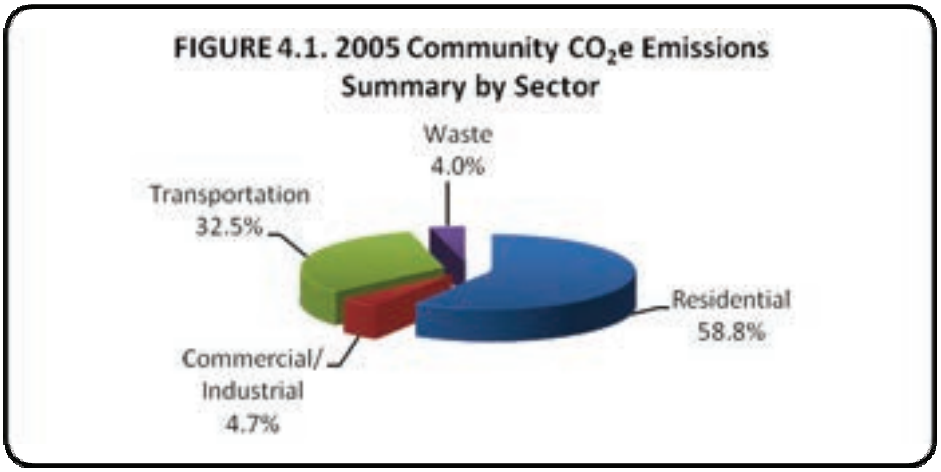
In 2005, activities taking place within Belvedere's geopolitical boundary resulted in approximately 12,654 metric tons of CO_2e. This number includes all Scope 1 emissions from the on-site combustion of fuels in the Residential and Commercial/Industrial sectors, and from the combustion of gasoline and diesel in vehicles traveling on local roads within Belvedere. This number also includes all Scope 2 emissions associated with community electricity consumption, and Scope 3 emissions from waste generated by the Belvedere community.[11]

4.1.1 Summary by Sector

Belvedere can more effectively focus emissions reductions strategies to achieve the greatest emission reductions by better understanding the relative scale of emissions from each primary sector. For this reason, an analysis of emissions by sector is included in this report, based on the total of 12,654 metric tons of CO_2e. The four sectors included in this inventory are the following:

- Residential
- Commercial/Industrial
- Transportation
- Waste Generation

As shown in Figure 4.1, the Residential Sector was the largest emitter (58.8 percent) in 2005. Emissions from the Transportation Sector produced the second highest quantity, resulting in 32.5 percent of total emissions, or 4,115 metric tons of CO_2e. The remainder of emissions came from the Commercial Sector (4.7 percent) and the Waste Sector (4 percent).



[11] For a detailed description of scopes, please see Appendix A.

TABLE 4.1: 2005 Community Emissions Summary by Sector

Sector	Greenhouse Gas Emissions (metric tons CO_2e)	Greenhouse Gas Emissions (% CO_2e)	Energy Equivalent (million Btu)
Residential	7,444	58.8%	130,017
Commercial Industrial	594	4.7%	9,700
Transportation	4,115	32.5%	56,268
Waste	501	4.0%	-
TOTAL	**12,654**	**100.0%**	**195,985**

4.1.2 Summary by Source

When considering how to reduce emissions, it is also helpful to look not only at which sectors are generating emissions, but also at the specific raw resources and materials (gasoline, diesel, electricity, natural gas, solid waste, etc.) whose use and generation directly result in the release of greenhouse gases. Such analysis can help target resource management in a way that will successfully reduce greenhouse gas emissions. Figure 4.2 and Table 4.2 summarize Belvedere's 2005 greenhouse gas emissions by fuel type or material, based upon the total community emissions of 12,654 metric tons.

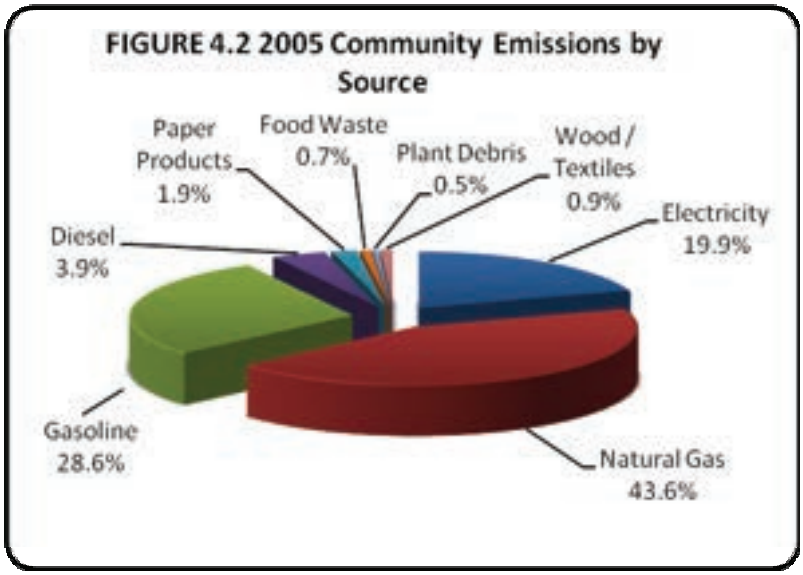


TABLE 4.2: 2005 Community Emissions by Source

Source	Greenhouse Gas Emissions (metric tons CO_2e)	Greenhouse Gas Emissions (% CO_2e)
Electricity	2,521	19.9%
Natural Gas	5,517	43.6%
Gasoline	3,623	28.6%
Diesel	491	3.9%
Paper Products	236	1.9%
Food Waste	93	0.7%
Plant Debris	58	0.5%
Wood / Textiles	114	0.9%
TOTAL	**12,654**	**100.0%**

4.1.3 Per Capita Emissions

Per capita emissions can be a useful metric for measuring progress in reducing greenhouse gases and for comparing one community's emissions with neighboring cities and against regional and national averages. That said, due to differences in emission inventory methods, it can be difficult to produce directly comparable per capita emissions numbers and one must be cognizant of this margin of error when comparing figures.

As detailed in Table 4.3, dividing the total community-wide GHG emissions by population yields a result of 6 metric tons of CO_2e per capita. It is important to understand that this number is not the same as the carbon footprint of the average individual living in Belvedere which would include lifecycle emissions, emissions resulting from air travel, etc.

TABLE 4.3: 2005 Per Capita Emissions

Estimated 2005 Population*	2,100
Community GHG Emissions (metric tons CO_2e)	12,654
Per Capita GHG Emissions (metric tons (CO_2e)	6

4.2 COMMUNITY INVENTORY DETAIL BY SECTOR

This section explores community activities and emissions by taking a detailed look at each primary sector. The sectors included in the community emissions analysis are:

- Residential
- Commercial/Industrial
- Transportation
- Waste Generation

4.2.1 Residential Sector

Energy consumption associated with Belvedere homes produced 7,444 metric tons of greenhouse gas emissions in 2005 (58.5 percent of total community emissions.) All Residential Sector emissions are the result of electricity consumption and the on-site combustion of natural gas. It is important to note that emissions from lawn equipment, wood-fired stoves, transportation and waste generation are **not** included in these totals. As shown in Table 4.4 below, Belvedere residents generated

approximately 8 metric tons of CO_2e per household.[12] Per household emissions can be a useful metric for measuring progress in reducing greenhouse gases and for comparing one's emissions with neighboring cities and against regional and national averages.

TABLE 4.4: 2005 Residential Emissions per Household

Number of Occupied Housing Units	960
Total Residential GHG Emissions (metric tons CO_2e)	7,444
Residential GHG Emissions per Household (metric tons CO_2e)	8

In 2005, Belvedere's entire Residential Sector consumed 9,526,452 kWh of electricity and 975,041 therms of natural gas. As shown in Figure 4.3, 70.1 percent of total Residential emissions were the result of natural gas use, and 29.9 percent were the result of electricity consumption. Natural gas is typically used in residences as a fuel for home heating, water heating and cooking, and electricity is generally used for lighting, heating, and to power appliances. There are a number of ways that Belvedere can help reduce emissions from the Residential Sector, such as implementing measures to improve energy efficiency, increase the use of renewable energy, and bolster energy conservation in Belvedere homes.

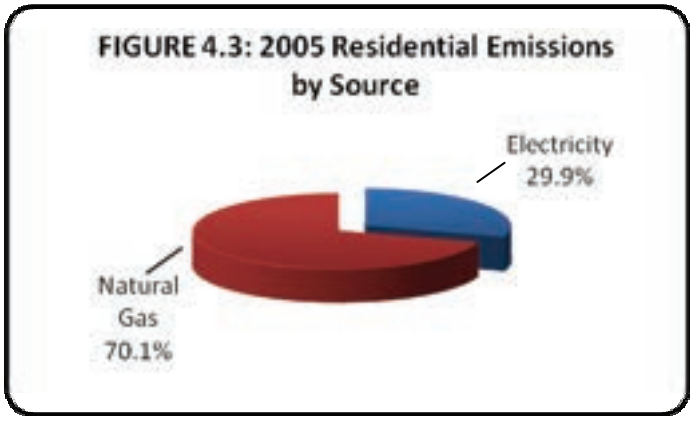


TABLE 4.5: Residential Emission Sources 2005

Source	Greenhouse Gas Emissions (metric tons CO_2e)	Greenhouse Gas Emissions (% CO_2e)	Energy Consumption	Unit	Energy Equivalent (million Btu)
Electricity	2,229	29.9%	9,526,452	kWh	32,513
Natural Gas	5,215	70.1%	975,041	therms	97,504
TOTAL	**7,444**	**100.0%**			**130,017**

[12] Number of Belvedere households in 2005 is based on estimates conducted by the Association of Bay Area Governments (ABAG).

4.2.2 Commercial / Industrial Sector

The Commercial/Industrial Sector includes emissions business operations as well as public agencies. For example, the majority of buildings and facilities included in the government operations inventory are also included as a subset of the Commercial/Industrial Sector, as classified by PG&E.[13] In 2005, buildings and facilities within the Commercial/Industrial Sector produced 594 metric tons of greenhouse gas emissions (4.7 percent of total community emissions). All Commercial/Industrial Sector emissions included in this inventory are the result of electricity consumption and the on-site combustion of natural gas. It is important to note that emissions from off-road equipment, transportation, waste generation, stationary combustion other than natural gas, and other industrial processes are **not** included in these totals.

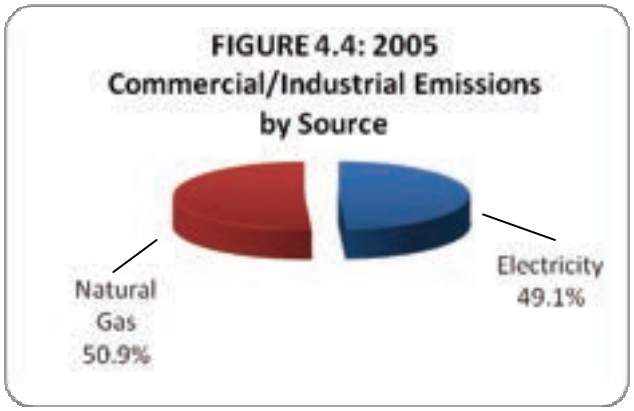
Table 4.6 lists Commercial / Industrial emissions based on the estimated number of jobs in Belvedere in 2005.[14] Belvedere businesses generated 1 metric ton of GHG emissions per job in 2005.

TABLE 4.6: 2005 Commercial / Industrial Emissions per Job

Number of Jobs	1,130
Total Commercial / Industrial GHG Emissions (metric tons CO_2e)	594
Commercial / Industrial GHG Emissions per Job (metric tons CO_2e)	1

As shown in Figure 4.4, 50.9 percent of total Commercial/Industrial emissions were the result of natural gas use, and 49.1 percent were the result of electricity consumption. Natural gas is typically used in the Commercial/Industrial Sector to heat buildings, fire boilers, and generate electricity; and electricity is generally used for lighting, heating, and to power appliances and equipment. There are a number of ways that Belvedere can help reduce emissions from the Commercial/Industrial Sector, such as providing incentives for businesses to improve energy efficiency and the use of renewable energy, and by instating policies that demand certain levels of energy performance within the Commercial/Industrial Sector.

[13] There are a few cases where government facilities will be classified as residential.
[14] Number of Belvedere jobs in 2005 based on estimates conducted by ABAG.



4.2.3 Transportation Sector

Between 2002 and 2004, emissions from the Transportation Sector produced an average of nearly 40% percent of California statewide emissions.[15] Here in Marin County, the Transportation Sector accounted for an estimated 62% of countywide emissions. Unlike the majority of Marin cities and towns, travel by motorized vehicle within Belvedere's geographical boundary does not constitute the greatest percentage of community wide greenhouse gas emissions. In Belvedere, transportation emissions accounted for 32.5 percent of community emissions, or 4,115 metric tons CO_2e.

All Transportation Sector emissions came from travel on local city roads. Of the total emissions in the Transportation Sector, an estimated 88.1 percent were due to gasoline consumption with the remaining 11.9 percent coming from diesel use (see Table 4.7). Transportation Sector emissions can be reduced by making it easier for residents to use alternative modes of transportation, including walking, bicycling, and riding public transportation. The State of California is also aiming to address transportation emissions by increasing the fuel efficiency standards of vehicles, and by increasing the amount of renewable fuels (e.g. biodiesel and ethanol) within mainstream fuel sources.

Emissions that resulted from the air travel of Belvedere residents were not included in the Transportation Sector analysis. With more time and the availability of suitable proxy data the greenhouse gas emissions from air travel could be estimated. Please see Appendix F for more detail on methods and emissions factors used in calculating emissions from the Transportation Sector.

[15] AB 32 Scoping Plan

TABLE 4.7: Transportation Fuel Emissions Sources 2005

Source	Greenhouse Gas Emissions (metric tons CO_2e)	Greenhouse Gas Emissions (% CO_2e)	Energy Equivalent (million Btu)
Gasoline	3,623	88.1%	50,313
Diesel	491	11.9%	5,955
TOTAL	**4,115**	**100.0%**	**56,268**

4.2.4 Community Generated Solid Waste

The Waste Sector constituted 4 percent of total emissions for the Belvedere community in 2005. Emissions from the Waste Sector are an estimate of methane generation from the decomposition of municipal solid waste (MSW) and alternative daily cover (ADC) sent to landfill in the base year (2005). These emissions are considered Scope 3 because they are not generated in the base year, but will result from the decomposition of 2005 waste over the full 100+ year cycle of its decomposition. About 75 percent[16] of landfill methane emissions are captured through landfill gas collection systems, but the remaining 25 percent escape into the atmosphere as a significant contributor to global warming. Please see Table 4.9 below for a summary of emissions per waste type.[17]

TABLE 4.8: Commercial / Industrial Emission Sources 2005

Source	Greenhouse Gas Emissions (metric tons CO_2e)	Greenhouse Gas Emissions (% CO_2e)	Energy Consumption	Unit	Energy Equivalent (million Btu)
Electricity	292	49.1%	1,185,843	kWh	4,047
Natural Gas	302	50.9%	56,526	therms	5,653
TOTAL	**594**	**100.0%**			**9,700**

[16] US EPA AP 42.

[17] Waste characterization figures were provided by the 2004 *California Waste Characterization Study*, http://www.ciwmb.ca.gov/Publications/default.asp?pubid=1097

TABLE 4.9: Waste Emissions Categories 2005

Category	Greenhouse Gas Emissions (metric tons CO_2e)	Greenhouse Gas Emissions (% CO_2e)	Energy Equivalent (million Btu)
MSW	423	84.5%	-
ADC	78	15.5%	-
TOTAL	**501**	**100.0%**	-

4.3 COMMUNITY EMISSIONS FORECAST

To illustrate the potential emissions growth based on projected trends in energy use, driving habits, job growth, and population growth from the baseline 2005 going forward, this report includes an emissions forecast for the year 2020. Under a business-as-usual scenario, Belvedere's emissions will grow by approximately 11.2 percent by the year 2020, from 12,654 to 14,074 metric tons CO_2e. Figure 4.5 and Table 4.10 show the results of the forecast. A variety of different reports and projections were used to create the emissions forecast, as profiled below.

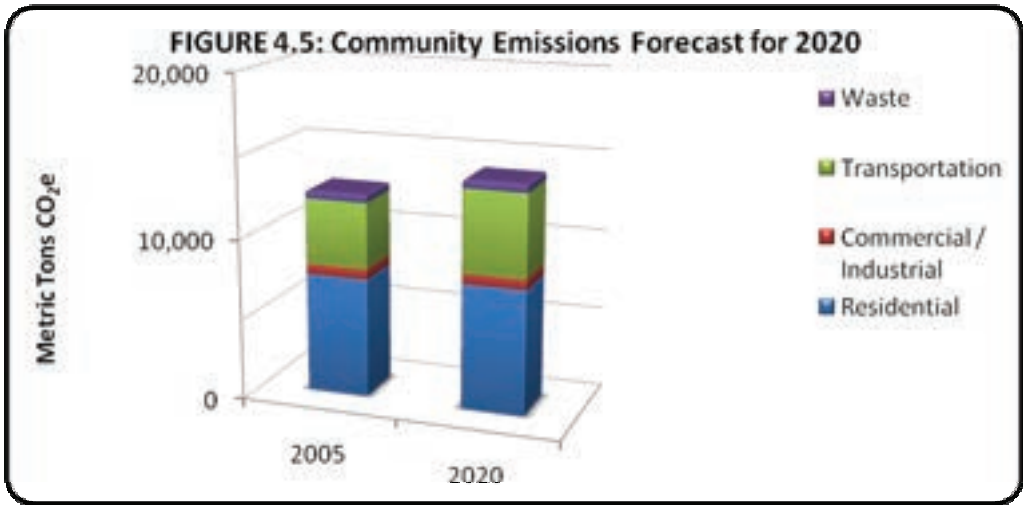


TABLE 4.10: 2005 Community Emissions Growth Forecast by Sector

Sector	2005 (metric tons $CO_{2e)}$	2020 (metric tons CO_2e)	Annual Growth Rate	Percent Change from 2005 to 2020
Residential	7,444	7,799	0.31%	4.8%
Commercial/Industrial	594	599	0.06%	0.9%
Transportation	4,115	5,151	1.51%	25.2%
Waste	501	525	0.31%	4.8%

TOTAL	**12,654**	**14,074**	**--**	**11.2%**

4.3.1 Residential

For the Residential Sector, a population projection for Belvedere was conducted by the Association of Bay Area Governments (ABAG), was used to estimate average annual compound growth in energy demand (.31 percent). ABAG estimates that the Belvedere population was 2,100 in 2005, and will be 2,200 in 2020.

4.3.2 Commercial/Industrial

Analysis contained within *California Energy Demand 2008-2018: Staff Revised Forecast*[18], a report by the California Energy Commission (CEC), shows that commercial floor space and the number of jobs have closely tracked the growth in energy use in the Commercial Sector. Using job growth projections for Belvedere also provided by ABAG, it was calculated that the average annual growth in energy use in the Commercial/Industrial Sector between 2005 and 2020 will be .06 percent.[19]

4.3.3 Transportation

For the Transportation Sector, projected growth in energy demand was obtained from the CEC 2008 energy demand forecast referenced above. The recently passed federal Corporate Average Fuel Economy standards and the state of California's pending tailpipe emission standards could significantly reduce the demand for transportation fuel in Belvedere. An analysis of potential fuel savings from these measures at a scale that would be useful for the purpose of this report has not been conducted, nor would such an analysis produce a true business-as-usual estimation. Regardless of future changes in the composition of vehicles on the road as a result of state or federal rulemaking, emissions from the Transportation Sector will continue to be largely determined by growth in vehicle-miles-traveled (VMT). In their report, *Forecast of the Transportation Energy Demand, 2003-2023*[20], the CEC projects that on-road VMT will increase at an annual rate of 1.51 percent per year through 2023. This is the number that was used to estimate emission growth in the Transportation Sector for the Belvedere forecast.

4.3.4 Waste Generation

As with the Residential Sector, population is the primary determinate for growth in emission pertaining to waste generation. Therefore, the average annual population growth rate from 2005 to 2020 (.31 percent, as calculated from above population projections) was used to estimate future emissions from waste disposal.

[18] http://www.energy.ca.gov/2007publications/CEC-200-2007-015/CEC-200-2007-015-SF2.PDF
[19] See Appendix B for more detail.
[20] http://www.energy.ca.gov/reports/2003-10-01_100-03-016.PDF

CHAPTER FIVE

conclusion

conclusion

In passing Resolution 2007-26 to join ICLEI – Local Governments for Sustainability, the City of Belvedere has made a formal commitment to reduce its greenhouse gas emissions. Specifically, the City has committed to ICLEI's five milestones for climate change, which are:

- Conduct a greenhouse gas emissions inventory to determine the source and quantity of greenhouse gas emission;
- Establish a greenhouse gas emissions reduction target;
- Develop a Climate Action Plan to meet the local greenhouse gas reduction target;
- Implement the Action Plan; and
- Monitor and report progress

This emissions inventory report completes an important first step in Belvedere's climate protection and energy management efforts. By identifying the most significant sources of emissions, and by estimating baseline emission levels, this report establishes a foundation for informed institutional action against which future progress can be demonstrated.

The data analysis found that the Belvedere community as a whole was responsible for emitting **12,654 metric tons of CO_2e in the base year 2005**, with the Residential Sector contributing the most (58.8%) to this total. The City of Belvedere's own municipal operations were responsible for **237 metric tons of CO_2e in the year 2005**, with the greatest percentage of emissions coming from the Employee Commute, the City Vehicle Fleet and City Buildings.

In addition to establishing the baseline for tracking progress over time, this report serves to identify the major sources of Belvedere emissions, and therefore the greatest opportunities for emission reductions. In this regard, the emissions inventory ought to inform the areas of focus within the Belvedere Climate Action Plan (CAP).

As Belvedere moves forward with considering emission reduction targets and works to create the Climate Action Plan, the City should identify and quantify the emission reduction benefits of projects that have already been implements since 2005, as well as the emissions reduction benefits of proposed future emissions reduction measures. The benefits of both existing and proposed strategies can be tallied against the baseline established in this report to determine the appropriate set of strategies that will deliver the City to its chosen emissions reduction goal.

Following the ICLEI methodology, it is recommended that the City of Belvedere institutionalize an inventory process. By creating data compilation and analysis systems in accordance with State protocols, Belvedere will be able to inventory greenhouse gas emissions every two to three years. The City will need to budget and plan for these inventories, but they are essential to keeping the City and community on track with the reduction targets and ensuring that the City of Belvedere builds and retains a competitive economic position while protecting the environment and its community.

appendices

APPENDIX A: THE SCOPES FRAMEWORK

Macro Sector (IPCC)		Scope 1 Emissions	Scope 2 Emissions	Scope 3 Emissions
Energy	Stationary Combustion	Utility-delivered fuel consumption Decentralized fuel consumption Utility-consumed fuel for electricity / heat generation	n/a	Upstream/downstream emissions (e.g., mining/transport of coal)
	Electricity / Heat Consumption	n/a	Utility-delivered electricity / heat /steam consumption	Upstream/downstream emissions
			Decentralized electricity / heat /steam consumption	(e.g., mining/transport of coal)
	Mobile Combustion	Tailpipe emissions from on-road vehicles Tailpipe emissions from rail, sea, airborne and non-road vehicles, operating within the community	Electricity consumption associated with vehicle movement within the community (e.g., light rail)	Tailpipe emissions from vehicles used by community residents Upstream/downstream emissions (e.g. mining/transport of oil) Tailpipe emissions from rail, sea, and airborne vehicles departing from or arriving into the community
	Other Energy	Fugitive emissions not already accounted for	n/a	Upstream/downstream emissions
Industrial Processes and Product Use		Decentralized process emissions	n/a	Upstream/downstream emissions
Agriculture, Forestry and Other Land Use		Livestock methane, managed soils	n/a	Upstream/downstream emissions from fertilizer/pesticide manufacture
		Net biogenic carbon flux	n/a	n/a
Waste	Solid Waste Disposal	Direct emissions from landfill, incineration and compost facilities located inside the community	n/a	Landfill, incineration and compost emissions occurring in present-2005 from waste produced to date inside the community Future emissions associated with waste disposed Upstream/downstream emissions (e.g. transport to the landfill)
	Wastewater Treatment and Discharge	Direct emissions from wastewater facilities located inside the community	n/a	Wastewater emissions occurring in present 2005 from wastewater produced to date inside the community Future emissions associated with wastewater treated Upstream/downstream emissions

For both government operations and community inventory reporting, emissions sources are also categorized according to where they fall relative to operational boundaries of the government, or the geopolitical boundary of the community. Emissions sources are categorized as direct or indirect emissions--Scope 1, Scope 2, or Scope 3-- in accordance with the World Resources Institute and the World Business Council for Sustainable Development's *Greenhouse Gas Protocol Corporate Standard.* The standard is to report emissions by scope as a primary reporting framework.[21]

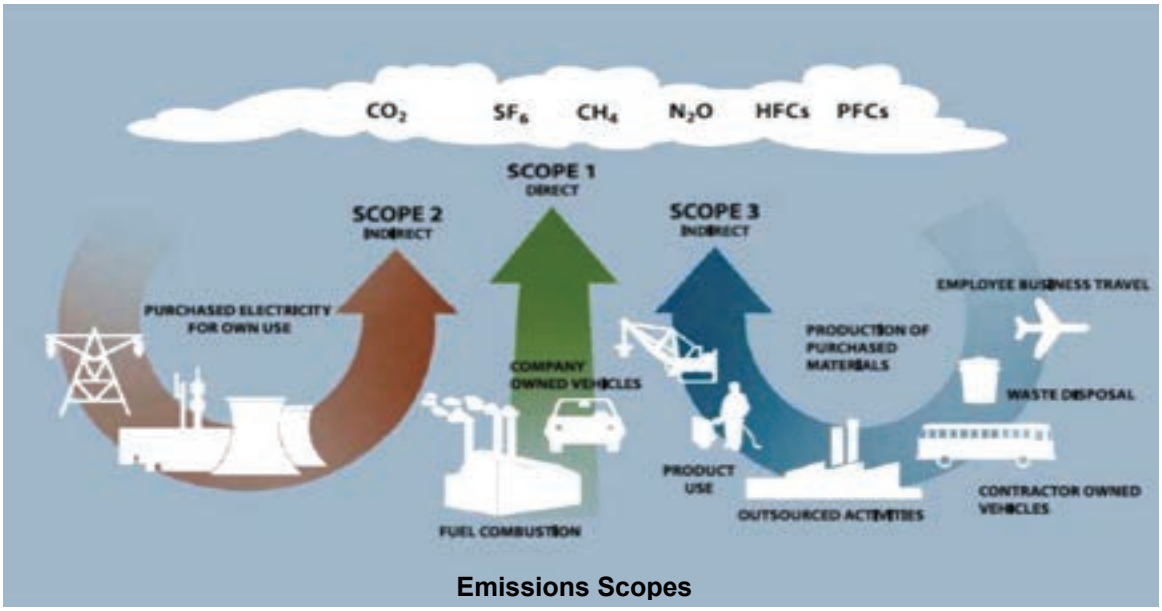
COMMUNITY SCOPE DEFINITIONS

Scope 1: All direct emissions from sources located within the geopolitical boundary of the local government.

Scope 2: Indirect emissions associated with the consumption of purchased or acquired electricity, steam, heating, and cooling. Scope 2 emissions occur as a result of activities that take place within the geopolitical boundary of the local government, but that occur at sources located outside of the government's jurisdiction.

Scope 3: All other indirect or embodied emissions not covered in Scope 2, that occur as a result of activity within the geopolitical boundary.

Scope 1 and Scope 2 sources are the most essential components of a community greenhouse gas analysis. This is because these sources are typically the most significant in scale, and are most directly impacted by local policy making. The IEAP also includes, in its *Global Reporting Standard,* the reporting of Scope 3 emissions associated with the decomposition of solid waste and sewage waste-water produced within the geopolitical boundaries of the local government



Emissions Scopes

Source: WRI/WBCSD GHG Protocol Corporate Accounting and Reporting Standard (Revised Edition),

GOVERNMENT SCOPE DEFINITIONS

Similar to the community framework, the government scopes are divided into three main categories:

[21] Another common reporting framework is emissions by sector.

Scope 1*:* Direct emissions from sources within a local government's organizational boundaries that the local government owns or controls.

Scope 2: Indirect emissions associated with the consumption of purchased or acquired electricity, steam, heating, and cooling. Scope 2 emissions occur as a result of activities that take place within the organizational boundaries of the reporting entity, but that occur at sources owned or controlled by another entity.

Scope 3: All other indirect emissions not covered in Scope 2, such as emissions resulting from the extraction of and production of purchased materials, contracted services, fuels, and waste disposal, among others.

As with the community inventory, Scope 1 and Scope 2 sources are the most essential components of a local greenhouse gas analysis. This is because these sources are usually significant in scale and are directly under the control of local governments. According to the LGOP all Scope 1 and Scope 2 categories must be included when conducting an emissions inventory.

Scope 3 emissions comprise all other sources of emissions. Scope 3 emissions can be more challenging to estimate. Local governments may only have indirect control over these emissions, or there may be unique circumstances surrounding the emissions. For example, solid waste generated from government operations is included as Scope 3 in the LGOP because of the unique circumstances in which emissions are generated—emissions from waste are generated over time as the waste decomposes and not specifically in the base year. The LGOP encourages local governments to conduct as complete an analysis as is practicable, but distinguishes Scope 3 emissions sources so that local governments can prioritize their efforts and appropriately categorize emissions sources according to where the emissions occur, the relative magnitude of the emissions, and which entity is responsible for the emissions. In this inventory, the Scope 3 emission sources include tailpipe emissions from employee commute and government-generated waste. The LGOP does not provide methods for estimating Scope 3 emissions, and ICLEI has estimated these emissions using methods derived from other accepted standards.

SCOPES AND DOUBLE COUNTING

One of the most important reasons for using the scopes framework for reporting greenhouse gas emissions at the local level is to prevent double counting for major categories such as electricity use and waste disposal. If, for example, all of the cities in a county decided to aggregate their emission inventories to create a county-level government operations inventory without disaggregating scopes, the emissions from the Electricity and Waste Sectors would be double counted if there were any power plants or active landfills located in the county. These inventories use rollup numbers (emissions added across scopes), but are very clear to identify the types of emissions included in the rollup numbers. ICLEI strongly encourages local governments to do the same whenever they report a rollup number as they can be very misleading and easily misquoted by policymakers or others when referring to the inventory.

APPENDIX B: COMMUNITY SECTORS DEFINITIONS

COMMUNITY SECTORS

The IEAP outlines the following sectors, in accordance with the Intergovernmental Panel on Climate Change (IPCC):

Stationary Combustion: Including utility delivered fuel consumption at stationary sites (Scope 1), utility delivered electricity and heat consumption at stationary sites (Scope 2), decentralized fuel consumption at stationary sites (e.g. propane, kerosene, stationary diesel from small vendors) (Scope 1), utility consumed fuel for electricity and heat generation (Scope 1), etc.

Mobile Combustion: Including tailpipe emissions from vehicles traveling on roads within the geopolitical boundary of the local government (Scope 1), tailpipe emissions from off-road vehicles operating within the geographical boundaries (Scope 1), rail traffic occurring within geographical boundaries (Scope 1), marine transportation occurring between two jurisdictions (Scope 3), etc.

Fugitive and Other Energy Emissions: Including leaked natural gas from distribution infrastructure located within geopolitical boundaries (Scope 1), leaked refrigerants from residential and commercial / industrial facilities (Scope 1), etc.

Industrial Processes and Product Use: Including non-energy related emissions generated in the production of cement (Scope 1), in the refining of fuels (Scope 1), in the processing of coal (Scope 1), etc.

Agriculture, Forestry and Other Land Use: Including emissions from the use of nitrogenous fertilizers (Scope 1), methane emissions from livestock farms (Scope 1), negative net biogenic carbon flux (Scope 3), etc.

Waste: Including fugitive methane emissions at landfills (Scope 1), fugitive methane and nitrous oxide emissions at waste water treatment facilities (Scope 1), estimated future emissions associated with base year waste disposal (Scope 3), etc.

APPENDIX C: GOVERNMENT OPERATIONS INVENTORY SUMMARY BY SCOPE

Summary by Scope

As shown in the table below, Scope 3 emissions constituted the largest amount of greenhouse gas emissions from Belvedere's operations in 2005, totaling 139 metric tons of CO_2e. Scope 1 emissions constituted the second largest amount (61 metric tons of CO_2e), and Scope 2 emissions totaled 37 metric tons of CO_2e.[22]

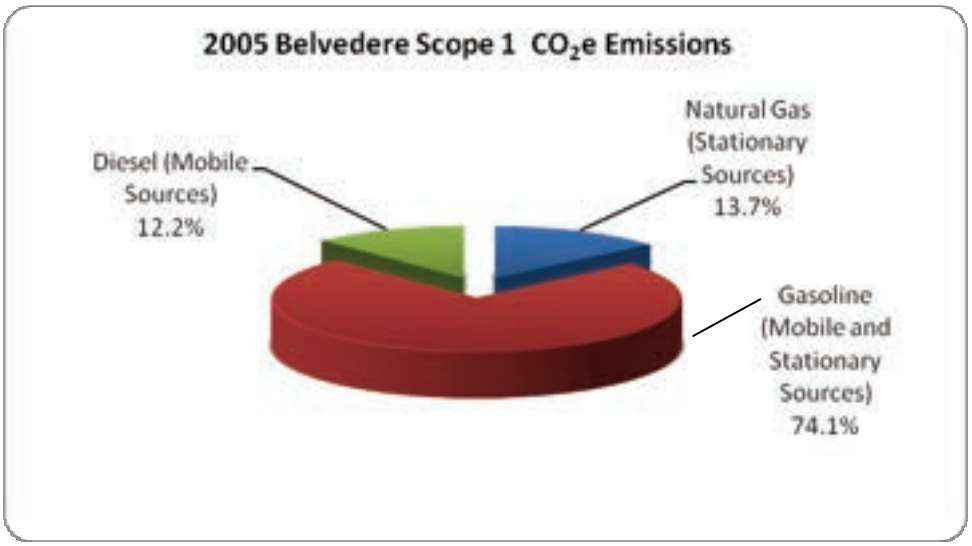
2005 Belvedere Government Emissions by Scope

Activity	CO_2e emitted
Scope 1	
Natural Gas (Stationary Sources)	8
Gasoline (Mobile and Stationary Sources)	45
Diesel (Mobile Sources)	7
Scope 1 Total	**61**
Scope 2	
Purchased Electricity	37
Scope 2 Total	**37**
Scope 3	
Employee Commute	130
Government Generated Solid Waste	9
Scope 3 Total	**139**

SCOPE 1 EMISSIONS

In 2005, Belvedere's government operations produced 61 metric tons CO_2e of Scope 1 greenhouse gas emissions. The largest percent (74.1 percent) of Scope 1 emissions resulted from the combustion of gasoline in city vehicles and equipment. The second largest source of Scope 1 emissions was from the stationary combustion of natural gas in Belvedere facilities, constituting 13.7 percent of Scope 1 emissions.

[22] For percentage breakdowns, see summaries by sector and source, or individual sources of emissions. The emissions here are not totaled as to avoid double counting.



SCOPE 2 EMISSIONS

In 2005, Belvedere's government operations generated 37 metric tons of CO_2e in the form of Scope 2 emissions from purchased electricity. All Scope 2 emissions in this inventory result from electricity consumption. Scope 2 government operations emissions are generated outside of Belvedere's operational boundaries, but are the result of Belvedere's government operations, and therefore are counted as an integral part of the inventory.

SCOPE 3 EMISSIONS

In 2005, Belvedere's government operations generated 139 metric tons of CO_2e in the form of Scope 3 emissions. Two types of Scope 3 emissions are included in this report: those from Belvedere's employee commute patterns, and those from waste generated at government-operated facilities. While reporting of Scope 3 emissions is optional, doing so enables Belvedere to develop innovative policy approaches for reducing greenhouse gases.

In 2005, 130 metric tons of CO_2e resulted from the consumption of fossil fuels by Belvedere employees in their personal vehicles while commuting to and from work. The anaerobic decay of solid organic waste (paper, plant debris, etc.) generated through Belvedere's operations in 2005 generated 9 metric tons of CO_2e.

APPENDIX D: COMMUNITY INVENTORY SUMMARY BY SCOPE

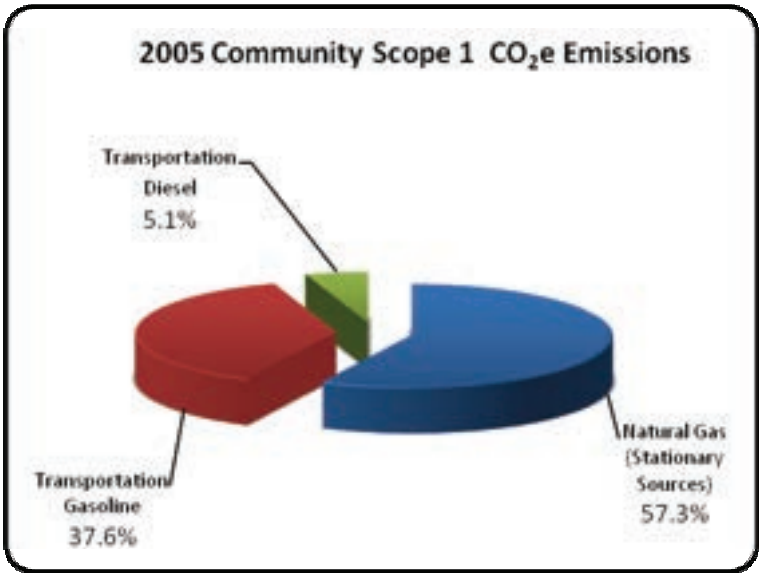
Scope 1 sources produced the largest amount of community greenhouse gas emissions in 2005, totaling 9,632 metric tons of CO_2e. Scope 2 emissions constituted the second largest amount (2,521 metric tons of CO_2e), and Scope 3 emissions totaled 501 metric tons of CO_2e.[23]

2005 Belvedere Community Emissions by Scope

Activity	CO_2e emitted
Scope 1	
Natural Gas (Stationary Sources)	5,517
Transportation Gasoline	3,623
Transportation Diesel	491
Scope 1 Total	**9,632**
Scope 2	
Purchased Electricity (All Stationary Sources)	2,521
Scope 2 Total	**2,521**
Scope 3	
Waste Generation	501
Scope 3 Total	**501**

SCOPE 1 EMISSIONS

In 2005, Belvedere's community produced 9,632 metric tons CO_2e of Scope 1 greenhouse gas emissions. The largest percent (57.3 percent) of Scope 1 emissions resulted from stationary combustion of fuels. The second largest source of Scope 1 emissions was mobile combustion, constituting 42.7 percent of Scope 1 emissions.



SCOPE 2 EMISSIONS

In 2005, Belvedere's community generated 2,521 metric tons of CO_2e in the form of Scope 2 emissions from purchased electricity. All Scope 2 emissions in this inventory result from electricity consumed within Belvedere but produced outside of Belvedere.

[23] These emissions have not been totaled as this may result in double counting and a percentage is not significantly relevant to forming emissions reduction policy. The summaries by sector and source have percentage breakdowns, as do individual sources of emissions.

SCOPE 3 EMISSIONS

In 2005, Belvedere's community generated 501 metric tons of CO_2e in the form of Scope 3 emissions. All Scope 3 sources included in this report are an estimate of methane emissions that will result from the anaerobic decomposition of solid waste, generated by the Belvedere community during 2005.

SCOPE 3 EMISSIONS SOURCES

The LGOP designates a number of important sources of greenhouse gas emissions as Scope 3 emissions, encouraging local governments to inventory these emissions in order to provide a more complete picture of emissions resulting from government operations. Of the many possible Scope 3 emissions that could be quantified, ICLEI encouraged local governments (including Belvedere) participating in the Marin Climate and Energy Partnership inventories to quantify emissions resulting from vehicles driven by employees while commuting, and solid waste generated during government operations.

Since the LGOP describes Scope 3 emissions as optional, it does not provide guidance on recommended methods for quantifying these types of emissions. ICLEI therefore devised data collection and calculation methods based on previous experience and LGOP-recommended methods, for similar sectors.

APPENDIX E: COMMUNITY INVENTORY METHODOLOGY SUMMARY

Residential, Commercial, Industrial Sector Notes

Data Inputs / Outputs Summary:

Sector	Fuel	Quantity	Units	Energy Output (MMBtu)	CO_2 Output (metric tons)	N_2O Output (metric tons)	CH_4 Output (metric tons)	Combined Output (metric tons CO_2e)
Residential	Electricity	9,526,452	(kWh)	32,513	2,129.71	0.30	0.24	2,229.19
	Natural Gas	975,041	(therms)	97,504	5,172.59	0.10	0.58	5,214.90
TOTAL				**130,017**	**7,302.30**	**0.40**	**0.81**	**7,444.08**
Commercial / Industrial	Electricity	1,023,425	(kWh)	3,493	228.79	0.03	0.03	239.48
	Natural Gas	56,526	(therms)	5,653	299.87	0.01	0.03	302.32
	Direct Access Electricity	162,418	(kWh)	554	50.58	0.01	0.00	52.28
TOTAL				**9,700**	**579.25**	**0.04**	**0.06**	**594.08**

Emission Factors:

Emission Source	GHG	Emission Factor	Emission Factor Source
PG&E Electricity*	CO_2	0.489155 lbs/kwh	The certified CO_2 emission factor for delivered electricity is publicly available at http://www.climateregistry.org/CarrotDocs/19/2005/2005_PUP_Report_V2_Rev1_PGE_rev2_Dec_1.xls
	CO_2e	0.492859 lbs/kwh	PG&E
Default Direct Access Electricity*	CO_2	343.3 short tons/GWh	ICLEI/Tellus Institute (2005 Region 13 - Western Systems Coordinating Council/CNV Average Grid Electricity Coefficients)
	CH_4	0.035 short tons/GWh	
	N_20	0.027 short tons/GWh	
Natural Gas	CO_2	53.05 kg/MMBtu	PG&E/CCAR. Emission factors are derived from: California Energy Commission, Inventory of California Greenhouse Gas Emissions and Sinks: 1990-1999 (November 2002); and Energy Information Administration, Emissions of Greenhouse Gases in the United States 2000 (2001), Table B1, page 140.
	CH_4	0.0059 kg/MMBtu	CCAR. Emission factors are derived from: U.S. EPA, "Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2000" (2002), Table C-2, page C-2. EPA obtained original emission factors from the Intergovernmental Panel on Climate Change, Revised IPCC Guidelines for National Greenhouse Gas Inventories: Reference Manual (1996), Tables 1-15 through 1-19, pages 1.53-1.57.
	N_20	0.001 kg/MMbtu	

Data Sources:

- PG&E electricity and natural gas: Jasmin Ansar, JxA2@pge.com, Xantha Bruso, XxB1@pge.com.
- Direct access electricity estimates: California Energy Commission (CEC): Andrea Gough, agough@energy.state.ca.us

Additional Notes:

- Estimations of electricity purchased through Direct Access (DA) contracts are derived from county level DA consumption figures, provided by the California Energy Commission. The amount of DA in a given community varies. 13.7 percent of "non-residential" electricity consumption in Marin County was DA in 2005 according to the CEC.
- Data entered by Felicia Wheaton, Associate Planner, City of Belvedere, fnwheaton@cityofbelvedere.org; Christine O'Rourke, Community Planning Consultant, christine.o@comcast.net with help from Wesley Look, Program Officer, ICLEI, wesley.look@iclei.org .

Transportation Sector Notes

Sector	Sub Sector	Quantity	Units	Energy Output (MMBtu)	CO_2 Output (metric tons)	N_2O Output (metric tons)	CH_4 Output (metric tons)	Combined Output (metric tons CO_2e)
Transportation	Local Roads	59,351	(vehicle-miles traveled)	56,268	3,942.10	0.52	0.48	4,114.84
TOTAL		59,351	(vehicle-miles traveled)	56,268	3,942.10	0.52	0.48	4,114.84

Data Inputs / Outputs Summary:

Emission Factors: *Provided by BAAQMD, using EMission FACtors (EMFAC) 2007*

Data Sources:

- Local Roads Vehicle Miles Traveled (VMT) 2005 data: Harold Brazil, Air Quality Associate, Metropolitan Transportation Commission (MTC) hbrazil@mtc.ca.gov, (510) 817-5747. Data analyzed by Micah Lang, Program Officer, ICLEI.
- EMFAC data: Amir Fanai, Principal Air Quality Engineer, Bay Area Air Quality Management District, AFanai@baaqmd.gov

Additional Notes:

- Local Road and state highway VMT data provided by MTC is in Daily VMT (DVMT); Annual VMT = DVMT x 365.
- Fleet mix data (on-road fleet breakdown by vehicle type, fuel efficiency, and fuel type) was used to extrapolate VMT into actual gallons of gasoline and diesel consumed on Marin roads and state highways.
- Data entered by Felicia Wheaton, Associate Planner, City of Belvedere, fnwheaton@cityofbelvedere.org; Christine O'Rourke, Community Planning Consultant, christine.o@comcast.net; with help from Wesley Look, Program Officer, ICLEI, wesley.look@iclei.org

Waste Sector Notes

Data Inputs / Outputs Summary:

County	CO_2 Rates (grams/mile)		CH_4 Rates (grams/mile)		N_2O Rates (grams/mile)		VMT Mix		CO_2 Rates- (grams/gallon)		Fuel Usage		Fuel Efficiency (miles/gallon)	
	Gas	Diesel	Gas	Diesel	Gas	Diesel	Gas	Diesel	Gas	Diesel	Gas	Diesel	Gas	Diesel
Marin County	476	1,426	0.065	0.030	0.070	0.050	95.5%	4.5%	8,628	9,957	89.2%	10.8%	18.1	7.0
BAAQMD Average	463	1,389	0.063	0.030	0.070	0.050	94.9%	5.1%	8,607	10,091	87.8%	12.2%	18.6	7.3

Sector	Sub Sector	Quantity	Units	Energy Output (MMBtu)	CO_2 Output (metric tons)	N_2O Output (metric tons)	CH_4 Output (metric tons)	Combined Output (metric tons CO_2e)
Waste	Landfilled Municipal Solid Waste	2,319	tons	0.00	0.00	0.00	3.71	77.92
	Alternative Daily Cover	539	tons	0.00	0.00	0.00	20.16	423.38

TOTAL	**2,858**	**tons**	**0.00**	**0.00**	**0.00**	**23.87**	**501.30**

Emission Factors:

Waste Type	Methane Emissions (metric tons / short ton of waste)	Emission Factor Source
Paper Products	1.940	US EPA
Food Waste	1.098	US EPA
Plant Debris	0.622	US EPA
Wood / Textiles	0.549	US EPA
All Other Waste	0.000	US EPA

Data Sources:

- Municipal solid waste and ADC tonnage data: Alex Soulard, Waste Management Speci ASoulard@co.marin.ca.us, County of Marin Public Works Department - Waste Management
- Waste characterization: CIWMB 2004 Statewide Waste Characterization Study. This state average waste characterization accounts for residential, commercial and self-haul waste. http://www.ciwmb.ca.gov/Publications/default.asp?pubid=1097
- ICLEI CACP software categories correlate with the CIWMB's waste categories according to the following guidelines:

CACP	CIWMB	% of Total
Paper Products	All paper types	21.0
Food Waste	Food	14.6
Plant Debris	Leaves and Grass, Prunings and Trimmings, Branches and Stumps, Agricultural Crop Residues, and Manures	6.9
Wood/Textiles	Textiles, Remainder/Composite Organics, Lumber, and Bulky Items	19.8
All Other Waste	The other category includes all inorganic material types reported: Glass, Metal, Electronics, Plastics, Non-organic C&D, and Special/Hazardous Waste.	37.7

Additional Notes:

The methane emission factors used in ICLEI's CACP Software were derived from the EPA WARM model. For quantification of emissions, only methane generation (or gross emissions) is taken into account. These emissions are estimated to take place over an extensive (up to 100 year) cycle, as anaerobically degradable organic carbon decomposes in a landfill. More information on the WARM Model is available at: http://epa.gov/climatechange/wycd/waste/calculators/Warm_home.html

Appendix F: Government Inventory Methodology Summary

Facilities, Public Lighting, and Water Delivery Sector Notes

Data Inputs / Outputs Summary:

Sector	Facility or Record	Fuel	Cost	Quantity	Units	Energy Output (MMBtu)	CO_2 Output (metric tons)	N_2O Output (metric tons)	CH_4 Output (metric tons)	Combined Output (metric tons CO_2e)
Facilities	City Hall	Natural Gas	360	255	(therms)	26	1.35	0.00	0.00	1.36
	City Hall	Electricity	6,446	42,462	(kWh)	145	9.49	0.00	0.00	9.94
	SUB TOTAL		**6,806**			**171**	**10.85**	**0.00**	**0.00**	**11.30**
	Community Center	Natural Gas	1,440	1,070	(therms)	107	5.68	0.00	0.00	5.72
	Community Center	Electricity	1,753	11,307	(kWh)	39	2.53	0.00	0.00	2.65
	SUB TOTAL		**3,193**			**107**	**5.68**	**0.00**	**0.00**	**5.72**
	Corp Yard	Electricity	1,022	6,160	(kWh)	21	1.38	0.00	0.00	1.44
	SUB TOTAL		**1,022**			**21**	**1.38**	**0.00**	**0.00**	**1.44**
	Generators	Gasoline	8	3	gallons	.4	.03	.00	.00	.03
	SUB TOTAL		**8**			**.4**	**.03**	**.00**	**.00**	**.03**
	TOTAL		**11,029**			**338.4**	**20.46**	**0.00**	**0.00**	**21.14**

Sector	Facility or Record	Fuel	Cost	Quantity	Units	Energy Output (MMBtu)	CO_2 Output (metric tons)	N_2O Output (metric tons)	CH_4 Output (metric tons)	Combined Output (metric tons CO_2e)
Public Lighting	Streetlights	Electricity	6,125	56,907	(kWh)	194	12.72	0.00	0.00	13.32
	TOTAL		**6,125**			**194**	**12.72**	**0.00**	**0.00**	**13.32**

Sector	Facility or Record	Fuel	Cost	Quantity	Units	Energy Output (MMBtu)	CO_2 Output (metric tons)	N_2O Output (metric tons)	CH_4 Output (metric tons)	Combined Output (metric tons CO_2e)
Water	Sprinkler/Irrigation Controls	Electricity	139	348	(kWh)	1	0.08	0.00	0.00	0.08
	SUB TOTAL		**139**	**348**		**1**	**0.08**	**0.00**	**0.00**	**0.08**
	Water Delivery Pumps	Electricity	3,323	18,401	(kWh)	63	4.11	0.00	0.00	4.31
	Water Delivery Pumps	Natural Gas	458	186	(therms)	19	0.99	0.00	0.00	0.99
	SUB TOTAL		**3,781**			**82**	**5.10**	**0.00**	**0.00**	**5.30**
	Sewage and Wastewater	Electricity	2,765	21,074	(kWh)	72	4.71	0.00	0.00	4.93
	Sewage and Wastewater	Natural Gas	121	54	(therms)	5	0.29	0.00	0.00	0.29
	SUB TOTAL		**2,886**			**77**	**5.00**	**0.00**	**0.00**	**5.22**
	TOTAL		**6,806**			**160**	**10.18**	**0.00**	**0.00**	**10.60**

Emission Factors:

Emission Source	GHG	Emission Factor	Emission Factor Source
PG&E Electricity*	CO_2	0.489155 lbs/kwh	The certified CO_2 emission factor for delivered electricity is publicly available a http://www.climateregistry.org/CarrotDocs/19/2005/2005_PUP_Report_V2_Rev1_PGE_rev2_Dec_1.xls
	CO_2e	0.492859 lbs/kwh	PG&E
Natural Gas	CO_2	53.05 kg/MMBtu	PG&E/CCAR. Emission factors are derived from: California Energy Commission, Inventory of California Greenhouse Gas Emissions and Sinks: 1990-1999 (November 2002); and Energy Information Administration, Emissions of Greenhouse Gases in the United States 2000 (2001), Table B1, page 140.
	CH_4	0.0059 kg/MMBtu	CCAR. Emission factors are derived from: U.S. EPA, "Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2000" (2002), Table C-2, page C-2. EPA obtained original emission factors from the Intergovernmental Panel on Climate Change, Revised IPCC Guidelines for National Greenhouse Gas Inventories: Reference Manual (1996), Tables 1-15 through 1-19, pages 1.53-1.57.

Data Sources:

PG&E electricity and natural gas: Lynne Galal, L1G7@pge.com

Vehicle Fleet Sector Notes

Data Inputs / Outputs Summary:

Sector	Department or Vehicle Group	VMT	Fuel / Input	Quantity	Units	Cost	Energy Output (MMBtu)	CO_2 Output (metric tons)	N_2O Output (metric tons)	CH_4 Output (metric tons)	Combined Output (metric tons CO_2e)
Vehicle Fleet	Public Works	17,450	Gasoline	1,322	gallons	3,331.44	166	11.65	0.49	0.03	19.55
		0	Diesel	727	gallons	1,890.12	89	7.38			
	SUB TOTAL	**17,450**		**2,049**	gallons	**5,221.56**	**255**	**19.03**	**0.49**	**0.03**	**19.55**
	Police	31,024	Gasoline	3,445	gallons	8,681.40	433	30.35	0.26	0.01	30.62
	SUB TOTAL	**31,024**		**3,445**	gallons	**8,681.40**	**433**	**30.35**	**0.26**	**0.01**	**30.62**

	Building	5,432	Gasoline	272	gallons	685.44	34	2.40	0.07	0.00	2.47
	SUB TOTAL	**5,432**		**272**	gallons	**685.44**	**34**	**2.40**	**0.07**	**0.00**	**2.47**
	TOTAL	**53,906**		**5,766**	**gallons**	**14,588.40**	**722**	**51.78**	**0.82**	**0.04**	**52.64**

Emissions from mobile combustion result of two separate processes. First, when fossil fuels (gasoline, diesel, natural gas) combust, they release carbon dioxide as a product of the combustion process, and these emissions are reported as Scope 1.[24] In addition, no combustion process results in a completely combusted fuel, and two of the byproducts of incomplete combustion are methane (CH_4) and nitrous oxide (N_2O). These emissions are also considered Scope 1 emissions and are included in the final CO_2e number for mobile combustion.[25]

[24] CO_2 emissions from the combustion of biofuels are not reported as Scope 1 emissions but are reported as information items.
[25] CH_4 and N_2O emissions from the incomplete combustion of biofuels are reported as Scope 1 emissions in this section.

Emission Factors

Emission Source	GHG	Emission Factor	Emission Factor Source
Gasoline	CO_2	**8.81 kg / gallon**	Local Government Operations Protocol (LGOP) Table G.9 / US EPA *Inventory of Greenhouse Gas Emissions and Sinks: 1990-2005* (2007), Annex 2.1, Tables A-31, A-34, A-36, A-39, except those marked + (from EPA Climate Leaders, Mobile Combustion Guidance, 2008).
	CH_4	x g / mi. *	Local Government Operations Protocol (LGOP) Table G.10 / US EPA Climate Leaders, Mobile Combustion Guidance, (2007) based on U.S. EPA, *Inventory of U.S. Greenhouse Gas Emissions and* Sinks: 1990-2005 (2007).
	N_20	x g / mi.*	Local Government Operations Protocol (LGOP) Table G.10 / US EPA Climate Leaders, Mobile Combustion Guidance, (2007) based on U.S. EPA, *Inventory of U.S. Greenhouse Gas Emissions and* Sinks: 1990-2005 (2007).
Diesel	CO_2	**10.15 kg CO_2 / gallon**	Local Government Operations Protocol (LGOP) Table G.9 / US EPA *Inventory of Greenhouse Gas Emissions and Sinks: 1990-2005* (2007), Annex 2.1, Tables A-31, A-34, A-36, A-39, except those marked + (from EPA Climate Leaders, Mobile Combustion Guidance, 2008).
	CH_4	x g / mi.*	Local Government Operations Protocol (LGOP) Table G.10 / US EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2005* (2007), Annex 3.2, Table A-98.
	N_20	x g / mi.*	Local Government Operations Protocol (LGOP) Table G.10 / US EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2005* (2007), Annex 3.2, Table A-98.

* CH_4 and N_2O (incomplete combustion) emission factors from mobile combustion are assigned per vehicle type, model 2005, and fuel type, and therefore vary per vehicle. See LGOP Table G.10.
Emission factors were derived from the Local Government Operations Protocol (LGOP) for CO_2, CH_4, and N_2O.

Data Sources:

Fuel Consumption: Scott Derdenger, Public Works Manager, sderdenger@cityofbelvedere.org; Lylene Philips, Police Secretary, lphilips@cityofbelvedere.org; Lee Braun, Building Official, 435-3838, lbraun@cityofbelvedere.org

Additional Notes:

Data entered by Felicia Wheaton, Associate Planner, City of Belvedere, fnwheaton@cityofbelvedere.org; Christine O'Rourke, Project Planner, christine.o@comcast.net, with help from Wesley Look, Program Officer, ICLEI, wesley.look@iclei.org

Waste Sector Notes

Data Inputs / Outputs Summary:

Sector	Facility / Waste Group	Quantity	Units	Energy Output (MMBtu)	CO_2 Output (metric tons)	N_2O Output (metric tons)	CH_4 Output (metric tons)	Combined Output (metric tons CO_2e)
Waste	City Hall	5.1	tons	0.00	0.00	0.00	0.06	1.29
	Community Center	7.4	tons	0.00	0.00	0.00	0.09	1.88
	Corp Yard	18.7	tons	0.00	0.00	0.00	0.23	4.74
	Parks	4.4	tons	0.00	0.00	0.00	0.05	1.12
	TOTAL	**35.6**	**tons**	**0.00**	**0.00**	**0.00**	**0.43**	

Emission Factors:

Waste Type	Methane Emissions (metric tons / short ton of waste)	Emission Factor Source
Paper Products	1.940	US EPA
Food Waste	1.098	US EPA
Plant Debris	0.622	US EPA
Wood / Textiles	0.549	US EPA
All Other Waste	0.000	US EPA

Data Sources:

Waste Generation: Jennifer Dami, Finance Manager, Mill Valley Refuse, 415-457-9760, Jennifer@millvalleyrefuse.com..

Waste Characterization: California Integrated Waste Management Board (CIWMB), derived specifically for the "Public Administration" Sector, using the Business Waste Characterization portion of the CIWMB 1999 Statewide Waste Characterization Study: http://www.ciwmb.ca.gov/WasteChar/BizGrpCp.asp

ICLEI CACP software categories correlate with the CIWMB's waste characterization categories according to the following guidelines:

CACP	CIWMB	Percent of Total
Paper Products	All paper types	39.4
Food Waste	Food	9.8
Plant Debris	Leaves and Grass, Prunings and Trimmings, Branches and Stumps, Remainder/Composite Organic	17.0
Wood/Textiles	Textiles (Under "Other Organic"), Lumber (Under "Construction and Demolition"), Remainder/Composite Construction and Demolition	6.7
All Other Waste	The other category includes all inorganic material types reported: Glass, Metal, Electronics, Plastics, Non-organic C&D, and Special/Hazardous Waste.	27.1

Additional Notes:

- Data entered by Felicia Wheaton, Associate Planner, City of Belvedere, fnwheaton@cityofbelvedere.org; Christine O'Rourke, Community Planning Consultant, christine.o@comcast.net; with help from Wesley Look, Program Officer, ICLEI, wesley.look@iclei.org
- 75% methane recovery factor is derived from the Local Government Operations Protocol, Chapter 9.
- Tons of waste disposed were primarily estimated (with the generous support of Marin Sanitary Service) using trash pick-up schedules, combined with the volumetric size of each container (dumpster, etc) at each site, and estimates the average fill and diversion rate. All trash bins were assumed to have a 0% diversion rate, and all recycling bins were estimated to have an 85% diversion rate (as some of the waste erroneously included in recycling containers is not recyclable.) Trash pick-up schedules from proxy year 2008 were used as proxy for unavailab base year 2005 data. It is assumed that there have not been any drastic alterations in the level of garbage service provided to Belvedere facilities between 2005 and proxy year 2008.
- CO_2e emissions from waste and ADC disposal were calculated using the *methane commitment method* in the CACP software, which uses a version of the EPA WARM model. This model has the following general formula:

$$CO_2=W_T(1-R)A$$

Appendix G: Example Employee Commute Survey

Belvedere Employee Commute Questionnaire

This information is being gathered as part of Belvedere's participation in the ICLEI Cities for Climate Protection Program and as part of a collaborative effort among Marin local governments to reduce greenhouse gas emissions called the Marin Climate and Energy Partnership. The goals are to reduce energy consumption, save money and reduce greenhouse gas and local air pollution. All information will be kept anonymous and confidential. Questionnaires should be completed and returned to Felicia by **Tuesday, Feb. 12, 2008**. Thank you in advance for your participation!

For the year 2007, please make your best estimate for the following questions:

1) How did you travel to work? (Check or highlight one.)

____ Drive Alone
____ Carpool
____ Bike
____ Take Public Transit
____ Bike
____ Walk

2) If you carpooled, how many other Belvedere employees traveled with you on average?

If you drive, what type of vehicle did you drive most often? (Check or highlight one.)

____ Auto, Full-size
____ Auto, Mid-size
____ Auto, Compact
____ Heavy Truck
____ Light Truck/SUV
____ Motorcycles
____ Van

3) What type of fuel does your vehicle use? (Check or highlight one.)

____ Gasoline
____ Diesel
____ Ultra-low Sulfur Diesel
____ Bio-diesel
____ Hybrid
____ Ethanol
____ Electric
____ LPG (Liquefied Petroleum Gas)
____ CNG (Compressed Natural Gas)
____ Other

4) On average, how many days per week did you work during **2007**?

5) On an average day, how many miles did you travel to work round trip each day during **2007**?

If you worked for Belvedere during the year 2005, please make your best estimate for the following questions #7 through #12. If you worked for only part of the year, please indicate how many months of the year you were employed for Belvedere. If you did not work for Belvedere at all during the year 2005, please skip to question #13 on the next page.

6) How did you travel to work? (Check or highlight one.)

____ Drive Alone
____ Carpool
____ Bike
____ Take Public Transit
____ Bike
____ Walk

7) If you carpooled, how many other Belvedere employees traveled with you on average?

8) If you drive, what type of vehicle did you drive most often? (Check or highlight one.)

____ Auto, Full-size
____ Auto, Mid-size
____ Auto, Compact
____ Heavy Truck
____ Light Truck/SUV
____ Motorcycles
____ Van

9) What type of fuel does your vehicle use? (Check or highlight one.)

____ Gasoline
____ Diesel
____ Ultra-low Sulfur Diesel
____ Bio-diesel
____ Hybrid
____ Ethanol
____ Electric
____ LPG (Liquefied Petroleum Gas)
____ CNG (Compressed Natural Gas)
____ Other

10) On average, how many days per week did you work during **2005**?

11) On an average day, how many miles did you travel to work round trip each day during **2005**?

Whether or not you worked for Belvedere in 2005, please answer these final questions:

12) If an incentive were available, would you be willing to use mass transportation? (Circle or highlight one.)

Yes No

13) Select a mass transportation mode that you would most likely use. (Check or highlight one.)

____ Car Pool
____ Van Pool
____ Take the Bus
____ Bicycle
____ Walk
____ Commuter Train, If Available
____ Other

14) Have you completed a home energy audit in the location you currently reside in? (Circle or highlight one.)

Yes No

15) Would you consider having a free home energy audit done for your current home? (Circle or highlight one.)

Yes No

Please return this questionnaire via email or print and return directly to Felicia Wheaton, Planning Department.

Questionnaires are due back by **Tuesday, February 12, 2008**.

If you have any questions, please don't hesitate to contact me at (415) 435-3838 x205 or fnwheaton@cityofbelvedere.org.

Thanks again for your participation!

Appendix H: City Council Resolution 2007-26

CITY OF BELVEDERE

RESOLUTION NO. 2007-26

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF BELVEDERE APPROVING MEMBERSHIP IN ICLEI–LOCAL GOVERNMENTS FOR SUSTAINABILITY U.S.A. AND PARTICIPATION IN THE CITIES FOR CLIMATE PROTECTION® CAMPAIGN

WHEREAS, scientific consensus has developed that carbon dioxide (CO_2) and other greenhouse gases released into the atmosphere have a profound effect on the Earth's climate; and

WHEREAS, the 2007 Fourth Assessment Report from the Intergovernmental Panel on Climate Change (IPCC) states that it is very likely that most of the observed increases in globally averaged temperatures since the mid-20th century are due to human-induced greenhouse gas emissions; and

WHEREAS, in 2006 the U.S. National Climatic Data Center confirmed clear evidence of human influences on climate due to changes in greenhouse gases; and

WHEREAS, the U.S. Conference of Mayors endorsed the 2005 U.S. Mayors' Climate Protection Agreement initiated by Seattle Mayor Nickels and signed by 494 mayors in the United States as of April 2007; and

WHEREAS, the Urban Environmental Accords adopted by local government delegates during UN World Environment Day 2005 call for reduced emissions through energy efficiency, land use and transportation planning, waste reduction, and wiser energy management; and

WHEREAS, in 2003 the American Geophysical Union adopted a Statement noting that human activities are increasingly altering the Earth's climate and that natural influences cannot explain the rapid increase in near-surface temperatures observed during the second half of the 20th century; and

WHEREAS, in 2001, at the request of the Administration, the National Academy of Sciences (NAS) reviewed and declared global warming a real problem likely due to human activities; and

WHEREAS, the 2000 U.S. Global Change Research Program's (USGCRP) First National Assessment indicated that global warming has begun; and

WHEREAS, 162 countries including the United States pledged under the United Nations Framework Convention on Climate Change to reduce their greenhouse gas emissions; and

WHEREAS, energy consumption, specifically the burning of fossil fuels, accounts for more than 80% of U.S. greenhouse gas emissions; and

WHEREAS, local government actions taken to reduce greenhouse gas emissions and increase energy efficiency provide multiple local benefits by decreasing air pollution, creating jobs, reducing energy expenditures, and saving money for the local government, its businesses, and its residents; and

WHEREAS, the Cities for Climate Protection® Campaign sponsored by ICLEI--Local Governments for Sustainability has invited the City/Town/County to join ICLEI and become a partner in the Cities for Climate Protection Campaign;

NOW THEREFORE, BE IT RESOLVED, that the City of Belvedere will join ICLEI as a Full Member and participate in the Cities for Climate Protection Campaign and, as a participant, pledges to take a leadership role in promoting public awareness about the causes and impacts of climate change.

BE IT FURTHER RESOLVED, that the City will undertake the Cities for Climate Protection Campaign's five milestones to reduce both greenhouse gas and air pollution emissions throughout the community, and specifically:

- Conduct a greenhouse gas emissions inventory and forecast to determine the source and quantity of greenhouse gas emissions in the jurisdiction;
- Establish a greenhouse gas emissions reduction target;
- Develop an action plan with both existing and future actions which when implemented will meet the local greenhouse gas reduction target;
- Implement the action plan; and
- Monitor and report progress; and

BE IT FINALLY RESOLVED that the City of Belvedere requests assistance from ICLEI's Cities for Climate Protection Campaign as it progresses through the milestones.

PASSED AND ADOPTED at a regular meeting of the City Council of the City of Belvedere on December 3, 2007, by the following vote:

AYES: James Berg, Thomas Cromwell, John Telischak, and Mayor Gerald Butler
NOES: None
ABSENT: Barbara Morrison
ABSTAIN: None

APPROVED: _____
Gerald Butler, Mayor

ATTEST: _____
Leslie Carpentiers, Deputy City Clerk

Traffic and Circulation Analysis for the Belvedere General Plan Update

Analysis completed by Crane Transportation Group
December 2009

Table 1
Signalized Intersection Level of Service Criteria

Level of Service	Description	Average Control Delay* (Seconds Per Vehicle)
A	Operations with very low delay occurring with favorable progression and/or short cycle lengths.	< 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	10.1 to 20.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.1 to 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, and/or high volume-to-capacity (V/C) ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 55.0
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	55.1 to 80.0
F	Operation with delays unacceptable to most drivers occurring due to oversaturation, poor progression, or very long cycle lengths.	> 80.0

* Control delay includes initial deceleration delay, queue move-up time, stopped delay, and acceleration delay.
Source: 2000 Highway Capacity Manual (Transportation Research Board, 2000).

Table 2
Unsignalized Intersection Level of Service Criteria

Level of Service	Description	Average Control Delay* (Seconds Per Vehicle)
A	Little or no delay	< 10.0
B	Short traffic delays	10.1 to 15.0
C	Average traffic delays	15.1 to 25.0
D	Long traffic delays	25.1 to 35.0
E	Very long traffic delays	35.1 to 50.0
F	Extreme traffic delays with intersection capacity exceeded (for an all-way stop), or with approach/turn movement capacity exceeded (for a side street stop controlled intersection)	> 50.0

* Control delay includes initial deceleration delay, queue move-up time, stopped delay, and acceleration delay.
Source: 2000 Highway Capacity Manual (Transportation Research Board, 2000).

Unsignalized Intersections For unsignalized (all-way stop-controlled and side-street stop-controlled) intersections, the 2000 Highway Capacity Manual (Transportation Research Board, National Research Council) methodology for unsignalized intersections was utilized. For side-street stop-controlled intersections, operations are defined by the level of service and average control delay per vehicle (measured in seconds), with delay typically represented for the stop sign controlled approaches or turn movements. For all-way stop-controlled intersections, operations are defined by the average control delay for the entire intersection (measured in seconds per vehicle). The delay at an unsignalized intersection incorporates delay associated with deceleration, acceleration, stopping, and moving up in the queue. **Table 2** provides greater detail about unsignalized analysis methodologies.

Minimum Acceptable Standards

LOS standards for intersections in the Belvedere/Tiburon Planning Area are based on the following:

- The *Marin County Congestion Management Program* (CMP), developed by the Transportation Authority of Marin (TAM) stipulates that urban and suburban arterials within the County should operate at LOS D or better, while highways such as U.S. 101 should operate at LOS E or better. [1]

- The *Tiburon General Plan* stipulates that intersections should operate at LOS C or better, with some exceptions (the intersections analyzed in this report are not listed as exceptions).

Existing and Future Intersection Levels of Service

Tables 3 and 4 show the existing and future levels of service for each of the four intersections analyzed. As shown, the two signalized intersections currently operate acceptably during the weekday AM and PM peak hours, and during the Saturday PM peak hour. The two unsignalized intersections have all but one approach operating acceptably: during the weekday AM and PM peak hours, the Lagoon-Cove Road northbound intersection approach operates at LOS D (existing PM peak hour conditions) and LOS E or F (future AM, PM and Saturday peak hour conditions); the Mar West southbound intersection approach operates at LOS D or F (Saturday and PM peak hour future conditions, respectively). These levels of service are unacceptable according to the standards of the Marin County CMP and Tiburon General Plan. Based on Caltrans criteria, the current volume of side street traffic is not sufficient to warrant signalization. However, future volume projections would result in the peak hour signal warrant being met (see the discussion of signal warrants below). If signalized, the intersection would operate acceptably at LOS B or C for all analyzed conditions.

---

1 *Marin Congestion Management Program, Draft Report Update*, Transportation Authority of Marin, 2007.

Table 3

EXISTING INTERSECTION LEVEL OF SERVICE AM, PM AND SATURDAY PEAK HOURS

INTERSECTION	EXISTING		
	AM PEAK HOUR	PM PEAK HOUR	SATURDAY PEAK HOUR
San Rafael Avenue/ Tiburon Boulevard	B-12.3 (1)	B-10.7	A-9.0
Mar West Street/ Lagoon Road - Cove Road/ Tiburon Boulevard	A-8.7/A-8.2/D-21.5/B-15.9 (2)	A-8.6/A-9.1/D-26.8/D-31.0	A-8.9/A-8.4/C-23.7/C-18.7
Beach Road/ Tiburon Boulevard	B-14.5 (1)	B-17.4	B-16.2
Beach Road/ Main Street.	A-9.8/A-7.6 (3)	B-10.5/A-7.7	B-13.7/A-8.1

1. Signalized level of service-average vehicle delay (in seconds).

2 Side street stop sign-controlled level of service-average vehicle delay (in seconds). Eastbound Tiburon Boulevard left turn to Mar West Street/ Westbound Tiburon Boulevard left turn to Mar West Street/ Northbound Lagoon-Cove Road approach to Tiburon Boulevard/ Southbound Mar West Street approach to Tiburon Boulevard.

3 Side street stop sign-controlled level of service-average vehicle delay (in seconds). Westbound Main Street approach to Beach Road/ Southbound left turn from Beach Road to Main Street.

Year 2000 Highway Capacity Manual Analysis Methodology.
Source: Crane Transportation Group

Table 4

YEAR 2020 INTERSECTION LEVEL OF SERVICE AM, PM AND SATURDAY PEAK HOURS

INTERSECTION	Year 2020		
	AM PEAK HOUR	PM PEAK HOUR	SATURDAY PEAK HOUR
San Rafael Avenue/ Tiburon Boulevard	B-19.1 (1)	B-14.6	B-11.9
Mar West Street/ Lagoon Road - Cove Road/ Tiburon Boulevard	A-9.1/A-8.9/ E-44.4/C-21.9 (2) B-16.4 (1)	A-9.1/B-10.3/F-84.9/F-166.1 C-28.3 (1)	A-9.7/A-9.2/F-52.6/D-33.1 B-16.5 (1)
Beach Road/ Tiburon Boulevard	B-14.9 (1)	B-19.9	B-16.6
Beach Road/ Main Street.	A-10.0/A-7.6 (3)	B-11.1/A-7.9	C-15.7/A-8.4

1. Signalized level of service-average vehicle delay (in seconds).

2 Side street stop sign-controlled level of service-average vehicle delay (in seconds). Eastbound Tiburon Boulevard left turn to Mar West Street/ Westbound Tiburon Boulevard left turn to Mar West Street/ Northbound Lagoon-Cove Road approach to Tiburon Boulevard/ Southbound Mar West Street approach to Tiburon Boulevard.

3 Side street stop sign-controlled level of service-average vehicle delay (in seconds). Westbound Main Street approach to Beach Road/ Southbound left turn from Beach Road to Main Street.

Year 2000 Highway Capacity Manual Analysis Methodology.
Source: Crane Transportation Group

Signal Warrants. Traffic signals are used to provide an orderly flow of traffic through an intersection. Many times they are needed to offer side street traffic an opportunity to access a major road where high volumes and/or high vehicle speeds block crossing or turn movements. They do not, however, increase the capacity of an intersection (i.e. increase the overall intersection's ability to accommodate additional vehicles) and, in fact, often slightly reduce the number of total vehicles that can pass through an intersection in a given period of time. Signals can also cause an increase in traffic accidents if installed at inappropriate locations.

There are eight possible tests for determining whether a traffic signal should be considered for installation. These tests, called "warrants," consider criteria such as actual traffic volume, pedestrian volume, presence of school children, and accident history. Usually, two or more warrants must be met before a signal is installed. For this analysis, the test for Peak Hour Volumes (Warrant #3) has been applied. When Warrant #3 is met, there is a strong indication that a detailed signal warrant analysis covering all possible warrants is appropriate. These

rigorous analyses are described in Chapter 4 of the *2003 Manual on Uniform Traffic Control Devices (MUTCD)* [2].

It is possible that an unsignalized intersection will not meet signal warrants, but will have one or more movements that experience LOS F operations. LOS F can be indicated for a very low volume of vehicles at a stop sign. Although these stopped vehicles may experience long delays of one minute or more, there would not be an overall benefit if the higher numbers of vehicles on the major street are stopped in favor of the few vehicles on the minor street. The signal warrant considers a balance between major street and minor street delays, and may indicate that there is overall benefit if drivers for some turn movements from the minor street continue to experience long (LOS E or F) delays.

For purposes of this analysis, Warrant #3 has been checked for the unsignalized intersection of Tiburon Boulevard with Mar West Street/ Lagoon Road/ Cove Road where lower volume side street turning movements experience lower levels of service and delay. As volumes increase at this intersection, service levels may deteriorate below acceptable levels, and provision of a signal, when warranted, would implement the Marin Countywide Plan policy TR-1.2 requiring maintenance of service standards, and the Town of Tiburon plan to signalize this intersection when warranted. **Table 5** shows that future volumes at this unsignalized study intersection meet peak hour signal warrant criteria levels during the year 2020 weekday PM peak hour.

Table 5
Signal Warrant test at the Tiburon Boulevard/ Mar West Street/Lagoon Road/Cove Road Intersection

Location	***Existing***		
	AM Peak Hour	***PM Peak Hour***	***Saturday Peak Hour***
Tiburon Boulevard/ Mar West Street/ Lagoon Road/ Cove Road	No	No	No

Location	***Year 2020***		
	AM Peak Hour	***PM Peak Hour***	***Saturday Peak Hour***
Tiburon Boulevard/ Mar West Street/ Lagoon Road/ Cove Road	No	**Yes**	No

Source: Crane Transportation Group

[2] *2003 Manual on Uniform Traffic Control Devices*, Federal Highway Administration.

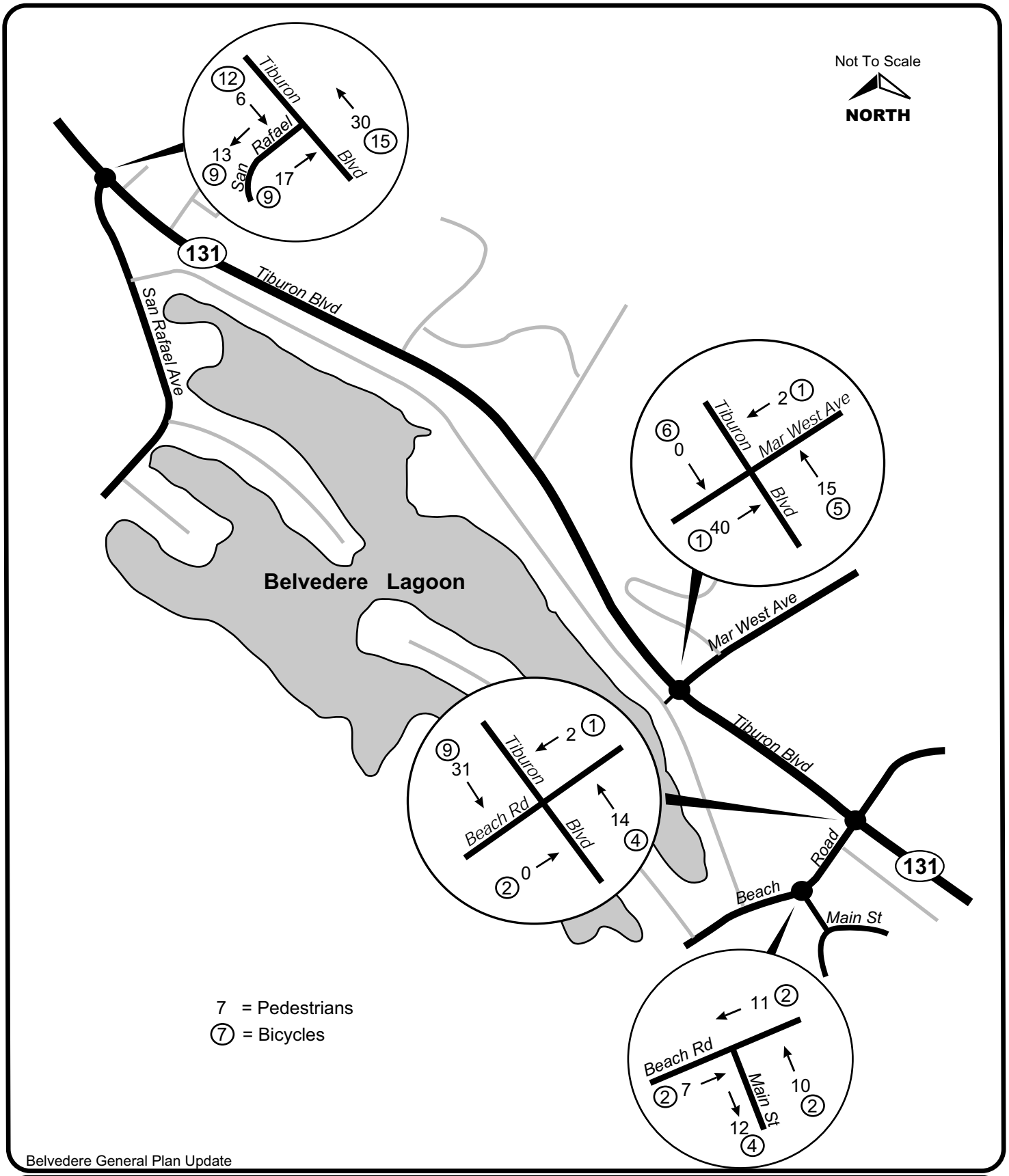


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Figure 1
Existing Weekday AM Peak Hour Pedestrian and Bicycle Volumes (7:45-8:45 AM)

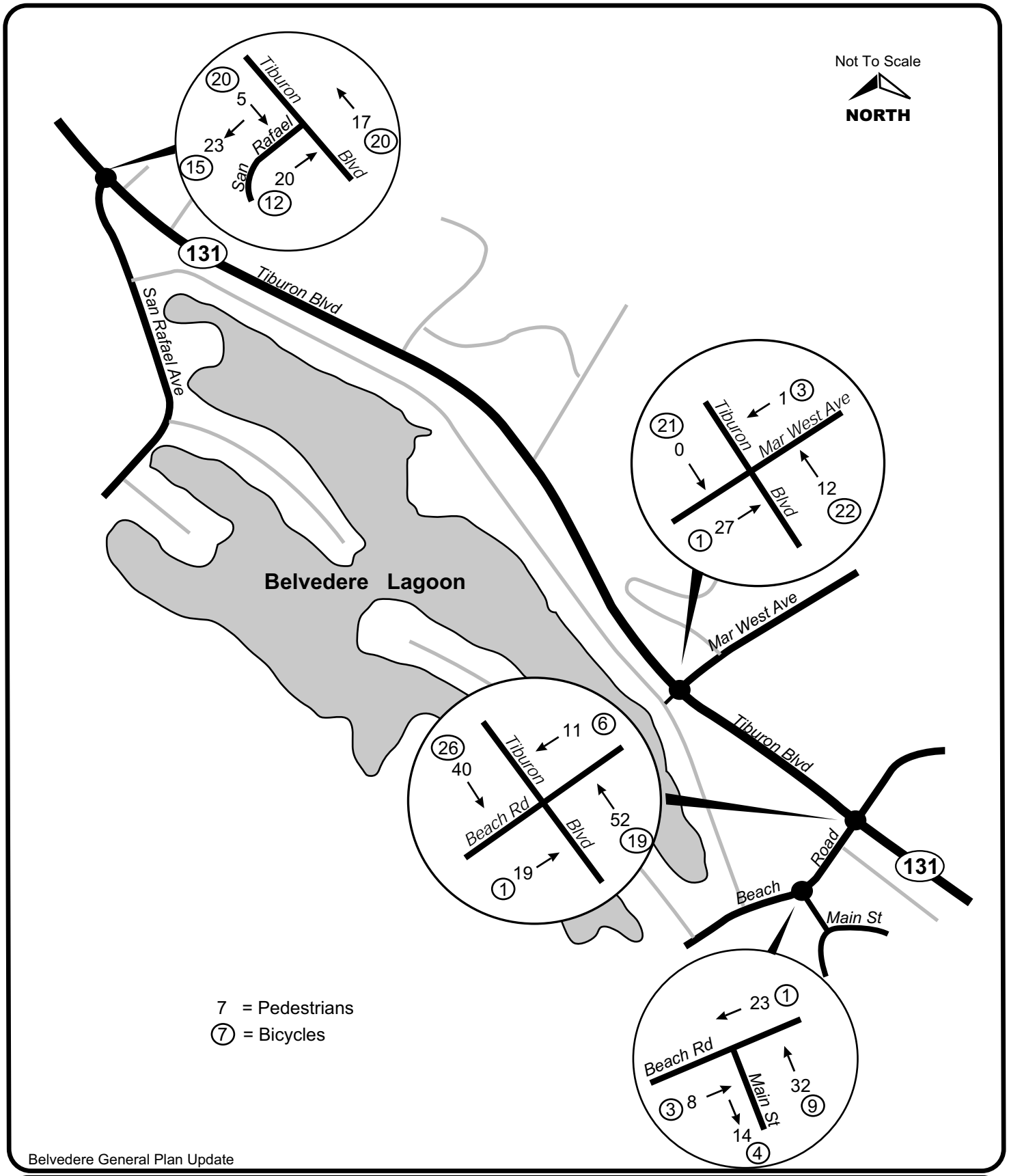

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Figure 2
Existing Weekday PM Peak Hour Pedestrian and Bicycle Volumes (4:30-5:30 PM)

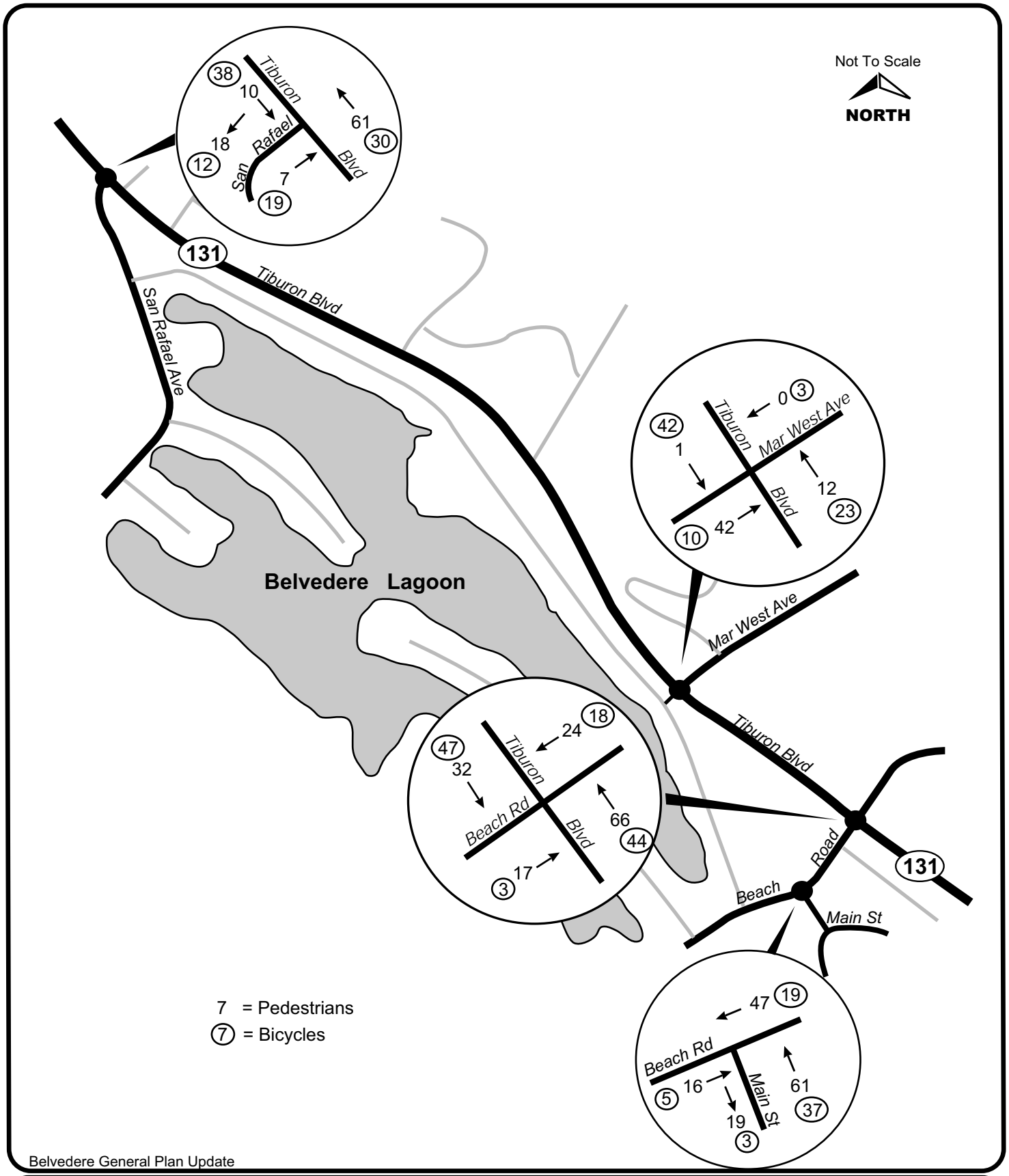

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Figure 3
Existing Saturday Peak Hour
Pedestrian and Bicycle Volumes
(3:15-4:15 PM)

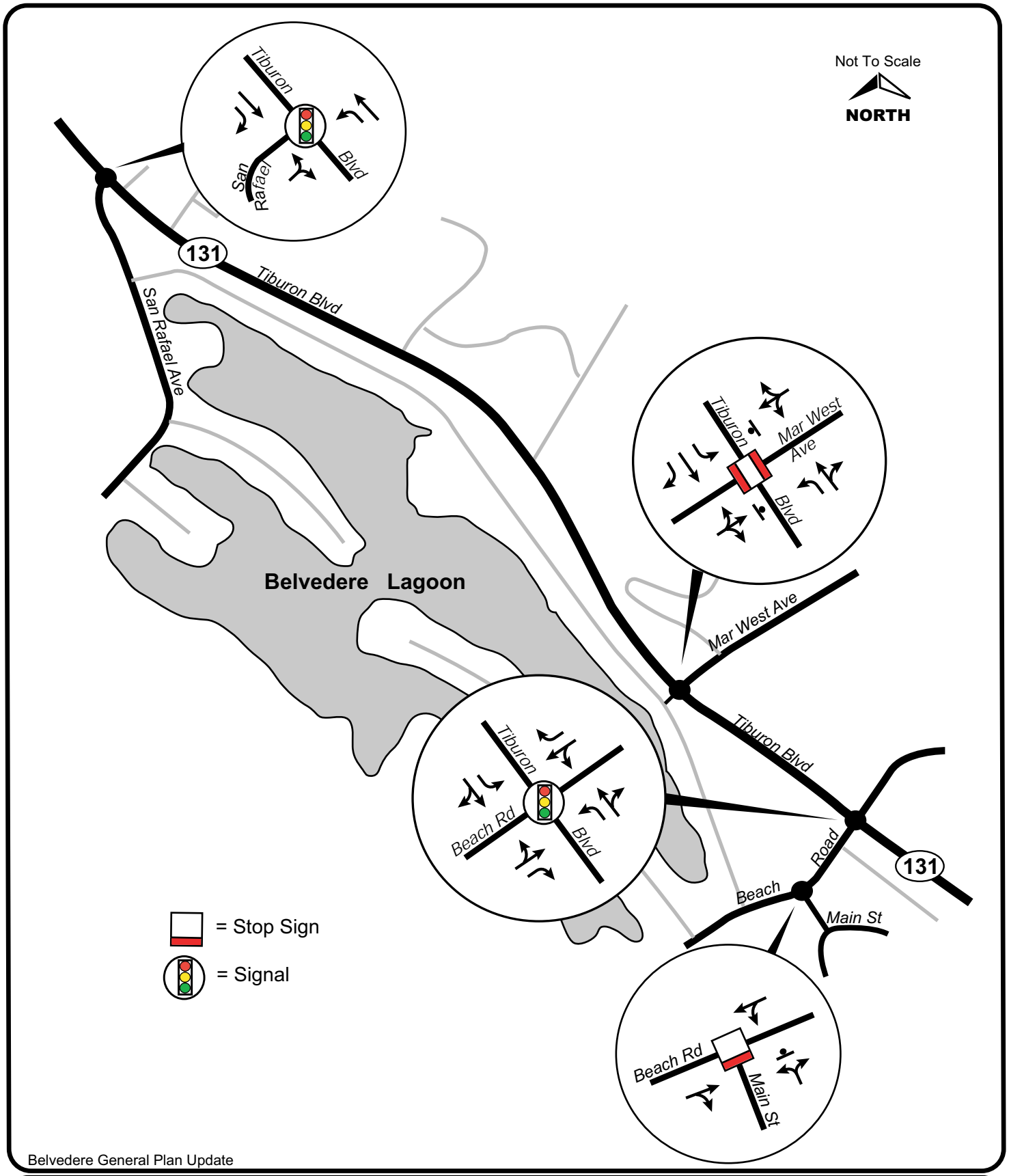

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Figure 5

Existing Lane Geometrics and Intersection Control

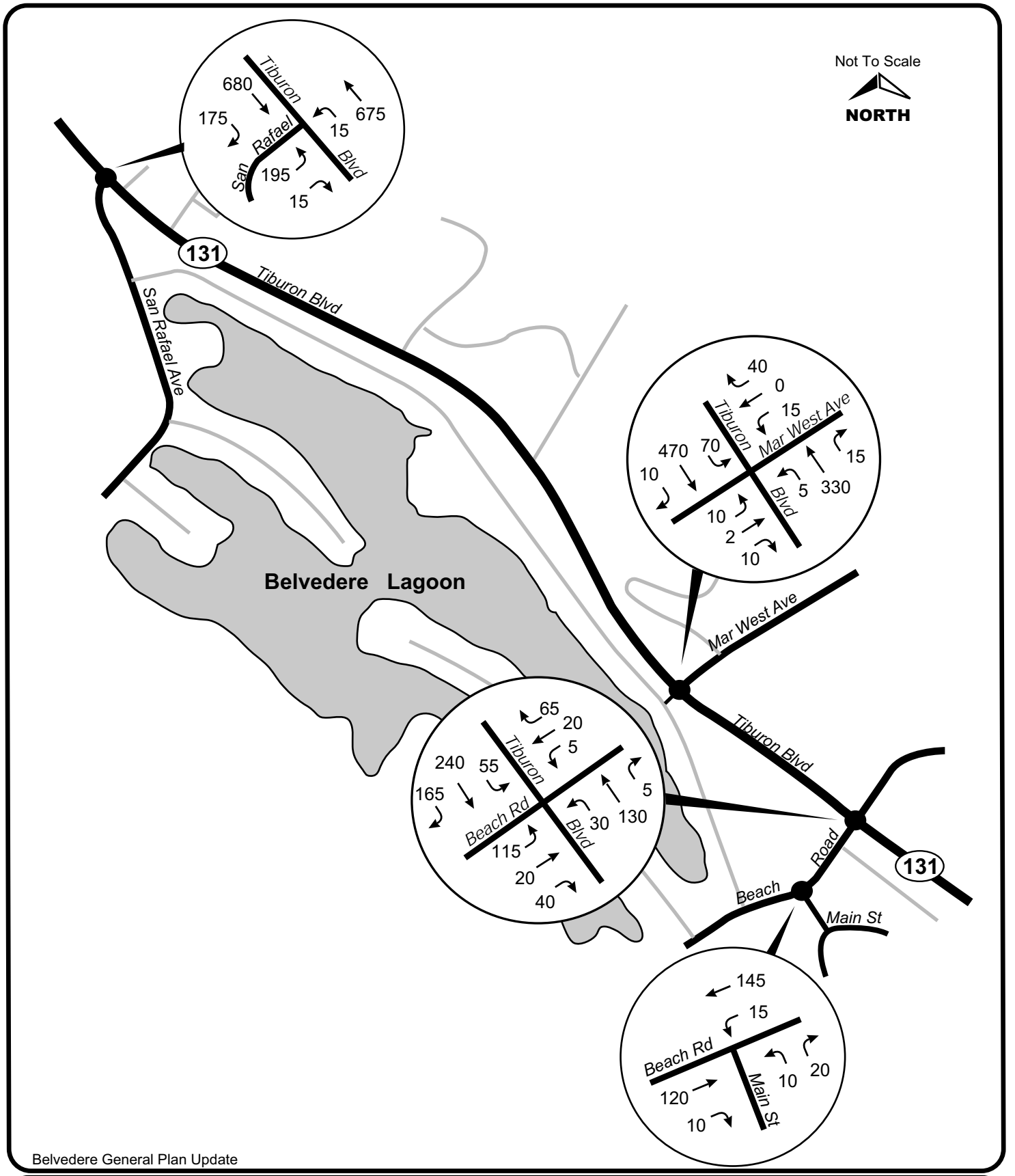

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Figure 6
Existing Weekday AM
Peak Hour Volumes
(7:45-8:45 AM)

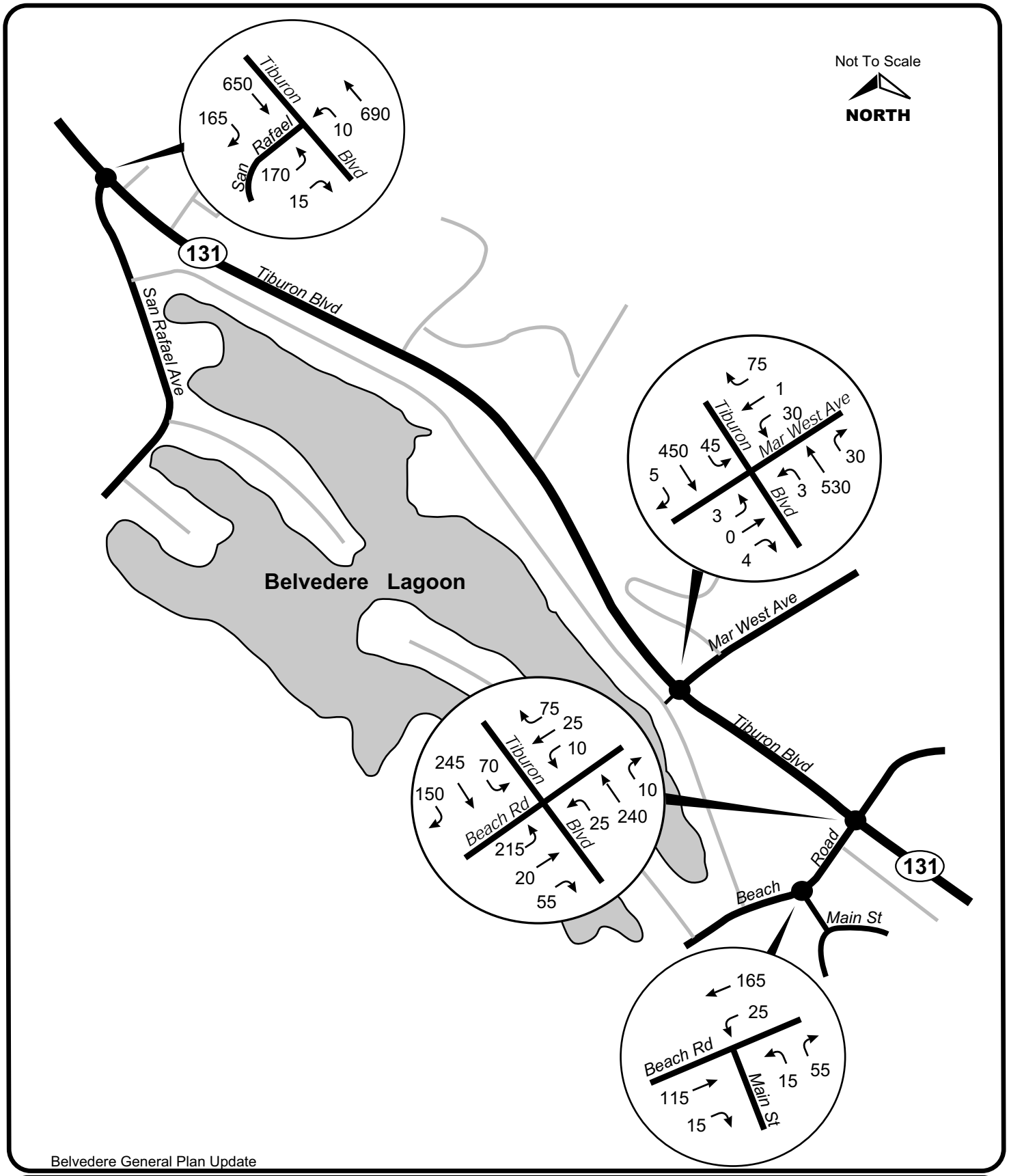

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Figure 7
Existing Weekday PM Peak Hour Volumes (4:30-5:30 PM)

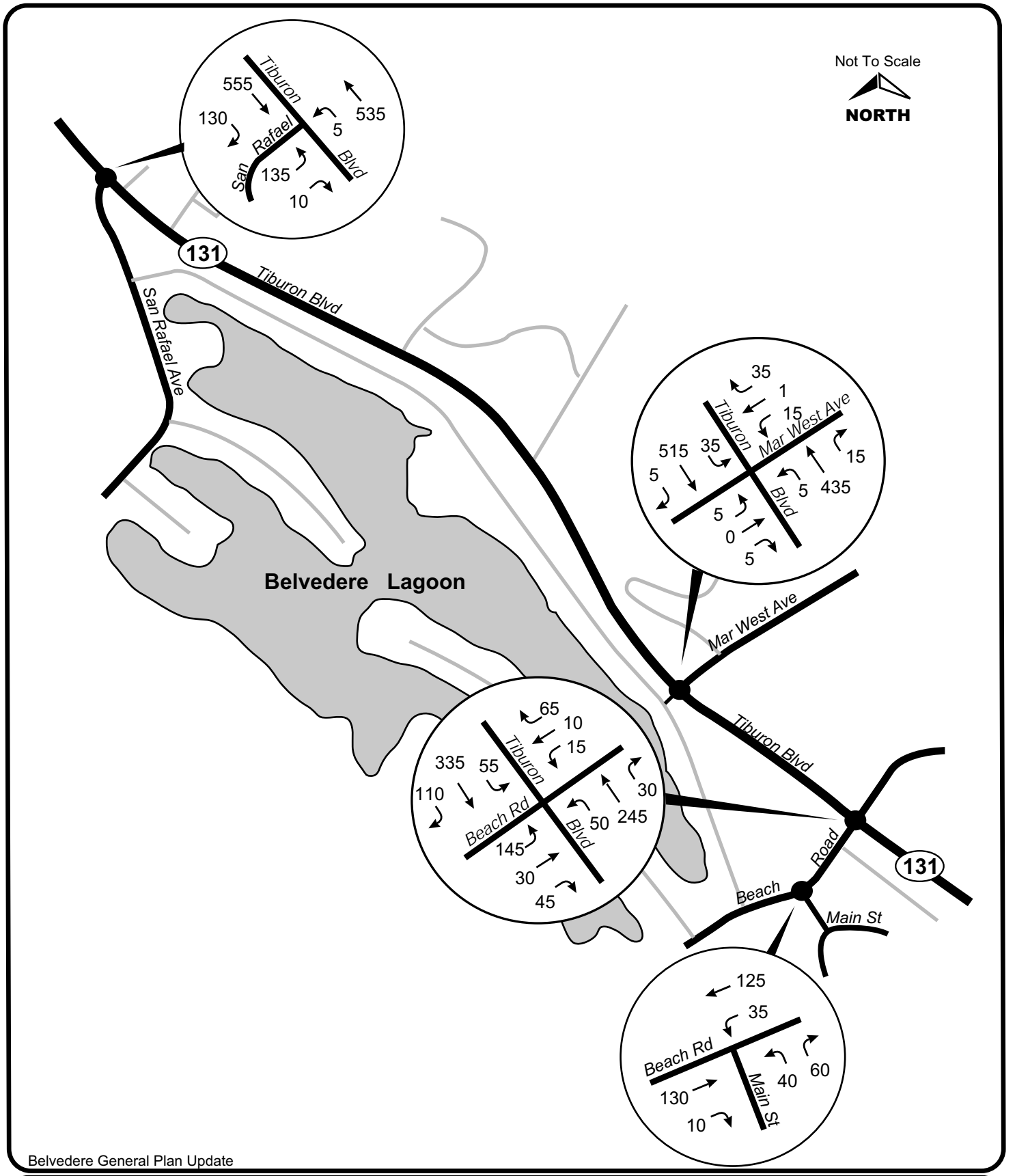

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Figure 8
Existing Saturday
Peak Hour Volumes
(3:15-4:15 PM)

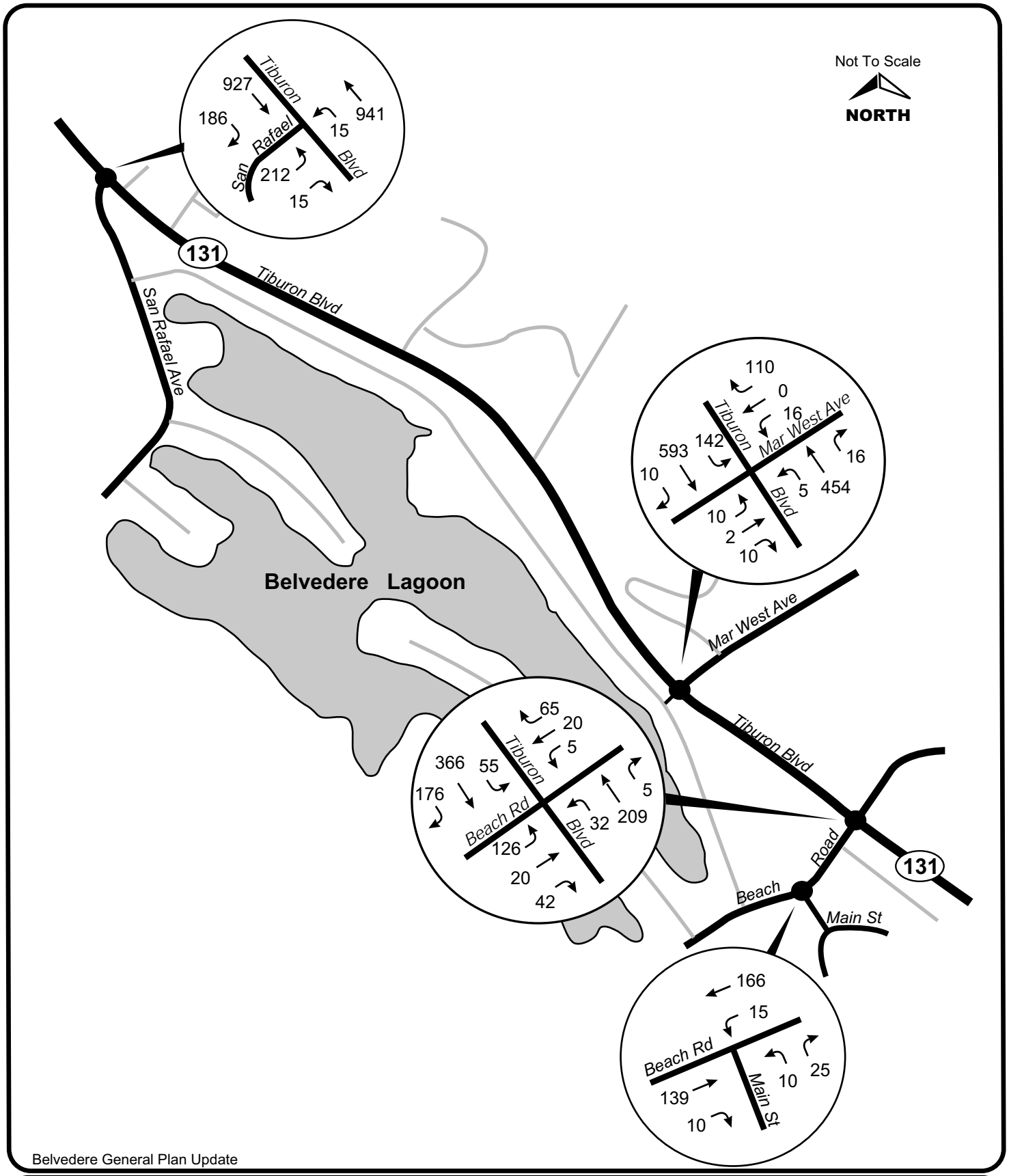

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Figure 9

2020 Weekday AM Peak Hour Volumes

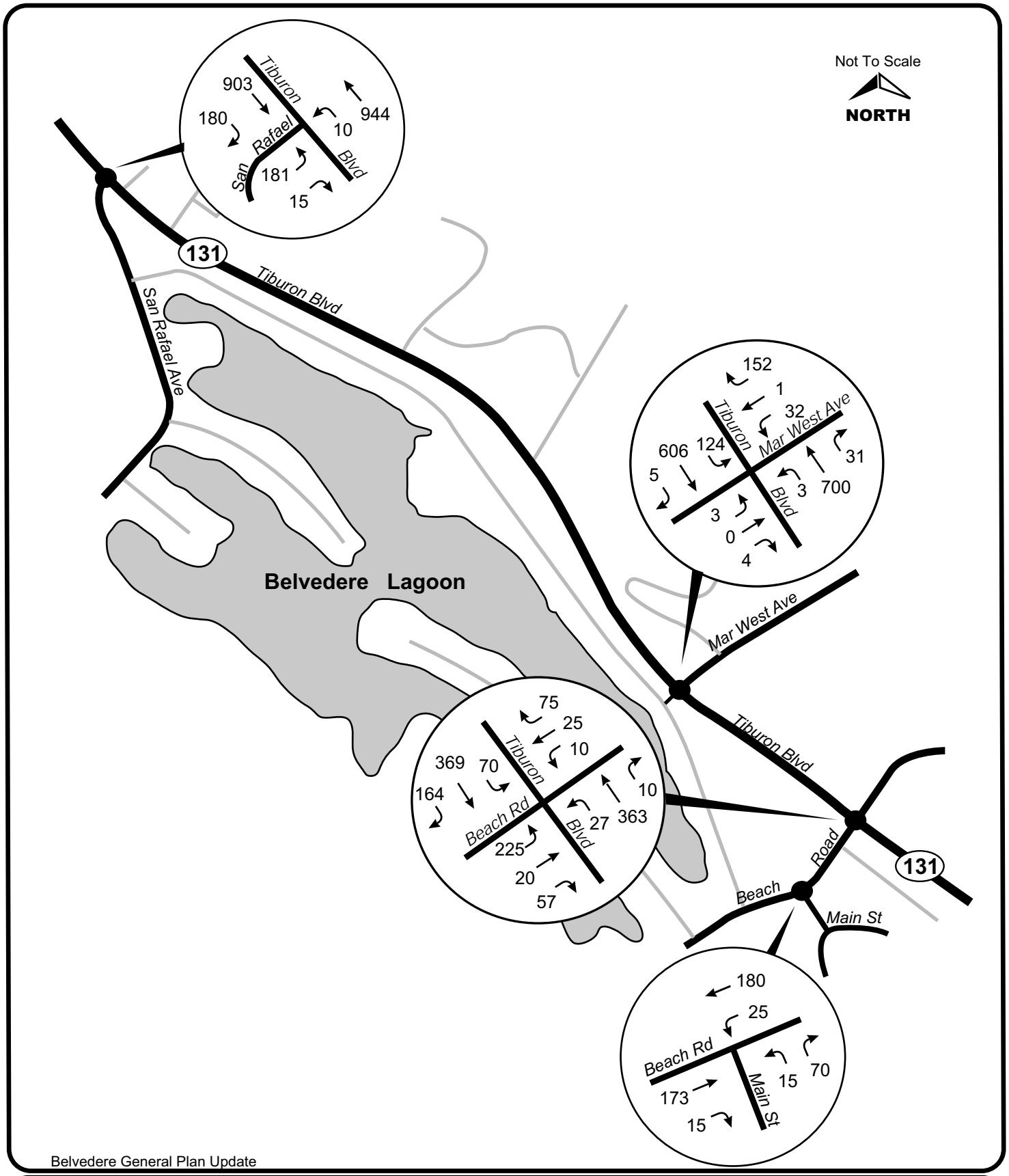

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Figure 10

2020 Weekday PM Peak Hour Volumes

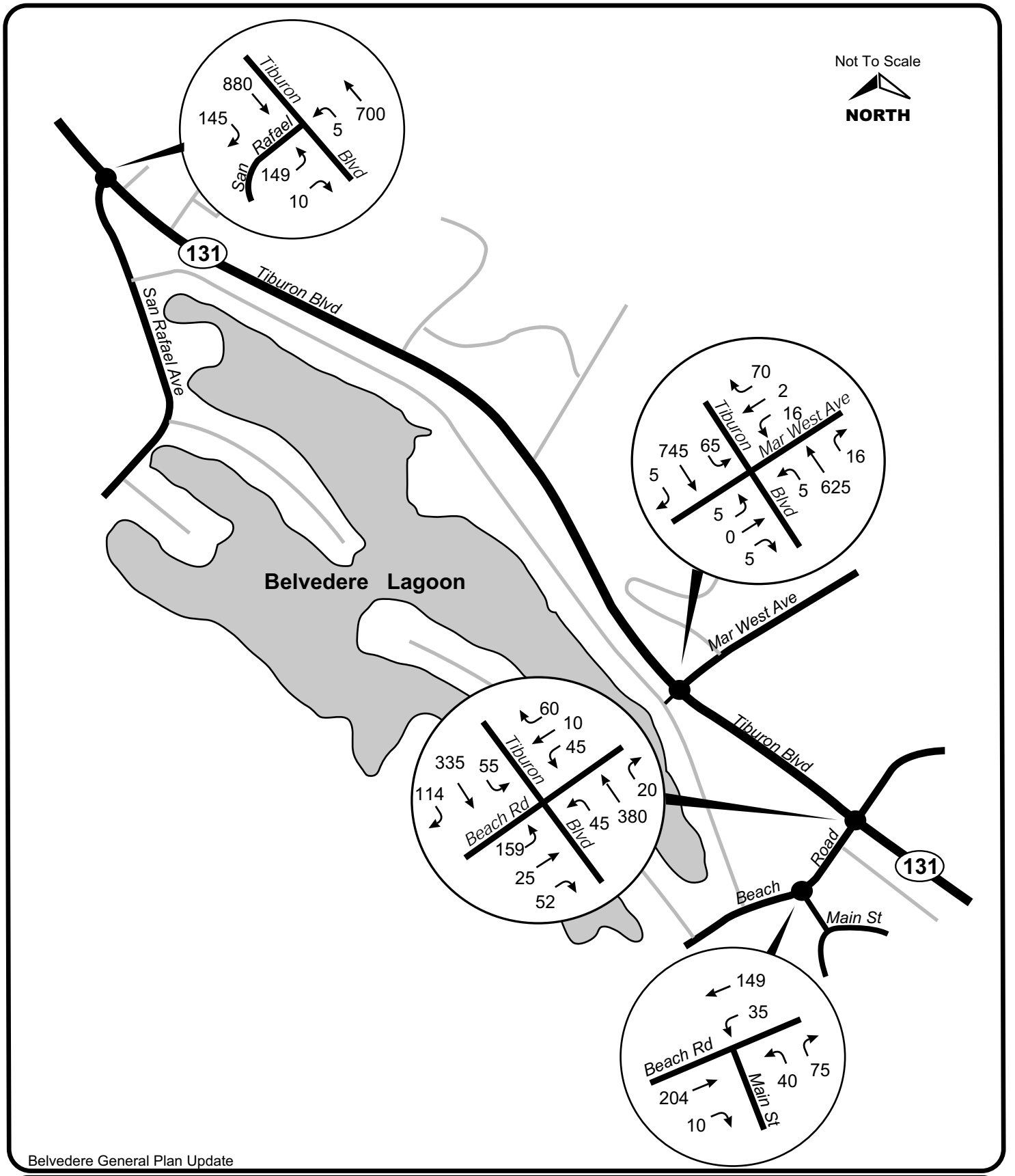

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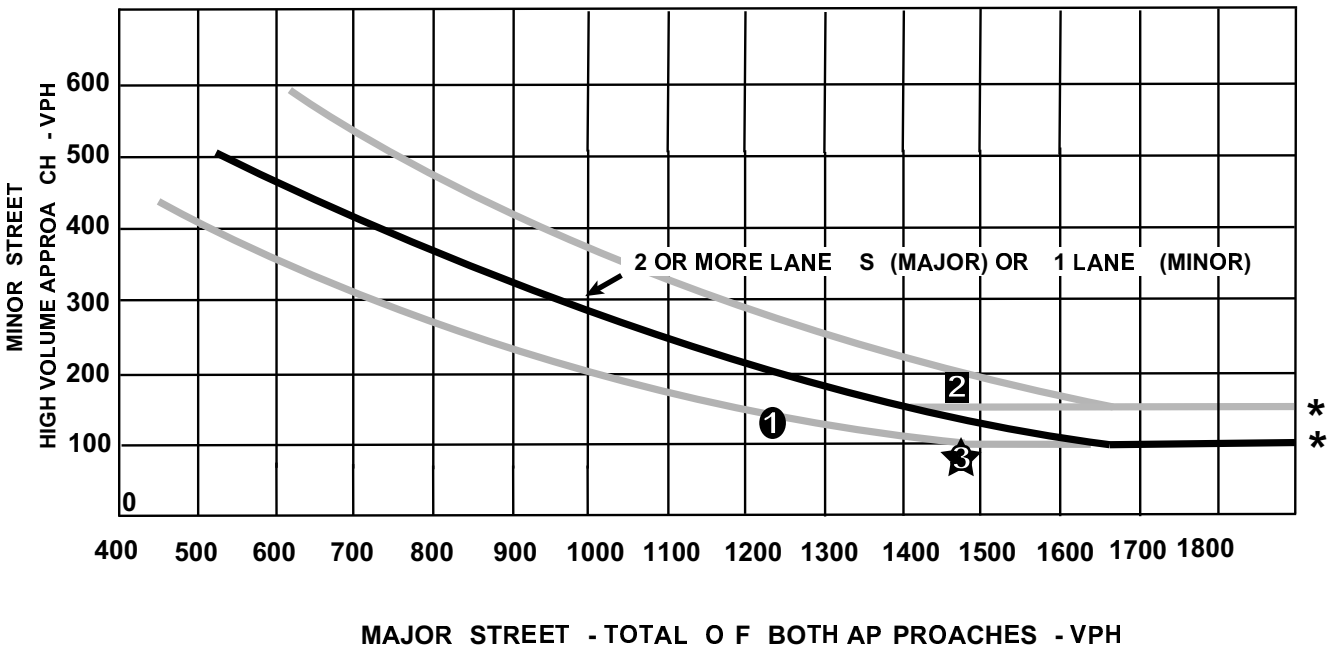
Figure 11

2020 Saturday
Peak Hour Volumes

PEAK HOUR VOLUME WARRANT #3
(Urban A rea)



1 - Year 2020 AM Peak Hour = 1220 vehicles on Tiburon Blvd/126 vehicles on Mar West St

2 - Year 2020 PM Peak Hour = 1469 vehicles on Tiburon Blvd/185 vehicles on Mar West St

3 - Year 2020 Saturday Peak Hour = 1461 vehicles on Tiburon Blvd/88 vehicles on Mar West St

*** NOTE**

150 VPH APPL IES A S THE LOWER THR ESHOLD VOLUME FOR A M INOR STREET APPROACH W ITH TWO OR MORE LANE S AN D 100 VPH APPL IES A S THE LOWER THRESHOLD VOLUME FOR A M INOR STREET APPROA CHING W ITH ONE LANE

Source: Year 2003 Manual or Uniform Traffic Control Devices, Federal Highway Administration

CRANE TRANSPORTATION GROUP

Figure A-1

Tiburon Blvd/Mar West St
Year 2020 Peak Hour Signal Warrants

CITY OF BELVEDERE

HOUSING ELEMENT UPDATE AND GENERAL PLAN UPDATE

INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Prepared for:

CITY OF BELVEDERE
450 SAN RAFAEL AVENUE
BELVEDERE, CA 94920-2336

Prepared by:

PMC®

2729 PROSPECT PARK DRIVE, SUITE 220
RANCHO CORDOVA, CA 95670

JUNE 9, 2010

LIST OF FIGURES

LIST OF TABLES

1.0 INTRODUCTION

A. PURPOSE OF THE INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

The City of Belvedere (city; Belvedere) is updating its General Plan and Housing Element. Based on the results of this Initial Study, the City has determined that the preparation of a mitigated negative declaration (MND) is the appropriate document for California Environmental Quality Act (CEQA) compliance (see State CEQA Guidelines Section 15070). The proposed General Plan Update is intended to reflect the wishes of Belvedere residents and decision-makers for the future development and operation of the city through the year 2030. The proposed Housing Element is designed to address the projected housing needs of current and future city residents and to comply with state law. The proposed Housing Element would sunset in the year 2014.

This document therefore is an Initial Study/Mitigated Negative Declaration (IS/MND) for evaluation of environmental impacts resulting from the implementation of the proposed City of Belvedere Housing Element Update and General Plan Update. A more detailed description of the project is found in Section II of this document.

B. TECHNICAL STUDIES

Technical studies referenced in this IS/MND are listed below. The technical studies are available at City Hall located at 450 San Rafael Avenue, Belvedere, CA 94920-2336 and on the City of Belvedere website (www.belvedere2030.org/Belvedere_2030/Home.html).

- Geologic Hazards Assessment, prepared by ENGEO Incorporated, November 11, 2009.
- Cultural Resource Evaluation, prepared by William Roop and Sally Evans Archaeological Resource Service, April 30, 2009.
- Noise Background Report and Noise Impact Analysis prepared by Ambient Air Quality and Noise Consulting, November 2009 and February 2010 respectively.
- Input to Belvedere Circulation Element, prepared by Crane Transportation Group, December 2009.
- Biological Technical Report, prepared by WRA Environmental Consultants, December 2008.

C. ACRONYMS USED

The following acronyms have been or may have been used in the preparation of this IS/MND:

ABAG	Association of Bay Area Governments
ac-ft	acre-feet
ADT	average daily trips
AF	acre-feet
ARB	Air Resources Board
asl	at sea level
ATCM	Airborne Toxics Control Measure

BAAQMD	Bay Area Air Quality Management District
BAOS	Bay Area Ozone Strategy
BCDC	San Francisco Bay Conservation and Development Commission
BLM	Bureau of Land Management
BLPOA	Belvedere Lagoon Property Owners Association
BMP	best management practices
BOE	Barrel of Oil Equivalent
BPD	Belvedere Police Department
BTLA	Belvedere-Tiburon Library Agency
BTRD	Belvedere-Tiburon Recreation Department
BTU	British Thermal Units
CAA	Clean Air Act
CAL ARP	California Accidental Release Prevention Program
CAL/EPA	California Environmental Protection Agency
Cal-ISO	California Independent System Operator
CalOSHA	California Occupational and Safety and Health Administration
CAP	Clean Air Plan
CARB	California Air Resources Board
CC&Rs	Conditions, Covenants, and Restrictions
CCAA	California Clean Air Act
CCR	California Code of Regulations
CCTS	Central California Taxonomic System
CDBG	Community Development Block Grant
CDC	California Department of Conservation
CDE	California Department of Education
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CESQG	Conditionally Exempt Small Quantity Generator
CFR	Code of Federal Regulations
cfs	cubic feet per second
CHP	California Highway Patrol
CIP	Capital Improvement Project
CIWMB	California Integrated Waste Management Board
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CO	carbon monoxide
CO2e	carbon dioxide equivalents
CRHR	California Register of Historic Resources
CTR	California Toxics Rule
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel
DEIR	Draft Environmental Impact Report
DFG	Department of Fish and Game
DHS	California Department of Health Services
DOI	Department of Interior
DTSC	Department of Toxic Substances Control
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EOC	Emergency Operations Center

EPA	Environmental Protection Agency
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FAR	floor area ratio
FCAAA	federal Clean Air Act Amendments
FEIR	Final Environmental Impact Report
FEMA	Federal Emergency Management Agency
FHA	Federal Highway Administration
FICON	Federal Interagency Committee on Noise
FIRM	Flood Insurance Rate Map
GIS	geographic information system
gpm	gallons per minute
HAP	hazardous air pollutant
HCP	Habitat Conservation Plan
HMBP	Hazardous Materials Business Plan Program
HSWA	Hazardous and Solid Waste Amendments
HWCL	Hazardous Waste Control Law
Hz	Hertz
IS	initial study
ISO	Insurance Services Office
JPA	Marin Hazardous and Solid Waste Joint Powers Authority
kW	kilowatt
LAFCO	Local Area Formation Commission
L_{dn}	day/night average noise level
L_{eq}	equivalent sound level
LOP	County Local Oversight Program
LOS	level of service

LUST	leaking underground storage tank
MBTA	Migratory Bird Treaty Act
MCL	maximum contaminant level
mgd	million gallons per day
MMWD	Marin Municipal Water District
MMRP	Mitigation and Monitoring Program
MND	mitigated negative declaration
MTBE	methyl tertiary butyl ether
MU	mixed use
MVA	mega volt-amps
MVEB	Motor Vehicle Emissions Budget
MW	megawatt
NAHC	Native American Heritage Commission
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NGVD	National Geodetic Vertical Datum
NIH	National Institute of Health
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOC	Notice of Completion
NOP	Notice of Preparation
NOx	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System Permit Program
NRCS	Natural Resources Conservation Service
OAP	Ozone Attainment Plan
OEHHA	California Office of Environmental Health Hazard Assessment
OES	Office of Emergency Services

OHP	Office of Historic Preservation
OPR	Office of Planning and Research
OSHA	Occupational Safety and Health Administration
PCB	polychlorinated biphenyls
PCE	perchloroethylene
PG&E	Pacific Gas and Electric Company
PM	particulate matter
ppb	parts per billion
ppm	parts per million
PUC	California Public Utilities Commission
RACMs	Reasonably Available Control Measures
RBSAP	Richardson Bay Special Area Plan
RCRA	Resource Conservation and Recovery Act
ROG	reactive organic gases
ROW	right-of-way
RUSD	Reed Union School District
RWQCB	Regional Water Quality Control Board
SCWA	Sonoma County Water Agency
SEMS	Standard Emergency Management System
SFBAAB	San Francisco Bay Area Air Basin
SFPD	School Facilities Planning Division
SHPO	State Historic Preservation Officer
SIP	State Implementation Program
SOI	Sphere of Influence
SPCC	Spill Prevention, Control and Countermeasure
SR	State Route
SRRE	Source Reduction and Recycling Element

SRA	State Responsibility Area
SWIS	Solid Waste Information System
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TAM	Transportation Authority of Marin
TAZ	traffic analysis zone
TCE	tetrachloroethene
TCU	transportation, communications, and utilities
TFPD	Tiburon Fire Protection District
TIP	Transportation Improvement Program
TMDL	Total Maximum Daily Load
TSP	total suspended particulates
TUHSD	Tamalpais Union High School District
UBC	Uniform Building Code
ULL	urban limit line
USACE	U.S. Army Corps of Engineers
USBOR	U.S. Bureau of Reclamation
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tank
VOC	volatile organic compound
WDR	Waste Discharge Requirement
WICC	Watershed Information Center and Conservancy
WTP	water treatment plant

2.0 PROJECT DESCRIPTION

A. PROJECT LOCATION AND SETTING

The City of Belvedere is located in southern Marin County (county) approximately 10 miles north of the Golden Gate Bridge on the Tiburon Peninsula. The city is surrounded by water in nearly every direction. It is flanked by Richardson Bay to the west and north, Belvedere Cove and Raccoon Strait to the south, and the Town of Tiburon to the east (see **Figure 1**). As a community consisting of two islands at the southwestern tip of the Tiburon Peninsula and a lagoon/landfill area linking the islands to the mainland, the city has a total area of 2.42 square miles containing 0.54 square miles of land and 1.89 square miles of water. The City of Belvedere is the smallest incorporated city in Marin County with an estimated population of 2,161 persons in 2008 (Department of Finance, 2009).

Belvedere is primarily a residential community with just a small fraction of the city devoted to commercial uses including offices and a handful of retail establishments. Regional access to the Tiburon Peninsula is provided by U.S. Highway 101 (U.S. 101), a major north-south freeway linking Marin County with Sonoma County (north) and San Francisco (south). There are two main gateways into the City of Belvedere: San Rafael Avenue at Tiburon Boulevard and Beach Road at Tiburon Boulevard. There is an additional point of entry to Belvedere at Lagoon Road and Tiburon Boulevard.

In addition to being surrounded by water, Belvedere also has an interior lagoon and two land "bridges" which connect the largest portion of the city to the rest of the Tiburon Peninsula. Belvedere (**Figure 2**) is in fact five distinct sub-areas consisting of the neighborhoods of Belvedere Island, Corinthian Island, the Lagoon Area, the West Shore Road Area, and the Commercial Area. Belvedere Island is the oldest historic portion of the city, with the largest land area in the city, and is the most varied in terms of topography and landforms. The Lagoon Area forms the second, flatter portion of the city which surrounds the interior waterway. The third neighborhood is formed on Corinthian Island facing Belvedere Cove where the island residents share borders with the Town of Tiburon. The West Shore Road Area is a geographically distinct neighborhood at the western base of Belvedere Island with many of the residences projecting out over Richardson Bay. The Commercial Area consists primarily of the "public square" at Beach Road and San Rafael Avenue and the Boardwalk Shopping Center which is split between the Belvedere and Tiburon jurisdictions (City of Belvedere, 2010c).

B. PROJECT BACKGROUND AND HISTORY

REQUIREMENT TO ADOPT A GENERAL PLAN

The general plan for any jurisdiction is a state-required legal document (Government Code Section 65300) that provides guidance to decision-makers regarding the conservation of resources and the future physical form and character of development for a city. The general plan is the official statement of the jurisdiction regarding the extent and types of development of land and infrastructure that will achieve the community's physical, economic, social, and environmental goals. The general plan expresses a city's goals and articulates the city's intentions with respect to the rights and expectations of the general public, property owners, community interest groups, prospective investors, and business interests. Although the general plan consists of individual sections, or "elements," that address specific areas of concern, it also embodies a comprehensive and integrated planning approach for the city.

A general plan must address issues related to physical development, growth, and conservation of resources in its planning area. A general plan:

- Outlines a vision for long-range physical and economic development and resource conservation that reflects the aspirations of the community.
- Provides strategies and specific implementing policies, programs, and actions that will allow this vision to be accomplished.
- Establishes a basis for judging whether specific development proposals and public projects are in harmony with general plan policies and standards.
- Allows city departments, other public agencies, and private developers to design projects that will enhance the character of the community, preserve and enhance critical environmental resources, and minimize hazards.
- Provides the basis for establishing and setting priorities for detailed plans and implementing programs such as the development codes, the capital improvement program, facilities and master plans, and redevelopment projects.

Under state law, each general plan must contain seven elements: Land Use, Circulation, Housing, Conservation, Open Space, Noise, and Safety.

Government Code Section 65303 permits local jurisdictions to formulate other elements, chapters, or sections which, in the "judgment of the planning agency," relate to the physical development of the city. These "permissive" elements, once adopted, are as legally binding as a mandatory element.

EXISTING BELVEDERE GENERAL PLAN

The city's current General Plan was adopted in 1994 and contains the following elements:

- Land Use
- Circulation
- Housing
- Open Space, Scenic Routes, and Conservation
- Environmental Hazards
- Noise

The General Plan also contained three exhibits: Existing Land Use, Future Land Use, and Circulation/Open Space. Primarily residential, the existing General Plan describes four general categories of land uses:

- Residential areas form the largest percentage with almost 92 percent of the land dedicated to housing. These residential areas include single-family residences and duplex or multi-family residences.
- Open spaces, along with recreational spaces and parks, constitute about 5 percent of the total land area.
- Commercial and office areas form less than 1 percent of the total area and are primarily combined as mixed uses with residential areas or as commercial strip development.
- Public facilities like churches and nursery schools occupy less than 1 percent of the total land area.

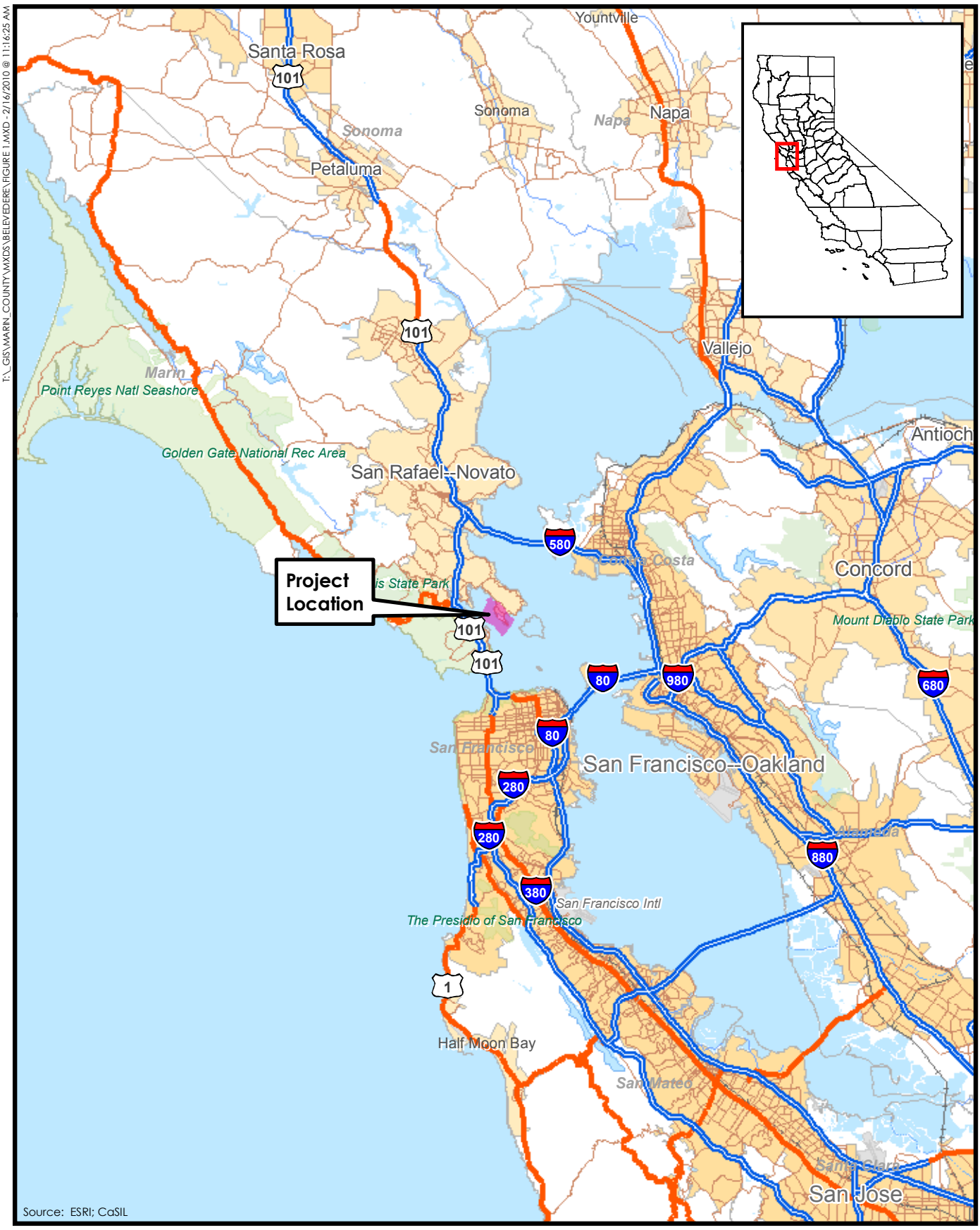


Figure 1
Regional Location Map

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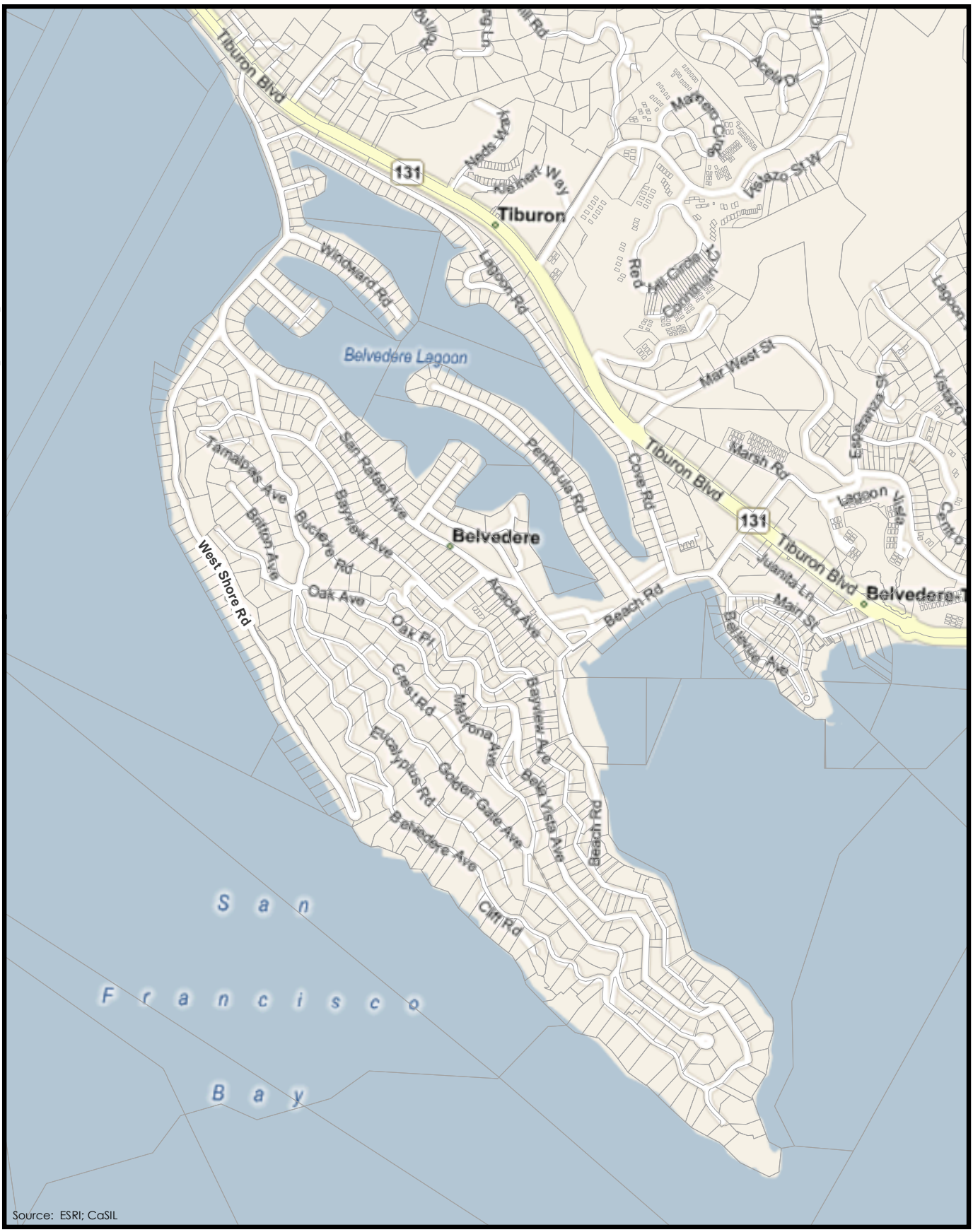

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Figure 2
Project Location Map

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C. COMPONENTS OF THE PROPOSED GENERAL PLAN

Belvedere's General Plan Update has been organized to contain the seven required elements noted above, but also incorporates additional elements that are relevant to the city. The General Plan elements are discussed below under "Components of the Proposed General Plan."

The proposed Belvedere 2030 General Plan (General Plan; General Plan Update; project) is a comprehensive update of the current 1994 General Plan. Elements, chapters, or sections of the existing General Plan have been reorganized by thematic topic for clarity and to avoid redundancy. The Belvedere 2030 General Plan is organized into the following chapters and sections:

Section 1: Introduction

Section 2: Belvedere's Physical Setting

Section 3: General Plan Elements

- **Chapter 1** Land Use Element
- **Chapter 2** Transportation and Circulation Element
- **Chapter 3** Housing Element (*contained in Volume 2 of the General Plan*)
- **Chapter 4** Sustainability and Resource Conservation Element
- **Chapter 5** Parks, Recreation, and Open Space Element
- **Chapter 6** Archaeological, Cultural & Historic Resource Preservation Element
- **Chapter 7** Community Design Element
- **Chapter 8** Environmental Hazards: Safety and Stability Element
- **Chapter 9** Noise Element

Section 4: Report Preparation and References

PROPOSED BELVEDERE 2030 GENERAL PLAN

The guiding vision for Belvedere's General Plan Update is to "preserve the special and unique sense of place of Belvedere while allowing changes that would enhance the community." The General Plan Update is just that — an update of the existing General Plan to bring it into conformance with today's standards without any major changes in policy direction. While the current success of Belvedere is acknowledged and enjoyed, exploring new opportunities is fundamental to the city's continued success. The General Plan Update charts a course for the future while setting forth strategies to sustain the many existing successes of the city.

Existing Land Use Conditions

Belvedere is predominantly a residential community, as shown in **Table 1** below.

TABLE 1
GENERAL PLAN LAND USES – CITY OF BELVEDERE – 2009

Use	Acres	Percentage of Total
Very Low Density Single Family Residential (1 to 2.5 units/acre)	168.21	11.9%
Low Density Single Family Residential (2.5 to 5 units/acre)	66.09	4.7%
Low Density Multi Family Residential (5 to 14.5 units/acre)	5.04	0.4%
Medium Density Multi Family Residential (5 to 20 units/acre)	9.20	0.7%
High Density Multi Family Residential (up to 35 units/acre)	0.84	<0.1%
Commercial	2.33	0.2%
Park/Public Facility	4.70	0.3%
Private Recreation	3.01	0.2%
Open Space (including open water)	1,149.06	81.5%
Church/School	0.65	<0.1%
TOTAL	1,409.13	100.0%

Source: City of Belvedere 2030 General Plan Update Land Use Element February 2010

Since adoption of the 1994 General Plan, the City has upgraded its parcel data system and has better information on the size of each parcel and therefore the amount of land actually within Belvedere's boundaries. In Belvedere's geographic information system (GIS), each parcel is now coded with the zoning, existing land use, and General Plan land use, and the most accurate information about the parcels, exact parcel sizes, and their land use designations is now known. Due to the accuracy in accounting for Belvedere property, the amount of land in the city changed from a previously perceived 1,345 acres (as depicted in the 1994 General Plan due to inferior mapping technology) to 1,408 acres. The most current information available was used to develop **Table 1**, which shows the current General Plan land use categories in the City of Belvedere (City of Belvedere, 2010b).

Proposed Land Use Conditions

The residential General Plan land use categories and density and intensity standards have not changed in this General Plan Update, but the document has been updated to note that there are both Zoning Districts as well as General Plan land use categories contained in the General Plan Update. This was not stated clearly in the 1994 version.

Another change from the 1994 General Plan to the proposed General Plan Update is the Land Use Map. In the 1994 Land Use Map, the density measurements for the residential categories were shown in gross acres. For the 2030 Land Use Map, the measurement was changed from gross acres to net acres, which resulted in a slight increase in the density ranges shown, although not an actual increase in the allowable density. The Low Density Single Family Residential category, for instance, now has a density of 1.0 to 3.0 units per net acre rather than 1.0 to 2.5 units per gross acre. Net acreage is measured including only the size of the actual developable parcels themselves, while gross acreage typically includes all acreage across a land use designation, including rights-of-way such as streets and sidewalks. Because Belvedere's street

system is not changing, nor are there large tracts of undeveloped land that are included in the total, the net acreage method of calculating density is more accurate. **Table 2** shows the proposed General Plan land use categories.

TABLE 2
PROPOSED GENERAL PLAN LAND USES – CITY OF BELVEDERE

Use	Acres	% Of Total
Single Family Residential (SFR)		
Low Density SFR (1.0 to 3.0 units/net acre)	167.44	11.89%
Medium Density SFR (3.1 to 6.0 units/net acre)	59.38	4.22%
High Density SFR (Over 6.0 units/net acre)	4.72	0.34%
Multi-Family Residential (MFR)		
Medium Density MFR (5 to 20 units/net acre)	13.41	0.95%
High Density MFR (up to 35 units/net acre)	0.84	0.06%
Commercial	2.33	0.17%
Park/Public Facility	5.20	0.37%
Private Recreation	24.10	1.71%
Open Space (Land)	8.59	0.61%
Open Space (Water)	1120.88	79.61%
Church/School	0.99	0.07%
TOTAL	**1407.88**	**100.0%**

Source: City of Belvedere 2030 General Plan Update Land Use Element February 2010

FUTURE CONDITIONS: BELVEDERE IN YEAR 2030

Over the life of the General Plan, the Association of Bay Area Governments (ABAG) anticipates that Belvedere will grow to have 980 households, provide 1,150 jobs, and have a population of 2,200 persons. These growth trends are detailed in **Table 3**.

TABLE 3
BELVEDERE GROWTH PROJECTIONS

	2000	2010	2020	2030
Total Population	2,125	2,100	2,200	2,200
Households	956	960	980	980
Jobs	1,150	1,130	1,140	1,150

Source: ABAG, 2007

Future Residential Development

There are very few residential land use changes proposed in the General Plan Update. Any new housing development would likely occur in three main areas: (1) new single-family homes developed on vacant properties (2) new or converted second units and (3) intensification of residential properties adjacent to commercially designated land.

The Housing Element contains policies aimed at increasing the number of second units in the city, and it also contains a policy that would increase the allowable residential density on properties that are adjacent to commercially designated properties (from a maximum of 20 units per acre to a maximum of 35 units per acre). However, that intensification impacts two properties, only one of which is likely to redevelop during the General Plan time horizon of 20 years, that is, the property at 7 Beach Road. The allowed intensification could increase the number of units on the property from five to nine.

Future Commercial Development

There are few land use changes proposed in the General Plan Update that impact Belvedere's few commercially designated properties. Only one policy in the Land Use Element—to revise the Belvedere/Tiburon city limit line to create regularly shaped parcels and reduce inter-jurisdictional complications—could have the potential to enable a small amount of additional development on the Boardwalk Shopping Center site. However, it is generally not expected that new commercial square footage would be added to Belvedere, and any new jobs created would be in existing business spaces and home offices.

BELVEDERE 2030 GENERAL PLAN ELEMENTS

The Belvedere 2030 General Plan represents an update from the 1994 General Plan with new goals and policies included in all the elements of the General Plan. However, the policies are mainly refinements. The new chapters and policies are briefly described below.

Land Use Element

The policies contained in the Land Use Element are intended to preserve the special and unique sense of place of Belvedere while allowing for the possibility of changes that would enhance the community. The policies in this element support and continue the existing land use patterns with minor modifications to allow for the potential of more intensive residential development adjacent to the city's commercially zoned properties. Policies were also crafted to address issues such as managing lot mergers, minimizing the need for variances and exceptions to zoning standards, and changing regulations to respond to the new Federal Emergency Management Agency (FEMA) requirements in the Belvedere Lagoon neighborhood.

The following Land Use Element Goals, Policies, and Action Items are identified in the analysis provided in this IS/MND because they provide mitigation for environmental impacts resulting from General Plan implementation:

Policy LU-1.1: *Building shall be permitted only on existing legal lots of record or new lots of legal size for the residential zone in which they lie.*

Policy LU-1.2: *Residential densities shall be controlled to preserve the character of Belvedere. The two single-family zones–R-15, requiring 15,000 sq. ft. of lot area per unit, and R-1, requiring 7,500 square feet of lot area per unit–are retained.*

Policy LU-1.3: *New construction is to be in harmony with existing development.*

Action LU-1.3.1: *To ensure environmental quality and maintain the density and character of the neighborhoods, the city shall apply design review standards in addition to controls on height, bulk, floor areas, and setbacks.*

Policy LU-1.4: *Views of the Bay, San Francisco, and the mountains from public spaces are to be retained wherever possible.*

Action LU-1.4.1: *The Zoning Ordinance includes provisions for the dedication of a view site or easement.*

Policy LU-1.5: *Maintain privacy between neighbors.*

Policy LU-1.6: *Development standards and Design Review standards shall support the vision and goals of the General Plan.*

Action LU-1.6.1: *The city should periodically review its Zoning and Design Review Ordinances to determine if revisions are warranted, and to give the Planning Commission and City Council more specific standards by which to review proposed building projects.*

Policy LU-1.7: *Make needed "housekeeping" amendments in the Municipal Code to resolve minor issues and inconsistencies.*

Action LU-1.7.1: *Revise the Subdivision Ordinance to remove the 60-day processing time unless an Environmental Impact Report is required.*

Action LU-1.7.2: Consider zoning amendments to clarify lot coverage requirements in the R-2 and R-3 zoning districts.

Action LU-1.7.3: For both conforming and nonconforming structures destroyed by fire or other natural disaster, allow repair, restoration, or replacement (but not enlargement) without Design Review.

Policy LU-1.8: *Create consistent development standards for waterfront maritime improvements.*

Action LU-1.8.1: Prepare a master plan for all shoreline properties for the installation of docks, decks, boatlifts, and floats.

Policy LU-2.1: *Belvedere Island is an identifiable geographical entity and its lots share similar topography, views, access, and vegetation and constitute a coherent zone. It is the intent of the General Plan that city policies and regulations maintain Belvedere Island's integrity as a single zone and accommodate the Island's variety and distribution of lot sizes, shapes, and features.*

Policy LU-2.4: *The City should establish a maximum house size for Belvedere Island.*

Action LU-2.4.1: *The Planning Commission shall further study the issue and establish a maximum house size for Belvedere Island.*

Policy LU-3.1: *Ensure that land use designations and development standards can accommodate housing goals, policies and programs outlined in the Housing Element of the General Plan.*

Action LU-3.1.1: *Revise the Municipal Code and Zoning Map to be consistent with and support Housing Element goals, policies and programs.*

Policy LU-4.1: *Grant variances only for the purpose of bringing the development capacity of a property with unusual configuration on par with that of other properties in the same district. Variances shall not be granted for the express purpose of allowing development capacity to exceed what would otherwise be allowed.*

Action LU-4.1.1: *Revise the Municipal Code to clarify that variance shall not be granted for purposes of allowing greater floor area than base regulations would otherwise allow.*

Policy LU-5.1: *The open water surrounding Belvedere is to be kept open in perpetuity.*

Action LU-5.1.1: *The city shall continue to participate in the Richardson Bay Special Area Plan (RBSAP). The city incorporates the policies of the RBSAP into this General Plan.*

Action LU-7.1.2: *Encourage any future redevelopment of the Boardwalk Shopping Center to be as respectful to the privacy of neighboring properties as possible.*

Policy LU-9.2: *Continue to locate higher-density development near activity centers that can be served efficiently by public transit and alternative transportation modes.*

Residential Land Use

As previously mentioned, a slight increase in the density ranges is proposed in the General Plan Update due to a change of measurement from gross acres to net acres. The proposed General Plan Planning Area for the city includes the following density standards for the city's residential land use categories:

a. Low Density Single Family Residential (R-15 zone) — 1 to 3.0 dwelling units per net acre. 2.7 to 8.1 persons per acre. The total floor area permitted, without an Exception Permit, is 33% of the lot size.

b. Medium Density Single Family Residential (R-1L — 3.1 to 6.0 dwelling units per net acre. 8.2 to 16.2 persons per acre. The total floor area permitted,

	& R-1W zones)	without an Exception Permit, is 50% of the lot size in the R-1L (Lagoon Area) and 40% of lot size in the R-1W (West Shore Road) zone.
c.	High Density Single Family Residential (R-1C zone)	Over 6.0 units per net acre. More than 16.3 persons per acre. The total floor area permitted, without an Exception Permit, is 50% of the lot size.
d.	Medium Density Multi Family Residential (R-2 & R-3/R-3C zones)	5 to 20 dwelling units per gross acre. 13.5 to 54 persons per acre.
e.	High Density Multi Family Residential (R-3 & R-3/SC-H overlay)	Same as R-3, except density may be increased up to 35 dwelling units per gross acre (95 persons per acre) upon Planning Commission's findings of benefit to the community and lack of environmental impact, or on residential properties adjacent to commercially designated properties.

Commercial Land Use

Commercial uses within the city consist of the portion of the Boardwalk Shopping Center which lies within the city boundary and the office spaces located in the residential area found along Beach Road. Most neighborhood shopping and service needs are met in the other shopping areas of the Tiburon Peninsula outside of Belvedere and no industrial uses are permitted within the city (City of Belvedere, 2010b). Proposed General Plan Update density and intensity standards for commercial designated area within the city are as follows:

Commercial (C-1 zone)	Floor area ratio not in excess of 1:1. Not over 50% of lot covered. Minimum lot size of 5,000 square feet.

The proposed General Plan Update Commercial land use category allows a range of business types including retail, services, restaurants, offices, and medical facilities. Industrial uses, single-family dwellings, two-family dwellings (Low Density Residential), and motor courts are not allowed.

Park/Public Facilities Land Use

The proposed General Plan Park/Public Facilities land use category includes city municipal offices, city parks, and municipal/utility facilities. Included among the city's community facilities are City Hall and the Community Center, as well as the city's Corporation Yard. Park facilities include Community Park adjacent to City Hall, Land Company Park, Tom Price Park, and Cove Beach.

Open Space Land Use

Most of the open space uses in Belvedere are related to San Francisco Bay. The General Plan Open Space land use category is intended for land voluntarily designated and dedicated by its owner, public or private, to be used in perpetuity for natural scenic open space. Uses include enjoyment of natural scenic beauty, wildlife habitat, public and private gardens, paths and uncovered walkways, and like uses consistent with preservation of natural scenic beauty. Outdoor recreational use, including parks and beaches, and like uses consistent with preservation of natural scenic beauty, may also be allowed with a use permit from the Planning Commission.

Private Recreation Land Use

There are two major yacht clubs and the Belvedere Sailing Society located in Belvedere. The two yacht clubs have General Plan Private Recreation land use designations. This designation allows recreational uses for public or private purposes, including a beach, playground, boardwalk, dock, pier, wharf, or other facilities for boats.

Church/School Land Use

Educational uses and places of worship are included in the General Plan Churches/Schools land use category.

Circulation and Transportation Element

Belvedere has a long-standing policy of limiting substantial change in the current road network. Belvedere's street system provides necessary access to housing and for emergency vehicles, but the narrow roads can easily become obstructed by roadwork, construction traffic, delivery vehicles, etc. Transportation and circulation issues addressed in the General Plan include ensuring basic transit access, providing adequate pedestrian lanes and bicycle routes, managing with limited parking, minimizing congestion on Tiburon Boulevard, slowing fast traffic on streets in Belvedere, and maintaining and supporting ferry service.

The following Circulation and Transportation Element Goals, Policies, and Action Items are identified in the analysis provided in this IS/MND because they provide mitigation for environmental impacts resulting from General Plan implementation:

Policy TC-1.1: *Maintain the existing city policy to keep the present road network intact (as shown on Exhibit 1, Circulation Map).*

Action TC-1.1.1: *Maintain all roads within the existing roadway system in full service condition. If roads are damaged by slides or other natural disasters, they should be restored to full service as soon as it is practical.*

Action TC-1.1.2: *Ensure that two means of ingress and egress are provided for every residence, except for very short cul-de-sacs.*

Policy TC-1.2: *Improvements made to streets should focus on: (1) Improving the roadway safety; (2) Improving sight distance; (3) Improving pedestrian circulation and safety; and (4) Improving parking conditions rather than increasing roadway capacity.*

Action TC-1.2.1: *Conduct traffic studies as needed to address safety considerations.*

Action TC-1.2.2: *Continue to maintain sight lines and maintain a 10-foot clearance minimum for emergency vehicles; Allow parking only in certain areas, away from critical sightlines; and have development projects subject to sight-line review by a public works engineer.*

Action TC-1.2.3: *Where feasible, create bicycle lanes that are directed at destination points.*

Action TC-1.2.4: *Install sidewalks where feasible, particularly on those streets and neighborhood blocks where sidewalks currently exist.*

Action TC-1.2.5: *Investigate a range of creative traffic calming measures to control speeding, particularly along San Rafael Avenue and Beach Road. Speed tables, traffic islands and circles, and varied paving should all be considered, specific to location.*

Action TC-1.2.6: *Promote "Share the Road" strategies in areas with high concentrations of bicyclists. Post "share the road" signage that specifies bicyclists must ride single-file and stop at stop signs and that automobiles need to drive slowly and allow ample clearance when passing bicyclists.*

Action TC-1.2.7: *Implement "Complete Streets" policies in roadway design that foster equal access by all users.*

Action TC-1.2.8: *Distribute "Share the Road" literature to local bicycle rental concessions (The Marin County Bicycle Coalition produces literature that could be used for this purpose.)*

Action TC-2.1.3: *Tandem parking (end-to-end spaces) shall not be considered to fulfill the requirement for more than one of the required parking spaces in residential areas.*

Action TC-2.1.4: *Encourage the creation of new on-street parking where it is possible to do so, either within the public right-of-way or partially on private property.*

Policy TC-3.1: *Augment existing bike facilities to accommodate more users.*

Action TC-3.1.1: *Where feasible, incorporate bicycle-friendly intersections into any new street design. Include safe and convenient bicycle and pedestrian access in all transportation improvement projects, and ensure that road improvements are required if they impact the safety and convenience of walking or biking.*

Action TC-3.1.2: Due to the safety concerns at this intersection, work *with the Town of Tiburon to implement bicycle and pedestrian safety improvements at the San Rafael Avenue/Tiburon Boulevard crosswalk. Improvements could include: (1) installation of Bicycle Loop Detectors (BLD) to help cyclists trigger a traffic signal; (2) installation of contrasting pavement texture and color to distinguish between the crosswalk and bikeway and roadway pavement; (3) provision of a raised intersection to help slow traffic; (4) installation of in-pavement lighting of crosswalk to preserve the visual prominence of the crosswalk at night; or (5) the installation of bollards to slow cyclists approaching the intersection.*

Policy TC-3.2: *Maintain availability of all public lanes and stairways in a manner consistent with other public streets.*

Action TC-3.2.1: *Encourage pedestrian activity and reduction in auto use by further improving the* public lanes and stairways *for safe pedestrian use. Protect and, when possible, expand the locations of* lanes and stairways.

Action TC-3.2.2: *Public lanes and stairways should be improved as part of the City's capital improvement projects and as a part of conditions of approval for*

development applications, as appropriate. The lanes and stairways *should receive regular maintenance.*

Action TC-3.2.3: *Investigate providing lighting for* lanes and stairways *at each end of the lanes, as well as lit pedestrian-level lighting such as bollards along lanes where feasible. Lighting should be directed downwards to minimize impacts on nighttime views, impacts to adjacent properties, and to preserve historical character of the* lanes and stairways.

Policy TC-4.1: *Support and promote ride sharing and car sharing programs.*

Action TC-4.1.1: *Encourage the creation of a system to facilitate informal carpools for Belvedere commuters.*

Policy TC-4.2: *Support employee commute alternative programs to reduce single-occupant driving and vehicle miles travelled.*

Action TC-4.2.1: *Work with surrounding agencies (i.e., Tiburon, Mill Valley, etc.) and employers to study the feasibility of a private shuttle collective to bring employees, residents, commuters, and visitors between Highway 101 and Belvedere.*

Policy TC-4.3: *Support continued operation of ferry service to and from Tiburon.*

Action TC-4.3.1: *Cooperate jointly with the Town of Tiburon in taking a proactive role in maintaining ferry service. If service is threatened with disruption, the cities should have a contingency plan for the continuation of the service.*

Policy TC-4.4: *Minimize congestion on Tiburon Boulevard.*

Action TC-4.4.1: *Work with the Town of Tiburon and the Reed Union School District to develop feasible measures to reduce vehicle congestion near schools during the morning drop off and afternoon pick up in order to reduce congestion and improve air quality and safety.*

Action TC-4.4.2: *Support a county-wide "Safe Routes to Schools" policy and support any school district transit plans to reduce automobile trips to (and congestion surrounding) local schools.*

Action TC-4.4.3: *Work with the Town of Tiburon and Caltrans to improve the signal timing at the Tiburon Boulevard/Trestle Glen intersection to reduce congestion and improve air quality and safety.*

Action TC-4.4.4: *Work with neighboring cities and transit providers to increase both the frequency and types of transit services available to Belvedere residents and visitors.*

Action TC-4.4.5: *Give funding preference to investment in public transit and alternative modes of transportation over investment in infrastructure solely for private automobile traffic.*

Housing Element

The Housing Element provides an analysis of the community's housing needs for all income levels, as well as strategies to respond to those needs. The Housing Element identifies and analyzes existing and projected housing needs for all economic segments of the community and provides goals, policies, quantified objectives, and scheduled programs to preserve, improve, and develop housing. The element also identifies "adequate sites" that are zoned and available within the seven-year housing cycle to meet the city's fair share of regional housing needs at all income levels (17 residential units).

Parks, Recreation, and Open Space Element

The policies contained within the Parks, Recreation, and Open Space Element were written to meet the goals of maintaining and improving Belvedere's public services, facilities, and capital improvement projects to meet the needs of the community and assure a high quality of life for Belvedere residents. The element supports the continued provision of neighborhood parks and recreational facilities to serve existing and new residents, and the coordination with the Town of Tiburon to provide future facilities that can serve both jurisdictions.

The following Parks, Recreation, and Open Space Element Goals, Policies, and Action Items are identified in the analysis provided in this IS/MND because they provide mitigation for environmental impacts resulting from General Plan implementation:

Policy Rec-1.3: *Maintain existing public access to the shoreline. Existing access is satisfactory and should not be diminished. Existing access consists of pathway along San Rafael Avenue, sidewalk along Beach Road, open shoreline on tide lots in Belvedere Cove, and the steps of the Harry B. Allen Lane to Belvedere Cove.*

Policy Rec-1.4: *Maintain views from Belvedere's scenic streets, especially San Rafael Avenue and Beach Road.*

Policy Rec-2.1: *Open space can be secured through a variety of means, including purchase, dedication of land, transfer of development rights, view easements, or view corridors. Any of these methods should be considered as appropriate.*

Policy Rec-2.4: *Consider enhancements and the addition of facilities to Tom Price Park.*

Policy Rec-3.1: *Coordinate with the Town of Tiburon on long-range planning for public spaces and the development of new facilities.*

Action Rec-3.1.1: *Support the creation of a Joint Recreation and Open Space Master Plan with the Town of Tiburon.*

Action Rec-3.1.2: *Consider the development of additional facilities, such as a senior center, teen recreation center, or other public facilities that could be located on available land in Tiburon, but serve the combined population of Belvedere and Tiburon.*

Action Rec-3.1.3: *Coordinate with the* Belvedere-Tiburon Joint Recreation Department *to provide space for existing recreation programs.*

Action Rec-3.1.4: Explore opportunities for partnerships with other organizations to create more indoor meeting/gathering spaces and a variety of activities.

Policy Rec-3.2: Continue to coordinate with the Town of Tiburon in preserving open space in Tiburon that has a major visual impact on the scenic views of the residents of Belvedere. Efforts should be made to work with other neighboring communities in their efforts to preserve open space areas that are visible from Belvedere.

Policy Rec-3.3: Support the continued operation of the Belvedere-Tiburon Library at its current location.

Sustainability and Resource Conservation Element

The Sustainability and Resource Conservation Element provides a comprehensive policy framework to guide the City's sustainability ("green") efforts and provides a foundation upon which to build future programs and practices through the life of the General Plan. The element contains policies intended to coordinate multiple approaches to sustainability, including reducing greenhouse gas emissions, preparing for potential impacts of global climate change, and protecting biological resources.

The following Sustainability and Resource Conservation Element Goals, Policies, and Action Items are identified in the analysis provided in this IS/MND because they provide mitigation for environmental impacts resulting from General Plan implementation:

Action SUST-1.1.1: Conduct water and energy audits on remodels and new houses. Energy audits required for all new or remodeled construction would both save money for property owners and improve the City's ability to reduce its carbon footprint.

Action SUST-1.2.1: Require water and energy use audits as part of remodels, additions, and major re-landscaping projects.

Action SUST-1.2.4: Encourage or require the highest level water saving devices to be installed for remodels and new homes.

Action SUST-1.2.5: Encourage new residential construction to have roofs that are strong enough for a solar installation ("solar ready roof").

Policy SUST-2.2: Limit the hours of operation of outdoor lighting.

Policy SUST-2.5: Require the use of technology such as cool roofs, cool pavements, and strategically placed shade trees.

Policy SUST-5.1: Develop Construction and Demolition Recycling Ordinance specific to Belvedere's conditions that will require the salvage, reuse, and recycling of construction debris at all construction sites.

Policy SUST-5.2: Work with the City's solid waste provider to expand recycling services offered to the community.

Action SUST-5.2.1: Consider a composting program alongside the recycling program.

Action SUST-5.2.2: Provide education and publicity about reducing waste and available recycling services.

Action SUST-5.2.3: Provide interior and exterior storage areas for recyclables and green waste and adequate recycling containers located in public areas.

Policy SUST-6.1: Develop community wide water use reduction benchmarks in conjunction with the Marin Municipal Water District (MMWD)*, and a mechanism to inform the community of on-going progress.*

Action SUST-6.1.1: Provide education about water conservation and available programs and incentives.

Policy SUST-6.2: Develop water conservation measures for municipal operations and throughout the community.

Action SUST-6.2.1: Work cooperatively with MMWD to devise a comprehensive water conservation strategy and participate in area-wide water conservation outreach programs.

Action SUST-6.2.2: Amend the Municipal Code to adopt MMWD's Ordinance Number 414, Water-Efficient Landscape Ordinance, addressing the AB 1881 water conservation requirements.

Policy SUST-6.3: Facilitate water recycling for use on applications where potable water is not required, for water intensive uses such as fountains and water features.

Action SUST-6.3.1: Allow for the use of grey water for irrigation and other suitable uses to decrease the amount of potable water needed by the community.

Action SUST-6.3.2: Consider the installation of *infrastructure to deliver and use reclaimed water for landscape irrigation on public property.*

Policy SUST-6.4: Control construction related run-off for purposes of water conservation and control of pollutants.

Policy SUST-6.5: Encourage low-impact development practices that maintain the existing hydrological character of the site to manage stormwater and protect the environment.

Policy SUST-7.1: Reduce vehicle miles traveled by 15 percent.

Action SUST-7.1.1: Increase use of alternative fuels and transportation technologies in the public sector and encourage the same in the private sector.

Action SUST-7.1.2: Improve existing bike and pedestrian pathways and add new paths where feasible.

Action SUST-7.3.1: Enforce State idling laws for commercial vehicles, including delivery and construction vehicles.

Action SUST-7.4.5: Require carpooling and shuttles for employees of larger construction projects.

Policy SUST-8.1: Improve access to and frequency of public transportation that serves Belvedere residents and businesses.

Action SUST-8.1.1: Give funding preference to investment in public transit over investment in infrastructure for private automobile traffic.

Action SUST-8.1.3: Reduce minimum parking requirement for new buildings that are close to public transportation.

Policy SUST-8.2: Improve access to bicycle and pedestrian networks.

Action SUST-8.2.1: Create bicycle lanes and walking paths where feasible that are directed at destination points.

Action SUST-8.2.2: Encourage pedestrian activity and reduction in auto use by further improving the public steps and lanes for safe pedestrian use. Protect and, when possible, expand the locations of lanes.

Policy SUST-9.2: Support and facilitate the use of bicycles for non-recreational uses (i.e., commuting).

Action SUST-9.2.1: Provide adequate, convenient and secure bike parking at public and private facilities and destinations when appropriate.

Action SUST-9.2.3: Augment existing bike facilities to accommodate more users.

Action SUST-9.2.4: Incorporate bicycle-friendly intersections into any new street design, Include safe and convenient bicycle and pedestrian access in all transportation improvement projects, and ensure that road improvements are not required if they impact the safety and convenience of walking or biking.

Policy SUST-10.1: Remain updated on the status of potential avoidance and mitigation measures related to potentially endangered and special status species.

Policy SUST-10.2: Regulate and mitigate the impacts of pile replacement, installation and reinforcement for structures built over water and installation and expansion of piers, docks and boat hoists.

Policy SUST-10.3: Avoid impacting, minimize disruption of, or restore native oyster populations when found in or near a project area

Policy SUST-10.4: Protect eelgrass colonies and individual eelgrass plants.

Policy SUST-10.5: Regulate and mitigate the impacts of residential construction (remodeling, expansions, and new construction) and public park redevelopment on properties in or adjacent to wetland and riparian habitat.

Policy SUST-10.6: Ensure protection of sensitive habitat when authorizing dredging of existing channels, potential dredging of the West Shore Channel, shoreline stabilization, and sea wall maintenance and replacement.

Policy SUST-11.1: Manage the Lagoon using the most effective, environmentally friendly methods available, considering the waters of the Lagoon empty into Richardson Bay.

Action SUST-11.1.1: Continue to investigate ways to manage the Lagoon using the most effective, environmentally friendly methods available.

Action SUST-11.1.2: Encourage the use of non-toxic weed and pest controls on lawns and landscaping, particularly in areas surrounding the Lagoon.

Action SUST-11.1.3: Encourage minimizing the use of fertilizers, particularly in areas surrounding the Lagoon.

Policy SUST-12.1: Protect existing trees and encourage the planting of new trees.

Policy SUST-12.2: Protect the local tree canopy as habitat for nesting birds and survey trees slated for removal for nesting birds prior to permit issuance.

Policy SUST-12.3: Protect oak woodlands.

Policy SUST-12.4: Support the preservation of existing regional land conservation areas (in adjacent Tiburon and unincorporated Marin County areas) that provide carbon sequestration benefits, such as those with tree cover.

Policy SUST-12.5: Evaluate development applications for possible adverse impacts to special status birds and bats.

Policy SUST-13.1: Utilize the thresholds of significance for construction-related criteria pollutant emissions as the absence/presence of Bay Area Air Quality Management District performance-based best management practices. As these best management practices may change over time at the discretion of the Bay Area Air Quality Management District, District staff shall be consulted on a case-by-case basis in order to ensure the most recent best management practices are used.

Archaeological, Cultural, and Historic Resource Preservation Element

The Archaeological, Cultural, and Historic Resource Preservation Element addresses the protection and sustainability of Belvedere's rich history. Strategies provide for the recognition of historic and archaeological resources, the careful treatment of cultural resources, and the preservation of historic buildings in accordance with state policy and regulations. Goals and policies presented within this element are intended to recognize, maintain, and protect the community's unique historical, cultural, and archaeological sites and structures.

The following Archaeological, Cultural, and Historic Resource Preservation Element Goals, Policies, and Action Items are identified in the analysis provided in this IS/MND because they provide mitigation for environmental impacts resulting from General Plan implementation:

Policy Pres-2.1: Create and maintain tools to alert residents and City Staff of the potential existence of historic resources, including a Historic Resource Sensitivity Map. This will ensure that future development applications are reviewed for potential impacts to potential historic resources.

Action Pres-2.1.1: Maintain an up-to-date list of Buildings with Historic designation in Belvedere (Belvedere Historic Resources Inventory).

Action Pres-2.1.2: Maintain an up-to-date Directory of Historic Properties from the State Office of Historic Preservation (State Historic Resources Inventory).

Action Pres-2.1.3: Maintain an up-to-date Historic Resource Sensitivity Map. Utilize the map to educate the community about existing and potential historic resources and to determine which properties should be examined for their potential to be eligible for listing on either the local or state Historic Resource Inventories when a development application is received on the parcel.

- *High sensitivity parcels: Require that a formal historic resource assessment be completed to determine if the resource is eligible for listing. (DRP form 523A and B to be completed by an Architectural Historian)*

- *Medium sensitivity parcels: Require that an informal assessment be completed to determine if the resource appears to be eligible for listing. Informal assessment could include information gathered from property owner, City or County records, Landmarks Society, State Office of Historic Preservation, etc.*

Policy Pres-2.2: Consider zoning variances and exceptions for properties on the Historic Resources Inventory that can encourage the continued use (and appropriate expansion) of a historic structure that may not meet the current zoning code standards in terms of required setbacks, building height, etc.

Policy Pres-2.3: Develop standard mitigation measures that, when followed, can reduce the impacts to historic resources to a less-than-significant level.

Policy Pres-3.1: Continue to protect cultural, archaeological, and paleontological resources.

Action Pres-3.1.1: Encourage property owners who have encountered archaeological or cultural resources on their parcel to avoid the resource if at all possible, followed by minimizing the impact to the resource, and resource relocation as a last option.

Action Pres-3.1.2: Require that all archaeological or cultural resource surveys or reports be filed with the Northwest Information Center (NWIC) at the conclusion of the work.

Action Pres-3.1.3: Develop a standard set of archaeological and cultural resource conditions of approval that can be applied to all new development projects that will apply in the event of a discovery.

Action Pres-3.1.4: Develop standard mitigation measures that, when complied with, can reduce the impacts to archaeological or cultural resources to a less-than-significant level.

Action Pres-3.1.5: Locate and/or design development to avoid impacts on sites with identified archaeological resources by placing buildings to avoid the site, incorporating the site into a permanent open space area, covering the site with a layer of soil, deeding the site as a permanent conservation easement, or taking other actions recommended by the archaeologist, as approved by the City.

Action Pres 3.1.6: In the event unanticipated paleontological resources are uncovered during construction, all work must be halted and an evaluation must be undertaken by a qualified paleontologist to identify the appropriate mitigation for the feature.

Policy Pres-3.2: Continue to consult with the Federated Indians of Graton Rancheria on issues of mutual concern such as the continued preservation of Native American cultural resources, as well as those times when amending the General Plan, adopting or amending a Specific Plan, when designating open space, and at other times as required by State Law.

Action Pres-3.2.1: Develop and implement consultation protocols with the Federated Indians of Graton Rancheria for the review of development proposals. The protocols should also include outlining thresholds for requiring FIGR monitoring and/or involvement in project review.

Policy Pres-3.3: Create and maintain tools to alert residents and City Staff of the potential existence of archaeological and cultural resources, including a Prehistoric Resource Sensitivity Map. When receiving a development application, Staff shall consult the Sensitivity Map to determine the potential presence of historic and/or prehistoric resources.

Action Pres-3.3.1: Maintain an up-to-date Prehistoric Resource Sensitivity Map. Utilize the map to develop protocols for development proposals that involve ground disturbance, such as:

- *<u>High sensitivity parcels</u>: Require test borings or test excavations, and consultation with the Federated Indians of Graton Rancheria. Potential need for a complete resource survey, data recovery, having an archaeological monitor and Native American monitor on site, and creation of a monitoring plan.*

- *<u>Medium sensitivity parcels</u>: Inform property owner of the potential to need test borings or test excavations if site inspections or ground disturbance yields potential evidence of archaeological or cultural resources. Presence of midden soil may be evidence of archeological or cultural resources.*

Community Design Element

The unique physical setting of Belvedere is complemented by the design of its homes, businesses, and institutions. Over time, there has been a careful balance between the design of buildings, landscaping and landscape improvements, and the physical setting. The General Plan policies and actions address the spatial relationships between the community's public, private, and semi-private spaces. The General Plan states many of the existing design standards that are noted in the City's Design Review Ordinance.

The following Community Design Element Goals, Policies, and Action Items are identified in the analysis provided in this IS/MND because they provide mitigation for environmental impacts resulting from General Plan implementation:

Policy CD-1.1: The landscape and topography shall be preserved in a naturalistic state to the greatest extent feasible and reasonable.

Action CD-1.1.1: The removal of trees, vegetation, rock, and soil should be kept to a minimum.

Action CD-1.1.2: Projects should be designed to minimize cut and fill areas, and grade changes should be minimized and kept in harmony with the general appearance of the neighboring landscape.

Action CD-1.1.3: All disturbed areas should be finished to a natural appearing configuration and planted or seeded to prevent erosion.

Action CD-1.1.4: Paved areas should be minimized to the extent feasible and reasonable and permeable paving should be utilized when possible.

Action CD-1.1.5: Consider controls on the areas of a property that may be covered with impermeable materials.

Policy CD-2.1: There should be a balanced and harmonious relationship among the structures on the site, between the structures and the site itself, and between the structures and those on adjoining properties.

Action CD-2.2.1: All new buildings or additions constructed on sloping land should be designed to relate to the natural land forms and step with the slope in order to minimize the building mass and bulk and to integrate the structure with the site.

Action CD-2.2.2: The design of residences and landscapes that relate to the particular geography, history, climate, and culture of Belvedere is encouraged. Strict reproduction of exotic styles or of an existing house is discouraged.

Action CD-2.2.3: The siting of new construction and additions on a parcel should reflect the characters of the setbacks and landscape buffers on adjoining properties.

Policy CD-3.1: All buildings should be designed to relate to and fit in with others in the neighborhood and not designed to attract attention to themselves.

Action CD-3.1.1: All new structures and additions should be designed to avoid monumental or excessively-large dwellings which are out of character with their setting or with other dwellings in the neighborhood.

Action CD-3.1.2: To avoid monotony or an impression of bulk, large expanses of any one material on a single plane should be avoided, and large single plane retaining walls should be avoided. Vertical and horizontal elements should be used to add architectural variety, to break up building planes, and to avoid monotony.

Action CD-3.1.3: Consider design elements and qualities that contribute to harmonious architecture.

Action CD-3.1.4: All new structures and additions should be sensitive to the scale and proportion of key architectural elements of nearby residences, such as roof

edges, windows, doors, cornices, eaves, floor levels, wall plates, buildings walls, and entries.

Policy CD-4.1: Building designs should incorporate materials and colors that minimize the structures' visual impact, that blend with the existing land form and vegetative cover, that relate to and fit in with structures in the neighborhood, and that do not attract attention to the structures themselves.

Action CD-4.1.1: Materials which blend easily with the landscape, such as natural wood shingles and siding, are preferred.

Action CD-4.1.2: Other materials, such as metals which develop an attractive, naturally-oxidized finish, used brick, stone, stucco, and concrete should be used in moderation. Use of concrete block, manufactured stone or brick, unpainted metal, galvanized metal or metal subject to ordinary rusting is discouraged. Brushed stainless steel metal is allowed in moderation.

Action CD-4.1.3: Soft and muted colors in the earth tone and wood tone range are preferred and generally should predominate. Other colors and materials are acceptable only if the Planning Commission determines they are appropriate for the building setting, and are compatible with those of other buildings in the vicinity.]

Action CD-4.1.4: Trim and window colors should be compatible with and congruous with the other building colors.

Action CD-4.1.5: All roof materials and colors (including equipment, but excluding skylights) should have nonglossy, earth tone or wood tone finishes that minimize glare and are compatible with their environment and surroundings. All exposed metals, such as roof vents, chimneys and spark arrestors, should be painted flat black or painted a color which minimizes their visibility, or should be of natural copper or bronze-finished aluminum.

Action CD-4.1.6: Retaining walls should be wood, stone, or concrete. Concrete walls and other concrete surfaces should be textured, colored to match adjacent soil or plant color, or faced with stone.

Action CD-4.1.7: New retaining walls and additions to existing retaining walls should be consistent with those on nearby properties or consistent with typical Belvedere serpentine stone walls

Policy CD-5.1: Fences should be functional while being integrated with the overall setting and compatible with the scale of the home and neighborhood.

Action CD-5.1.1: Fences and physical screening should be located so as to be compatible with the design of the site and structures as a whole.

Action CD-5.1.2: Fences should conceal and screen garbage areas, mechanical equipment, and structural elements from public view.

Action CD-5.1.3: Fences should preserve privacy between adjoining dwellings, where practical.

Action CD-5.1.4: Fences should be designed and located so that they are architecturally compatible with the design of the building, are aesthetically attractive, and do not significantly block views.

Action CD-5.1.5: Exposed wire or chain link fences are discouraged, except as temporary barriers on construction sites.

Action CD-5.1.6: Design of fencing and screening should adhere to the general provisions of bulk and mass that apply to buildings. Scale should be consistent with the character of the setting and other dwellings in the neighborhood, and monotony or an impression of bulk should be avoided.

Action CD-6.1.1: Design new construction with an aim to minimize visual or auditory intrusion onto neighboring properties.

Policy CD-7.1: Garage location, drives, parking location, and circulation should balance functional and aesthetic objectives, and shall not impair neighbor's privacy, access, or views.

Action CD-7.1.2: Design and location of walkways, driveways, curb cuts and off-street parking should not be out of relationship with the design of the proposed buildings and structures on the site, and should not impair the access, privacy, or views of neighboring properties.

Action CD-7.1.3: Scale and architectural detailing of garages should be consistent and harmonious with the overall design of the building.

Action CD-7.1.4: Broad expanses of paving should be discouraged. Permeable paving should be encouraged where there is a need for large areas of paving, such as driveways.

Policy CD-8.1: Preserve low nighttime lighting character and minimize daytime glare.

Action CD-8.1.1: Exterior lighting should not create glare, hazard, or annoyance to neighboring property owners or to passers-by. Lighting should be shielded and directed downward, with location of lights coordinated with the approved landscape plan. Lamps should be low wattage, and except for outdoor Christmas lights, shall not be colored.

Action CD-8.1.2: Where visible from off-site locations, skylights should not have white or light opaque colored exterior lenses.

Action CD-8.1.3: Large areas of glass on the roof or walls of a building that reflect or project substantial amounts of light towards nearby structures should be avoided.

Policy CD-10.1: Landscape plans should be compatible with the character of the site and surrounding developed properties.

Action CD-10.1.1: Native or natural-appearing vegetation, with generally rounded, natural forms, should be placed to appear as loose, informal clusters.

Action CD-10.1.2: Landscape plans shall include appropriate planting to soften or screen the appearance of structures as seen from off-site locations and shall include appropriate screening for architectural elements, such as building foundations, deck supports and retaining walls, that cannot be mitigated through architectural design.

Action CD-10.1.3: Landscape plans should provide privacy between properties. Choice of landscape materials should take into consideration the future impact which new planting may have in significantly obstructing views from nearby dwellings.

Action CD-10.1.4: Landscape plans shall include appropriate planting to repair, reseed and/or replant disturbed areas to prevent erosion.

Policy CD-10.2: Landscape materials should maintain the character of the neighborhood and be appropriate for the neighborhood climate.

Environmental Hazards: Safety and Stability Element

The relative levels of risk from geologic hazards within the city are influenced by the distribution of natural soil and rock materials, the steepness of slopes, man-made changes to original conditions, and external factors such as wave erosion and seismic ground shaking. The Environmental Hazards Element contains policies aimed at promoting safe neighborhoods by adopting sound development practices and environmental design standards and strengthening and promoting the city's resources for improved security, safety, and the city's emergency response capabilities. The element also contains strategies to minimize the impacts of natural and man-made disasters through sound planning practices and community outreach methods.

The following Environmental Hazards, Safety and Stability Element Goals, Policies, and Action Items are identified in the analysis provided in this IS/MND because they provide mitigation for environmental impacts resulting from General Plan implementation:

Policy HAZ-1.1: Construction shall be located and designed to avoid or minimize the hazards from earthquake, erosion, landslides, floods, and fire.

Action HAZ-1.1.1: Institutionalize the Environmental Hazards policies through review for possible amendment of the grading, subdivision, zoning, building code, design review, and other sections of city Code. Particular attention should be paid to the adequacy of building setbacks with respect to fire safety concerns.

Action HAZ-1.1.2: All new construction in the City shall ensure that it follows current seismic codes as set forth by the California Building Code (CBC

Action HAZ-1.1.3: City staff review of existing structures undergoing renovations shall consider seismic retrofits such as attachment of walls to foundations and roofs, adding structural bracing and shear walls, and addition of shutoff systems for electrical, water and gas connections. These can be undertaken in order to improve the performance and safety of these structures.

Policy HAZ-1.2: Require thorough field investigation of geologic hazards as a prerequisite to Design Review and construction approval and require site stabilization to minimize such risks.

Action HAZ-1.2.1: Consult the hazard zones maps in the preparation of Initial Studies required by the California Environmental Quality Act.

Action HAZ-1.2.2: Address hazards in the preparation of declarations and Environmental Impact Reports required by the California Environmental Quality Act.

Policy HAZ-1.3: Maintain adequate roadway clearances for emergency vehicles and evacuation and plan for safe pedestrian evacuation.

Action HAZ-1.3.1: To assure emergency and public service vehicular access in places where 10 foot road width is critical, vehicles which overhang those limits shall be cited for parking violations.

Action HAZ-1.3.2: Belvedere's Evacuation Map should be kept up to date with evacuation routes for vehicles and pedestrians. Belvedere residents with special evacuation needs should be inventoried and planned for.

Policy HAZ-1.4: Ensure the City is equipped for disaster, evacuation, and survival thereafter.

Action HAZ-1.4.1: Develop detailed plans for community-wide disaster preparedness and evacuation plans. Plans should focus on developing self sufficiency for a minimum of 120 hours, exceeding FEMA guidelines of 72 hours due to the City's geographically isolated location.

Action HAZ-1.4.2: The City shall ensure that risk to public lifeline utilities, such as those along Beach Road and San Rafael Avenue, be reduced by installing excess flow valves, bracing, flexible materials, flexible joints and connections, joint restraint, strengthening of support structures, or other means.

Action HAZ-1.4.3: Ensure that the locations of lifeline utilities at risk of damage due to liquefaction be designed for easy access and repair, and consideration should be given to providing pre-designed replacement/repair fittings to allow rapid bridging of breaks at crucial locations where damage is anticipated.

Action HAZ-1.4.4: Periodically review and update the City evacuation plan and evacuation map.

Policy HAZ-2.1: Limit new construction in floodplains unless mitigation measures are incorporated.

Action HAZ-2.1.1: Discourage new critical facilities from being located in floodplains.

Policy HAZ-2.2: Any proposed new development along the shoreline and in the Belvedere Lagoon area should be evaluated for its potential for adverse impacts from tsunamis.

Action HAZ-2.2.1: For areas identified as potential locations for adverse impacts from tsunamis, mitigation measures should be identified such as the utilization of early warning systems, as well as specific project design options

Policy HAZ-2.3: Maintain a Local Hazard Mitigation Plan (LHMP).

Action HAZ-2.3.1: Update the LHMP every five years; the last was adopted in 2005.

Action HAZ-2.3.2: Coordinate with other cities in the document update through ABAG.

Policy HAZ-2.4: Incorporate FEMA guidelines and suggested activities into local government plans and procedures for managing flood hazards.

Action HAZ-2.4.1: Ensure regular update of FEMA regulations.

Policy HAZ-2.5: Participate in creating an improved hazard mitigation plan for the Bay Area region.

Action HAZ-2.5.1: Provide ABAG geographically defined repetitive flooding loss data as part of the City Manager's request for support.

Policy HAZ-2.6: Continue to evaluate the feasibility and implementation of new seawall construction.

Action HAZ-2.6.1: Establish a citizens' committee comprised of Lagoon-area residents and the BLPOA, among others, to evaluate the feasibility and implementation issues associated with new seawall design and construction. The committee shall evaluate sea walls both along San Rafael Avenue and Beach Road.

Policy HAZ-3.1: Identify areas that could be affected by earthquake-induced landslides.

Action HAZ-3.1.1: Facilitate the efforts of the California Geological Survey to study the City to locate hazardous zones.

Policy HAZ-3.2: In the areas identified as subject to ground-shaking, the development of structures for human habitation, including residential and commercial uses, shall incorporate engineering measures to mitigate against risk to life safety, at least to the extent provided by the current California Building Code adopted by the City of Belvedere.

Policy HAZ-3.3: Comply with and enforce the State-mandated requirement that site-specific geologic or geotechnical reports be prepared for development proposals in areas subject to earthquake-induced landslides and in areas subject to liquefaction as mandated by the State Seismic Hazard Mapping Act.

Action HAZ-3.3.1: Applications for developments or additions proposed to be sited on landslide deposits, non-engineered fill, or bay mud shall be accompanied by a geotechnical engineering investigation satisfactory to the Belvedere City Engineer directed to the problem of ground shaking and ground failure. The engineering geologist and civil engineer shall submit recommendations regarding site development, structural engineering, and drainage.

Action HAZ-3.3.2: Condition project approval on the incorporation of necessary mitigation measures related to site remediation, structure and foundation design, and/or avoidance.

Policy HAZ-3.4: Known landslides and landslide-prone deposits on steep slopes (50% grade or more) should not be used for development except where engineering and geologic site investigations indicate such sites are stable or can be made stable providing appropriate mitigating measures are taken. In such cases, it

must be shown to the satisfaction of the City that the risk to persons or property or public liability can be minimized to a degree acceptable to the city.

Action HAZ-3.4.1: In projects where engineering and geologic site investigations indicate that state-of-the-art measures can correct instability, the City should require that the foundation and earthwork be supervised and certified by a geotechnical engineer, and, where deemed necessary, by an engineering geologist.

Action HAZ-3.4.2: Properties with possible slope stability problems shall be evaluated by a qualified geotechnical professional. Residents shall be encouraged to maintain surface drainage systems and avoid accidental ponding of storm water on their properties.

Policy HAZ-3.5: Filled land which is underlain by compressible materials (bay mud, marsh, slough) should receive special attention during site planning.

Action HAZ-3.5.1: Soils investigations should include borings and sufficient examination to determine the location of former sloughs and other factors which would accentuate differential settlement. The investigation should delineate those areas where settlement will be greatest, subsidence will occur, etc., and should recommend the site preparation techniques which could be employed to preclude hazard.

Action HAZ-3.5.2: Any new construction in Bay margin areas shall carefully consider the potential effects of settlement both on the project and on adjacent properties. New construction can be supported on piles where appropriate.

Action HAZ-3.5.3: All new construction in Bay margin areas shall be designed with the guidance of a qualified geotechnical engineer in accordance with the applicable CBC.

Policy HAZ-3.6: Potential for damage by erosion shall be minimized through preventative measures.

Action HAZ-3.6.1: Proposed new construction projects should comply with applicable City, Regional, and Federal storm water control regulations so as to reduce erosion impacts.

Action HAZ-3.6.2: Surface drainage facilities and vegetative cover on areas of exposed soil shall be maintained appropriately in order to avoid blockage of inlets or uncontrolled discharge to slopes.

Action HAZ-3.6.3: Establish and enforce provisions under storm water management and discharge control ordinances designed or to be designed to control erosion and sedimentation.

Policy HAZ-4.1: The Fire Protection District and city's program of systematic lot and eucalyptus cleanup should be accelerated. The program works as follows: the owner is informed his property constitutes a fire hazard and is given a time limit to clean it up. If he fails to do so, the city cleans up the lot and assesses the owner.

Policy HAZ-4.2: The Planning Commission, with input from the Building Official and Fire Marshal should periodically review the Zoning Ordinance and Building Code to ensure maximum reasonable fire hazard protection. Particular attention should be paid to the adequacy of building setbacks with respect to fire safety concerns.

Action HAZ-4.2.1: All plans for development of vacant sites and major remodeling shall be referred to the Fire Marshal at the Tiburon Fire Protection District for review and recommendations.

Policy HAZ-4.5: Continue application of California Fire Code Requirements on new homes and major remodels including sprinklers and turnarounds for fire engines.

Policy HAZ-5.2: Community outreach and education shall be undertaken to describe changes in city policies and development regulations resulting from the expanding floodplain.

Noise Element

The Noise Element assesses current and projected noise levels in the city and noise problems within the community, measures and projects noise impacts of major transportation arteries, contains standards and criteria relating land use to reasonable noise levels, and outlines policies and implementable actions. The element includes a quantitative analysis identifying major existing and future noise sources in the community, including both mobile and stationary sources, and a map of generalized noise level contours, to be used as a basis for land use decision making.

The following Noise Element Goals, Policies, and Action Items are identified in the analysis provided in this IS/MND because they provide mitigation for environmental impacts resulting from General Plan implementation:

Policy N-1.1: Utilize use the Noise and Land Compatibility Standards shown in Figure N-1, the noise level performance standards in Tables N-1 and N-2, as a guide for future planning and development decisions.

Action N-1.1.1: Continue to apply the current Noise Ordinance to regulate construction noise, amplified sound, hours of use for equipment, etc.

Action N-1.1.2: Adopt and apply quantitative noise standards for stationary noise sources, to be incorporated into the City of Belvedere Municipal Code (Title 8, Health & Safety, Chapter 8.10, Noise) for the resolution of noise complaints associated with existing sources.

Policy N-1.2: New development of noise-sensitive land uses proposed in noise-impacted areas shall incorporate effective mitigation measures into the project design to reduce exterior and interior noise levels to acceptable levels:

Action N-1.2.1: For new single-family residential development, maintain a standard of 60 L_{dn} (day/night average noise level) for exterior noise in private use areas.

Action N-1.2.2: For new multi-family residential development maintain a standard of 65 L_{dn} in community outdoor recreation areas.

Policy N-1.3: Minimize noise due to construction impacts.

Action N-1.4.1: The City of Belvedere shall not approve of any mechanical equipment that exceeds 55 dBA at the property line without appropriate mitigation measures.

Action N-1.3.1: Approval from the Building Permit and Planning Departments is required to be issued for all construction requirements in the City. The hours for construction shall continue to be limited from 8 a.m. to 5 p.m. Monday through Friday. The City Manager may, upon discretion, grant written exceptions to this condition whenever such work can be demonstrated to be necessary to protect the public's health and safety.

Policy N-1.4: Minimize noise generated from outdoor uses and events such as exterior speakers, spa and pool equipment, emergency generators, multiple air conditioning units, exterior inclined elevators, as well as infrequent loud noises such as pile driving that can be disturbing to nearby homes.

Action N-1.4.2: A Design Review ordinance amendment study shall be conducted that will address the design of exterior speakers and other equipment.

Action N-1.4.3: The operation of nuisance noise sources shall typically be prohibited between the hours of 9:00 p.m. and 7:00 a.m., Sunday through Thursday, and between 11:00 p.m. to 7:00 a.m. on Fridays and Saturdays. These restrictions shall also apply to amplified sounds and mechanical equipment in neighborhoods, such as, HVAC equipment, exhaust fans, generators, and landscape equipment.

Action N-1.4.4: Exterior speakers are discouraged. If installed, exterior speakers shall be minimized and shall face the subject residence rather than being directed outward toward the hillside and water. Amplified sound shall not be directed towards the neighboring properties or the water. Sound from exterior speakers and equipment will be contained by appropriate insulating features.

Action N-1.4.5: Erratic loud noise sources such as pile driving shall conform to the City's mandated construction hours of 8 a.m. to 5 p.m. on weekdays, and shall not be used on weekends.

Action N-1.4.6: Exterior inclined elevators *installed in the City shall provide adequate noise buffers such as fencing so as to reduce the noise impacts to 60 dBA.*

Action N-1.4.7: Discourage the use of gas-powered landscape equipment and encourage the use of electric versions.

D. PROPOSED ACTIONS ADDRESSED IN THE IS/MND

GENERAL PLAN UPDATE ADOPTION

The City of Belvedere General Plan Update will be presented to the City of Belvedere Planning Commission for review, comment, and recommendations. The City of Belvedere City Council, as the city's legislative body, is the approving authority for the City of Belvedere General Plan Update. In order to adopt the General Plan Update, the City Council would have to take the following actions:

- Adoption of the City of Belvedere General Plan Update Mitigated Negative Declaration.
- Adoption of a mitigation monitoring and report program for any mitigation measures identified in the Mitigated Negative Declaration.
- Adoption of the City of Belvedere General Plan Update.

HOUSING ELEMENT UPDATE ADOPTION

- Adoption of the City of Belvedere General Plan Update.

E. REGULATORY REQUIREMENTS, PERMITS, AND APPROVALS

Additional subsequent approvals and permits that may be required from local, regional, state, and federal agencies in the processing of subsequent development under the General Plan Update that this Mitigated Negative Declaration may be used to support include, but are not limited to, the following:

- State Office of Historic Preservation (SHPO) consultation for impacts to historic or cultural resources.
- California Department of Fish and Game approval of potential future streambed alteration agreements, pursuant to the Fish and Game Code. Approval of any future potential take of state-listed wildlife and plant species covered under the California Endangered Species Act.
- Regional Water Quality Control Board (RWQCB) and State Water Resources Control Board (SWRCB) review and/or approval of any activity impacting water features, pursuant to the California Clean Water Act and RWQCB standards.
- U.S. Army Corps of Engineers (USACE) approval of any future wetland fill activities, pursuant to the federal Clean Water Act.
- U.S. Fish and Wildlife Service (USFWS) approvals involving any future potential take of federally listed wildlife and plant species and their habitats covered under the federal Endangered Species Act.
- Metropolitan Transportation Commission allocates financing for federal, state, and local transportation projects.
- Transportation Authority of Marin addresses the existing and future transportation congestion in Marin County and its cities and towns through the implementation of the Marin County Congestion Management Program.

There are no other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement) for the proposed Housing Element Update. The California Department of Housing and Community Development reviews and certifies Housing Elements; however, its approval is not required for adoption of the 2030 General Plan by the City.

3.0 ENVIRONMENTAL CHECKLIST

A. BACKGROUND

1. Project Title:

City of Belvedere Housing Element Update and General Plan Update

2. Lead Agency Name and Address:

City of Belvedere, 450 San Rafael Avenue, Belvedere, CA 94920

3. Contact Person and Phone Number:

Pierce Macdonald, (415) 435-3838

4. Project Location:

Belvedere citywide

5. Project Sponsor's Name and Address:

City of Belvedere, 450 San Rafael Avenue, Belvedere, CA 94920

6. General Plan Designation:

Refer to **Table 2** in Section II above.

7. Description of Project:

An update of the existing General Plan to bring it into conformance with today's standards without any major changes in policy direction. An update of the Housing Element to provide an analysis of the community's housing needs for all income levels and strategies to respond to those needs.

8. Surrounding Land Uses and Setting:

The City of Belvedere is surrounded by water in nearly every direction. It is flanked by Richardson Bay to the west and north, Belvedere Cove and Raccoon Strait to the south, and the Town of Tiburon to the east. The city has a total area of 2.42 square miles, containing 0.54 square miles of land and 1.89 square miles of water.

9. Other Public Agencies whose Approval is required:

In CEQA, the term "responsible agency" includes all public agencies other than the lead agency that may have discretionary actions associated with the implementation of the City of Belvedere Housing Element Update and General Plan Update or an aspect of the project. Since potential future implementation decisions may occur many years from now when the General Plan is in common use, all Responsible Agencies cannot be known with certainty. However, the following agencies may have some role in implementing the City of Belvedere Housing Element Update and General Plan Update and have been identified as potential responsible agencies:

- California Department of Fish and Game (DFG), Region 3
- California Department of Housing and Community Development (HCD)
- California Department of Transportation, District 4 (Caltrans)
- Bay Area Air Quality Management District (BAAQMD)
- Bay Conservation and Development Commission (BCDC)
- Reed Union School District
- Tamalpais Union High School District
- Marin Local Agency Formation Commission (Marin LAFCo)
- California Public Utilities Commission (PUC)
- Federal Emergency Management Agency (FEMA)
- California State Lands Commission
- U.S. Army Corps of Engineers (USACE)
- U.S. Environmental Protection Agency (USEPA)
- U.S. Fish and Wildlife Service (USFWS)

B. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project involving at least one impact that is a "Potentially Significant Impact," as indicated by the checklist on the following pages. Potentially significant impacts that are mitigated to "Less Than Significant" impact are not shown here.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology and Soils
☐ Greenhouse Gas Emissions	☐ Hazards/Hazardous Materials	☐ Hydrology/Water Quality
☐ Land Use/Planning	☐ Mineral Resources	☐ Noise
☐ Population/Housing	☐ Public Services	☐ Recreation
☐ Transportation/Traffic	☐ Utilities/Service Systems	☐ Mandatory Findings of Significance

C. DETERMINATION

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because of the incorporated mitigation measures and revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Pierce Macdonald — Signature

5/12/2010 — Date

Pierce Macdonald — Printed Name

Planning Manager — Title

D. EVALUATION OF ENVIRONMENTAL IMPACTS

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources cited. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards.

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect, and construction as well as operational impacts.

3) A "Less than Significant Impact" applies when the proposed project would not result in a substantial and adverse change in the environment. This impact level does not require mitigation measures.

4) "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect is significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

5) "Potentially Significant Unless Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less than Significant Impact." The initial study must describe the mitigation measures and briefly explain how they reduce the effect to a less than significant level.

4.0 ENVIRONMENTAL ANALYSIS

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
1. AESTHETICS. Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcrops, and historic buildings within a state scenic highway?	☐	☐	☒	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

EXISTING SETTING

REGIONAL SETTING

Marin County has a unique visual environment with a diverse landscape that includes views of open space, ocean vistas and beaches, the San Francisco Bay shoreline, hills and ridgelines, agriculture lands, and various types of trees and other natural features. Nearly half of the Marin County's land base is protected by park or open space status (County of Marin, 2007).

Although there are currently no designated State Scenic Highways or National Scenic Byways in Marin County, many of the roadways throughout Marin County offer views of scenic resources. Furthermore, the entire stretch of State Route 1 running through Marin County, as well as sections of U.S. 101, is eligible to be a State Scenic Highway. State Route 37, which runs west to east through a mid-portion of the county, is designated as an "unconstructed state highway eligible for Scenic Designation." The criteria for official designation and eligibility includes the scenic quality of the landscape, how much of the natural landscape can be seen by travelers, and the extent to which development intrudes upon the traveler's enjoyment of the view (County of Marin, 2007).

LOCAL SETTING – CITY OF BELVEDERE

Belvedere is a community consisting of two islands at the southwestern tip of the Tiburon Peninsula and a lagoon-landfill area linking the islands to the mainland. From the islands, there are sweeping marine views of the surrounding San Francisco Bay Area. Vistas of the Tiburon hills and of the Sausalito waterfront are important parts of Belvedere's environmental context. In the land-filled area, there are views of and direct access to the more intimate Lagoon Area. Belvedere is predominantly a residential community and there are four distinct residential areas: Belvedere Island, Corinthian Island, the West Shore Road Area, and the Lagoon Area.

Belvedere Island is the oldest historical section of Belvedere. It is characterized by a variety of architectural styles and sizes of homes, as well as by its dense, mature vegetation and narrow, winding streets. The landscape of Belvedere Island is park-like and semirural. There are few areas with sidewalks, and the typical streetscape features scenic views, generous landscape buffers, and open expanses of naturalistic hillside and garden areas. Lot sizes vary greatly on Belvedere Island, so the character of each street varies. Belvedere Island includes expansive homes on

relatively large lots, as well as more modest hillside ranch-style homes on smaller lots. Architectural styles include numerous examples of Shingle Style and Arts and Crafts designs, as well as modern designs and some Mediterranean examples.

Corinthian Island is a small natural island, about half of which is within the City of Belvedere and half within Tiburon. Homes are a mixture of both old and new. The streets are very narrow and slopes are very steep. Corinthian Island homes overlook either Belvedere Cove or historic Tiburon, and all have a partial to full view of San Francisco Bay. Homes are grouped close to each other, and the steep topography gives a sense of a "hill town." Vegetation is less dense on Corinthian Island as compared to Belvedere Island. Larger lots near the top of the island are characterized by groupings of large, mature oak trees. Existing landscape screening is highly valued due to the closeness of homes and the rocky soil of the steeply sloping hillside.

The Lagoon Area consists of small to moderate-sized lots with one- and two-story homes built in the 1950s and 1960s, with numerous renovations and replacements since. Most of the lots in this area front on the waters of the Belvedere Lagoon. Homes tend to be oriented to the lagoon along the rear of the lot rather than the street. Many front yards are screened behind privacy fences, while rear yards can be quite open and exposed. The original homes in the Lagoon Area represented a veritable showcase of architecture by practically every leading architect in the Bay Area. Homes typically had a semi-rustic character, often single-story, and often with vertical wood board-and-batten siding. Modernist mid-century designs characterized by low rooflines and large expanses of glass were also popular. More recent years have seen the development of a diversity of styles including contemporary stucco designs and some Mediterranean designs. Renovations have involved both single-story and two-story homes, while new homes typically have two stories. Landscape screening between homes is common in this part of the community.

The West Shore Road Area is a geographically distinct neighborhood situated at the western base of Belvedere Island. It contains predominantly one- and two-story homes lining West Shore Road, many of which are built over leased land. The homes in this neighborhood were initially built in the 1950s and 1960s, with some new homes replacing existing homes in recent years. Steep cliffs line the eastern side of the road. From the street, many of the homes resemble those of the Lagoon Area, with privacy fences screening many front yard areas. However, unlike the Lagoon Area where homes are situated on filled lots, many homes on West Shore Road project out above the water on pilings. Landscape screening between homes is rare in this part of the community.

Commercial buildings consists primarily of the "public square" at Beach Road and San Rafael Avenue, and the Boardwalk Shopping Center, which is split between the Belvedere and Tiburon jurisdictions. The public square is flanked by one of the cities two major yacht clubs, the Belvedere Land Company buildings, and adjacent cottages and apartments. The Land Company buildings, cottages, and adjacent apartment building were built in the early 1900s in the First Bay Tradition, a local variant of the Shingle Style. The setting has a harmonious and intimate quality, and the shopping center is characteristic of mid-century California neighborhood shopping centers, with a grocery store, storefronts, and offices grouped in one- and two-story buildings around internal courtyards and parking areas. A wooden walkway, large expanses of glass, low rooflines, and wood board-and-batten siding provide both mid-century contemporary design and rustic, maritime character.

There are several vantage points in the community where residents and visitors have access to scenic views of Belvedere and its environs. Areas providing views into the Belvedere Lagoon are found along San Rafael Avenue between Windward and Edgewater roads, on Lagoon Road at the Belvedere Lagoon Property Owners Association (BLPOA) boatyard, and at the dredging access to the lagoon near the end of Mallard Road. Visual easements along Beach Road and West Shore Road include a view area near Beach Road and Belvedere Avenue and view easements at the

turnarounds on West Shore Road. The Winifred Allen bench is located in an area identified as "The Artist's View." Scenic community corridors include San Rafael Avenue and Beach Road.

There are no designated State Scenic Highways or National Scenic Byways in the City of Belvedere.

REGULATORY FRAMEWORK

The following state and local regulations, plans, programs, and guidelines are applicable to the proposed City of Belvedere Housing Element Update and General Plan Update:

- **Federal Laws and Regulations** – There are no applicable federal regulations or programs for the General Plan Planning Area.
- **State Laws and Regulations** – Nighttime Sky – Title 24 Outdoor Lighting Standards
- **Local Laws, Regulations, and Policies** – City of Belvedere Zoning Ordinance (Title 19 of the Municipal Code), City of Belvedere Architectural and Environmental Design Review Ordinance (Title 20 of the Municipal Code)

PROJECT IMPACTS AND MITIGATION MEASURES

a–b) less than significant

As previously discussed, there are several vantage points in the community where residents and visitors have access to scenic views of Belvedere and its environs, including areas providing views into the Belvedere Lagoon, visual easements along Beach Road and view easements at the turnarounds on West Shore Road. Given that Belvedere is largely built out, substantial changes in land use and/or development that would affect these vistas are unlikely over the course of the updated General Plan and Housing Element planning horizon. With most of the land area currently devoted to residential use, the majority of the future development units will be renovations and replacement of existing homes, as well as a small number of infill and redevelopment opportunities, primarily in the commercial and multi-family residential districts. Views in residential land use classifications are protected in that the City regulates height limits, minimum lot size requirements, and setbacks through its Zoning Ordinance. The Zoning Ordinance also includes regulations for very large homes, and new second units require protection of "primary views," which are generally views of Mt. Tamalpais, San Francisco Bay and its environs, bridges, and the surrounding hills of Tiburon or Belvedere Island as seen from inside the common areas of a home. Scenic views in other land use classifications are protected by limitations on new uses established by the R and O Zoning District regulations.

Proposed General Plan Update policies and associated actions (Policy CD-1.1; Action CD-1.1.1; Action CD-1.1.2; Action CD-1.1.3; Action CD-10.1.1; Action CD-10.1.3; Action CD-5.1.4; Action CD-6.1.1; Action CD-7.1.2; Policy LU-1.4; Action LU-1.4.1; Policy Rec-1.4; Policy Rec-1.5; Policy Rec-2.1; Policy Rec-3.2) would reduce potential adverse effects to scenic vistas by maintaining views of the Bay, San Francisco, the mountains, and views from scenic streets. These policies, along with the City's Zoning Ordinance and Design Review Ordinance, would ensure that future development and/or redevelopment associated with the proposed Housing Element Update and General Plan Update would not result in substantial adverse effects to scenic vistas. Furthermore, there are no designated or eligible State Scenic Highways or National Scenic Byways in the City of Belvedere that could be impacted by the Housing Element Update and General Plan Update. Therefore, this impact is considered to be **less than significant.**

Mitigation Measures

None required.

c) less than significant

The existing visual character of the City of Belvedere is described under the Existing Setting subsection above. Substantial changes in land use and/or development that would affect the existing visual character are unlikely over the course of the updated General Plan and Housing Element planning horizon, as the city is largely built out. The proposed General Plan Update will include new residential development over the General Plan planning horizon. With most of the land area currently devoted to residential use, the majority of future development will be renovations and replacement of existing homes, as well as a small number of infill and redevelopment opportunities, primarily in the commercial and multi-family residential districts. Therefore, areas anticipated for development under the Housing Element Update and General Plan Update would primarily be located in currently developed or infill areas. The type, location, density, and scale of new development would be regulated through the City's Zoning Ordinance. In addition, all new development projects would be required to comply with the City's Design Review Ordinance, which includes regulations intended to preserve and enhance the beauty of the city's natural and man-made environment and encourage the maintenance of a scale and character of individual buildings consistent with the overall scale and character of the community.

In addition, the City of Belvedere has a unique problem while attempting to maintain its visual character. With its park-like setting and lush landscapes, the city is home to various species of deer. Though the deer are part of the community's ambiance, they are also responsible for destruction of landscaping. Protecting landscaping with fencing can be effective, but the height of fencing must be suitably tall to keep deer out. This has aesthetic implications as open views of homes, gardens, and surrounding landscape and water can come into direct conflict with deer fencing.

Proposed General Plan Update policies and associated actions (Policy CD-1.1; Action CD-1.1.1; Action CD-1.1.2; Policy CD 2.2; Action CD-2.2.1; Action CD-2.2.2; Action CD-2.2.3; Policy CD 3.1; Action CD-3.1.1; Action CD-3.1.2; Policy CD-3.1.3; Action CD-3.1.4; Policy CD-4.1; Action CD-4.1.1; Action CD-4.1.2; Action CD-4.1.2; Action CD-4.1.4; Action CD-4.1.5; Action CD-4.1.6; Action CD-4.1.7; Policy CD-5.1; Action CD-5.1.1; Action CD-5.1.2; Action CD-5.1.3; Action CD-5.1.4; Action CD-5.1.5; Action CD-5.1.6; Action CD-6.1.1; Policy CD-7.1; Action CD-7.1.2; Action CD-7.1.3; Action CD-7.1.4; Policy CD-10.1; Action CD-10.1.2; Action CD-10.1.3; Policy CD-10.2; Policy LU-1.3; Policy LU-1.3.1; Policy LU-1.4; Action LU--1.4.1; Policy LU-1.5; Action LU-1.6.2; Policy LU-2.1; Policy LU-2.4; Action LU-2.4.1; Policy LU-5.1; Action LU-7.1.2; Policy Rec-1.4; Policy Rec-1.5) contain extensive protection of the existing visual character of the city and would reduce potential impacts to that character. The policies address the overall character of the city, as well as specific aesthetic considerations such as hillside development and architectural materials. These policies, along with the City's Zoning Ordinance and Design Review Ordinance, would ensure that future development and/or redevelopment associated with the proposed Housing Element Update and General Plan Update would not degrade the existing visual character of the city. This impact is considered to be **less than significant**.

Mitigation Measures

None required.

d) less than significant

Implementation of the proposed Housing Element Update and General Plan Update may introduce new sources of daytime glare and may change nighttime lighting and illumination levels. Lighting nuisances typically are categorized as:

- Glare – intense light that shines directly or is reflected from a surface into a person's eyes
- "Skyglow"/Nighttime Illumination – artificial lighting from urbanized sources that alters the rural landscape in sufficient quantity to cause lighting of the nighttime sky and reduction of visibility of stars and other astronomical features
- "Spillover" Lighting – artificial lighting that spills over onto adjacent properties, which could interrupt sleeping patterns or cause other nuisances to neighboring residents

Daytime glare could result from sunlight reflecting from structures with reflective surfaces. Building materials (e.g., reflective glass and polished surfaces) are the most substantial sources of glare. Sources of nighttime lighting and illumination include, but are not limited to, residential development, lighting from nonresidential uses, and lights associated with vehicular travel (e.g., car headlights). Increased nighttime lighting and illumination could result in adverse effects to adjacent land uses through the "spilling over" of light into these areas and skyglow conditions, as described above. The majority of future development associated with the proposed Housing Element Update and General Plan Update would be renovations and replacement of existing homes, as well as a small number of infill and redevelopment opportunities, primarily in the commercial and multi-family residential districts of the city. This development has the potential to add new sources of daytime glare and nighttime lighting in the city, potentially resulting in the nuisances described above.

In addition, due to the close proximity of many homes in the Lagoon Area, there are issues of lighting, which is intensified by the presence of the water. As light from outdoor fixtures and brightly lit interiors of homes is reflected in the water, the effect on neighbors is an increased light impact. In recent years this issue has been especially topical as new lighting technologies have become available which allow increasingly bright and elaborate lighting schemes. Redevelopment, including new or converted second units, associated with the proposed Housing Element Update and General Plan Update could exacerbate the lighting issues in the Lagoon Area.

As previously discussed, all future development projects would be required to comply with the City's Design Review Ordinance, which emphasizes natural materials and would assist in reducing potential impacts resulting from new sources of daytime glare and nighttime lighting in the city.

Proposed General Plan Update policies and associated actions (Action CD-4.1.2; Action CD-4.1.5; Policy CD-8.1; Action CD-8.1.1; Action CD-8.1.2; Action CD-8.1.3; Policy Rec-2.3) would help regulate potential sources of glare and nighttime lighting by discouraging the use of building materials likely to result in glare (glossy materials and glass) and by encouraging lighting to be low wattage and shielded downward. The policies also require that exterior lighting not create glare, hazard, or annoyance to neighboring property owners or to passersby. These policies, along with the City's Zoning Ordinance and Design Review Ordinance, regulate sources of light that create glare or substantial nighttime lighting and would aid in reducing impacts from glare and light pollution in the city, including for the residents living closer to the water in the Lagoon Area. Given the minimal amount of additional development accommodated by the proposed Housing Element Update and General Plan Update, and considering the mitigation provided by the proposed General Plan Update policies and the City's Zoning Ordinance and Design Review Ordinance, this impact is considered to be **less than significant.**

Mitigation Measures

None required.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
2. AGRICULTURE AND FOREST RESOURCES. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act Contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland.

In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

EXISTING SETTING

The City of Belvedere is wholly developed with primarily residential and some commercial uses. There are very few areas that are undeveloped, and they are very steep and not conducive to farming. Therefore, there are no agricultural resources or operations within the city limits. The California Department of Conservation's *2008 Important Farmland Map Marin County* designates the entire city as Urban and Built-Up Land and the land adjacent to the city on the Tiburon Peninsula as Urban and Built-Up Land and Other Land. Therefore, neither the City nor the surrounding area contains any Important Farmland or Grazing Land as designated by the Department of Conservation. Furthermore, the City of Belvedere does not contain any officially designated forest land or timberland, or lands under Williamson Act Contracts.

REGULATORY FRAMEWORK

The following state regulations, plans, programs, and guidelines are applicable to the proposed City of Belvedere Housing Element Update and General Plan Update:

- **Federal Laws and Regulations** – There are no applicable federal regulations or programs for the General Plan Planning Area.

- **State Laws and Regulations** – There are no applicable state regulations or programs for the General Plan Planning Area.

- **Local Laws, Regulations, and Policies** – There are no applicable local regulations or programs for the General Plan Planning Area.

PROJECT IMPACTS AND MITIGATION MEASURES

a–e) no impact

As discussed above, the City of Belvedere is largely built out with residential and some commercial uses. The few areas that are undeveloped are very steep and not conducive to farming. In addition, neither the city nor the surrounding area contains any Important Farmland or Grazing Land as designated by the Department of Conservation (DOC). There are no lands under Williamson Act Contracts within the City of Belvedere. As such, changes contemplated by the City's proposed Housing Element Update and General Plan Update would have **no impact** on agricultural resources.

Mitigation Measures

None required.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
3. AIR QUALITY. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☒	☐	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

EXISTING SETTING

The topography of the City of Belvedere varies slightly from just above sea level at the shoreline areas to 354 feet on Belvedere Island at the south end of Crest Road. Belvedere is located in Marin County, which is in the west-central region of the San Francisco Bay Area Air Basin. Surrounded by water in nearly every direction, the city is flanked by Richardson Bay to the west and north, and Belvedere Cove and Raccoon Strait to the south.

REGIONAL SETTING

The California Air Resources Board (CARB) divides the state into air basins that share similar meteorological and topographical features. The City of Belvedere is located in Marin County, which is part of the nine-county San Francisco Bay Area Air Basin. Marin County is bounded on the west by the Pacific Ocean, on the east by San Pablo Bay, on the south by the Golden Gate, and on the north by the Petaluma Gap. The prevailing wind direction is southwesterly, which is the wind direction when marine breezes flow through the Carquinez Strait. Marine breezes dominate during the spring and summer months and show strong daily variations. Highest average wind speeds occur in the afternoon and evening hours; lightest winds occur in the night and morning hours. During fall and winter, when the sea breeze diminishes, northerly winds occur more frequently, but southwesterly winds still predominate. The eastern side of Marin County has warmer weather than the western side because of its distance from the ocean and because the hills that separate eastern Marin from western Marin occasionally block the flow of marine air. Temperatures in the Belvedere vicinity are moderated by the cooling effect of the San Francisco Bay in summer and the warming effect of the bay in winter.

Marin County does not have many polluting industries and is located on the upwind edge of the air basin, so that current air quality is good despite a high climatological pollution potential.

CITY OF BELVEDERE AMBIENT AIR QUALITY

The most problematic pollutants in the Belvedere area include ozone and particulate matter. During summer's longer daylight hours, plentiful sunshine provides the energy needed to fuel photochemical reactions between nitrogen dioxide (NO_x) and reactive organic gases (also known as volatile organic compounds), which result in ozone formation. Ozone is a colorless toxic gas that irritates the lungs and damages materials and vegetation. To reach high levels of ozone requires adequate sunshine, early morning stagnation in source areas, high surface temperatures, strong and low morning inversions, greatly restricted vertical mixing during the day, and daytime subsidence that strengthens the inversion layer. Because of its long formation time in the atmosphere, ozone patterns are most affected by transport patterns.

In the winter, temperature inversions occur close to ground level during the night and early morning hours. At this time, the greatest pollution problems are from carbon monoxide (CO) and NO_x. Higher CO concentrations occur on winter days with strong surface inversions and light winds. CO transport is extremely limited. Highest concentrations are associated with areas of highest traffic density. Higher NO_x levels usually occur during the autumn or winter on days with summer-like weather conditions. These conditions include low inversions, limited daytime mixing, and stagnant windflow conditions. Although days are clear, sunlight is limited in duration and intensity and photochemical reactions necessary to form ozone are incomplete.

Atmospheric particulates (total suspended particulates, or TSP) are made up of fine solids or liquids such as soot, dust, aerosols, fumes, and mists. A large portion of the TSP in the atmosphere is finer than particulate matter particles at 10 microns in diameter (PM_{10}). These small particulates cause the greatest health risk of all suspended particulates since they can more easily penetrate the defenses of the human respiratory system. Peak concentrations of PM_{10} occur downwind of precursor emission sources. As with ozone, a substantial fraction of PM_{10} forms in the atmosphere as a result of chemical reactions. Manmade sources of PM_{10} include agriculture, mining, grading, and other activities that involve earthwork.

The health effects and major sources of these pollutants are described below. Toxic air pollutants are a separate class of pollutants and are discussed later in this analysis.

Ozone

Ground-level ozone, commonly referred to as smog, is greatest on warm, windless, sunny days. Ozone is not emitted directly into the air, but formed through a complex series of chemical reactions between reactive organic gases (ROG) and NOx. These reactions occur over time in the presence of sunlight. Ground-level ozone formation can occur in a matter of hours under ideal conditions. The time required for ozone formation allows the reacting compounds to spread over a large area, producing a regional pollution concern. Once formed, ozone can remain in the atmosphere for one or two days.

Ozone is also a public health concern because it is a respiratory irritant that increases susceptibility to respiratory infections and diseases, and because it can harm lung tissue at high concentrations. In addition, ozone can cause substantial damage to leaf tissues of crop and natural vegetation and can damage many natural and man-made materials by acting as a chemical oxidizing agent.

The principal sources of the ozone precursors (ROG and NOx) are the combustion of fuels and the evaporation of solvents, paints, and fuels.

Particulate Matter (PM)

Particulate matter can be divided into several size fractions. Coarse particles are between 2.5 and 10 microns in diameter and arise primarily from natural processes, such as wind-blown dust or soil. Fine particles are less than 2.5 microns in diameter and are produced mostly from combustion or burning activities. Fuel burned in cars and trucks, power plants, factories, fireplaces, and wood stoves produces fine particles.

The level of fine particulate matter in the air is a public health concern because it can bypass the body's natural filtration system more easily than larger particles and can lodge deep in the lungs. The health effects vary depending on a variety of factors, including the type and size of particles. Research has demonstrated a correlation between high PM concentrations and increased mortality rates. Elevated PM concentrations can also aggravate chronic respiratory illnesses such as bronchitis and asthma.

Carbon Monoxide

Carbon monoxide (CO) is an odorless, colorless gas that is formed by the incomplete combustion of fuels. Motor vehicle emissions are the dominant source of CO in the Belvedere region. At high concentrations, CO reduces the oxygen-carrying capacity of the blood and can cause dizziness, headaches, unconsciousness, and even death. CO can also aggravate cardiovascular disease. Relatively low concentrations of CO can significantly affect the amount of oxygen in the bloodstream because CO binds to hemoglobin 220–245 times more strongly than oxygen.

CO emissions and ambient concentrations have decreased significantly in recent years. These improvements are due largely to the introduction of cleaner burning motor vehicles and motor vehicle fuels. CO is still a pollutant that must be closely monitored, however, due to its severe effect on human health.

Elevated CO concentrations are usually localized and are often the result of a combination of high traffic volumes and traffic congestion. Elevated CO levels develop primarily during winter periods of light winds or calm conditions combined with the formation of ground-level temperature inversions. Wintertime CO concentrations are higher because of reduced dispersion of vehicle emissions and because CO emission rates from motor vehicles increase as temperature decreases.

Ambient Air Quality Standards

Both the U.S. Environmental Protection Agency (USEPA) and CARB have established ambient air quality standards for common pollutants. These ambient air quality standards are levels of contaminants that represent safe levels that avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called "criteria" pollutants because the health and other effects of each pollutant are described in criteria documents. The federal and California state ambient air quality standards for important pollutants are summarized in **Table 4**. The federal and state ambient standards were developed independently with differing purposes and methods, although both processes attempted to avoid health-related effects. As a result, the federal and state standards differ in some cases. In general, the California state standards are more stringent. This is particularly true for ozone and PM_{10}.

TABLE 4
FEDERAL AND STATE AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	Federal Primary Standard	State Standard
Ozone	1-Hour 8-Hour	-- 0.075 ppm	0.09 ppm 0.07 ppm
Carbon Monoxide	8-Hour 1-Hour	9.0 ppm 35 ppm	9.0 ppm 20.0 ppm
Nitrogen Dioxide	Annual Average 1-Hour	0.053 ppm --	0.03 ppm 0.18 ppm
Sulfur Dioxide	Annual Average 24-Hour 1-Hour	0.03 ppm 0.14 ppm	-- 0.04 ppm 0.25 ppm
PM_{10}	Annual Average 24-Hour	-- 150 µg/m^3	20 µg/m^3 50 µg/m^3
$PM_{2.5}$	Annual 24-Hour	15 µg/m^3 35 µg/m^3	12 µg/m^3 --

Notes: ppm = parts per million, ug/m^3 = micrograms per cubic meter
PM_{10} = particulate matter 10 microns or less, $PM_{2.5}$ = particulate matter 2.5 microns or less
Source: CARB, 2009b

In March 2008, USEPA adopted new national air quality standards for ground-level ozone, reducing the 8-hour standard from 0.08 parts per million (ppm) to 0.075 ppm. National standards for fine particulate matter (diameter 2.5 microns or less) were amended in 2006 for 24-hour and annual averaging periods. The current PM_{10} standards were retained, but the method and form for determining compliance with the standards were revised.

Ambient air quality in the project area can be inferred from ambient air quality measurements conducted at nearby air quality monitoring stations. CARB maintains over 60 air quality-monitoring stations throughout California, and the Bay Area Air Quality Management District (BAAQMD) and CARB maintain several air quality monitoring sites in the Bay Area, including sites in the cities of San Rafael and Vallejo. The data collected at these stations are considered to be representative of the baseline air quality experienced in the City of Belvedere.

As previously mentioned, the most problematic pollutants in the Belvedere area include ozone and particulate matter. Air quality monitoring data for ozone and particulate matter are available and these two criteria pollutants are abundant enough in the San Francisco Bay Area Air Basin atmosphere to designate the air basin as nonattainment status for the federal 8-hour and 1-hour ozone standard, the state 1-hour ozone standard, and the state PM_{10} and $PM_{2.5}$ standards. The San Rafael monitoring site (534 4th Street) measures ozone and PM_{10}. The nearest monitoring site for $PM_{2.5}$ is at 304 Tuolumne Street in Vallejo. The state ambient standards of ozone and PM are sometimes exceeded (CARB, 2009b).

Table 5 summarizes the published data since 2006 from the 534 4th Street air quality monitoring station in San Rafael and the 304 Tuolumne Street air quality monitoring station in Vallejo. As depicted in **Table 5**, state and federal ozone standards have rarely been exceeded during the last three years of available data.

TABLE 5
SUMMARY OF AMBIENT AIR QUALITY DATA

Pollutant Standards	2006	2007	2008
San Rafael – 534 4th Street Air Monitoring Station			
Ozone (O_3)			
Maximum concentration (1-hr/8-hr, ppm)	0.089/0.058	0.072/0.057	0.085/0.069
Number of days state standard (1-hr/8-hr) exceeded	0/0	0/0	0/0
Number of days federal standard (8-hr) exceeded	0	0	0
Respirable Particulate Matter (PM_{10})			
Maximum daily concentration (µg/m^3)	68.2	55.6	41.0
Number of days state standard exceeded	5.7	6.0	0
Number of days federal standard exceeded	0	0	0
Vallejo – 304 Tuolumne Street Air Monitoring Station			
Particulate Matter ($PM_{2.5}$)			
Maximum daily concentration (µg/m^3)	44.0	41.5	51.2
Number of days state standard exceeded	12.3	12.0	*
Number of days federal standard exceeded	5.9	12.1	7.1

(µg/m3) - Micrograms per Cubic Meter

ppm – parts per million

** - There was insufficient (or no) data available to determine value*

Source: CARB, 2009b

Toxic Air Contaminants

In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are another group of pollutants of concern. Unlike criteria pollutants, no safe levels of exposure to TACs have been established. There are many different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Public exposure to TACs can result from emissions from normal operations, as well as accidental releases of hazardous materials during upset conditions. The health effects of TACs include cancer, birth defects, neurological damage, and death. Potential sources of TACs in the city include all gas stations.

Diesel exhaust is a TAC of growing concern in California. According to the California Almanac of Emissions and Air Quality (CARB, 2006), the majority of the estimated health risk from TACs can be attributed to relatively few compounds, the most important being PM from diesel fueled engines (diesel PM). The California Air Resources Board in 1998 identified diesel engine PM as a TAC. Diesel PM differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances. The exhaust from diesel engines contains hundreds of different gaseous and particulate components, many of which are toxic. Many of these compounds adhere to the particles, and because diesel particles are so small, they penetrate deep into the lungs. Diesel engine particulate has been identified as a human carcinogen. Mobile sources, such as trucks, buses, automobiles, trains, ships, and farm equipment, are by far the largest source of diesel emissions. Studies show that diesel particulate matter concentrations are much higher near heavily traveled highways and intersections.

Although diesel PM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present. No ambient monitoring data are available for diesel PM because no routine measurement method currently exists. However, CARB has made preliminary concentration estimates based on a PM exposure method. This method uses CARB's emissions inventory PM_{10} database, ambient PM_{10} monitoring data, and the results from several studies to estimate concentrations of diesel PM.

TAC impacts are evaluated by calculating the health risks associated with a given exposure. Two types of risk are usually assessed: chronic non-cancer risk and acute non-cancer risk. Diesel particulate has been identified as a carcinogenic material but is not considered to have acute non-cancer risks. The state has begun a program of identifying and reducing risks associated with particulate matter emissions from diesel-fueled vehicles. The plan consists of new regulatory standards for all new on-road, off-road, and stationary diesel-fueled engines and vehicles, new retrofit requirements for existing on-road, off-road, and stationary diesel-fueled engines and vehicles, and new diesel fuel regulations to reduce the sulfur content of diesel fuel as required by advanced diesel emission control systems. Land uses where individuals could be exposed to high levels of diesel exhaust include:

- Warehouses
- Schools with high volume of bus traffic
- High volume highways
- High volume arterials and local roadways with high level of diesel traffic.

In addition to diesel PM, benzene, 1,3-butadiene, acetaldehyde, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, and perchloroethylene pose the greatest existing ambient risk, for which data are available, in California.

Sensitive Receptors and Pollution Sources

Sensitive receptors are facilities where sensitive receptor population groups (children, the elderly, the acutely ill, and the chronically ill) are likely to be located. These land uses include schools, retirement homes, convalescent homes, hospitals, and medical clinics. The major sensitive receptors in Belvedere are schools and residences.

The BAAQMD maintains inventories of stationary sources of both criteria pollutants and TACs. The BAAQMD inventory lists no major emitting facilities for criteria pollutants in Belvedere.

REGULATORY FRAMEWORK

The following federal, state, and local regulations, plans, programs, and guidelines are applicable to the proposed City of Belvedere Housing Element Update and General Plan Update:

- **Federal Laws and Regulations** – Clean Air Act
- **State Laws and Regulations** – California Clean Air Act (CCAA), 1988, California Air Resources Board, Bay Area Air Quality Management District (BAAQMD) Ozone Strategy Plan, Bay Area Clean Air Plan (CAP), consistency with Bay Area 2009 Ozone Strategy (BAOS), Tanner Air Toxics Act, Senate Bill 656

- **Local Laws, Regulations, and Policies** – Transportation Authority of Marin (TAM) Congestion Management Program (CMP) and Moving Forward, A 25-Year Transportation Vision (2003 Transportation Vision) for Marin County

PROJECT IMPACTS AND MITIGATION MEASURES

a) less than significant with mitigation incorporated

CONSTRUCTION EMISSIONS

Construction activities associated with buildout under the proposed Housing Element Update and General Plan Update would include grading, paving, building construction and demolition, and architectural coatings. Construction activities associated with intensification of individual developments and infrastructure improvements in Belvedere would generate pollutants intermittently.

Construction impacts are expected to occur in phases over the planning horizon as new projects and redevelopment projects occur under the guidelines set by the General Plan Update. While the nature of construction activities will depend on a variety of site-specific (e.g., hilly terrain) and project-specific (e.g., extent of necessary grading and excavation) issues, there are four general types of activities that can occur during construction that result in direct and indirect air pollutant emissions:

1. Site clearing and grading. Includes clearing of debris and existing landscaping to produce level development sites, as well as mediation of any contaminated soils. These activities can disturb soil and create direct emissions of dust and particulate matter that can be both a nuisance and a health hazard.

2. Paving of surfaces. Paving parking lots and roadways is a common activity that requires asphalt and other surfacing materials that contain ROGs.

3. Building construction. Involves use of vehicles and other equipment that produce combustion-related emissions of ROG and NOx, as well as particulates and other diesel-related pollutants from off-road equipment, particularly older off-road equipment.

4. Architectural coatings. As primers, sealants, paints, and other coatings are applied to external and internal surfaces, they produce significant amounts of ROGs that are a major contributor to regional ozone formation.

PMC modeled construction-related emissions by using URBEMIS 9.2.4 for a 1-acre construction project. **Table 6** illustrates the profile of emissions that can be expected from a 1-acre development site, applying all BAAQMD rules (see **Appendix A** for a complete list of construction assumptions and resulting mitigation measures used in the model).

TABLE 6
CONSTRUCTION EMISSIONS (1-ACRE PROJECT)

Source	ROG	NOx	PM_{10}	$PM_{2.5}$	CO_2
Construction Emission Estimates (lb/day)	8.57	43.61	7.72	3.54	4,482.65
BAAQMD Significance Thresholds (lb/day)	54	54	82	54	–

Table 6 presents the BAAQMD draft thresholds of significance for construction-related criteria air pollutant and precursor emissions derived from the BAAQMD Draft CEQA Air Quality Guidelines. It is important to note that although the BAAQMD Draft CEQA Air Quality Guidelines have not yet been adopted by the BAAQMD, the use of the draft recommended thresholds were used for the purpose of this air quality analysis. This approach is considered appropriate by BAAQMD staff (Tholen, 2010). Thresholds of significance for construction-related criteria air pollutant and precursor emissions represent the levels at which a project's individual emissions of criteria air pollutants or precursors would result in a considerable contribution to the San Francisco Bay Area Air Basin's existing air quality conditions. If daily maximum emissions of construction-related criteria air pollutants or precursors would exceed any applicable threshold of significance listed in **Table 6**, the proposed project could result in a significant impact.

The BAAQMD Draft CEQA Air Quality Guidelines also establish thresholds of significance for general plan projects in the San Francisco Bay Area Air Basin such as the proposed City of Belvedere Housing Element Update and General Plan Update. The threshold of significance for construction-related criteria air pollutant and precursor impacts is the presence of best management practices (BMPs). If the General Plan does not include the most recent BAAQMD-recommended BMPs in goals, policies, and objectives, as appropriate, construction-related criteria pollutant emissions would result in a significant impact to air quality (BAAQMD, 2009).

The City of Belvedere's proposed General Plan Update contains no applicable policies or actions that specifically address short-term construction related emissions. Therefore, the following mitigation is required.

Mitigation Measures

Add the following General Plan policy:

MM AQ 1 The City shall utilize the thresholds of significance for construction-related criteria pollutant emissions as the absence/presence of Bay Area Air Quality Management District performance-based best management practices. As these best management practices may change over time at the discretion of the Bay Area Air Quality Management District, District staff shall be consulted on a case-by-case basis in order to ensure the most recent best management practices are used.

Due to the temporary nature of construction-related impacts and mitigation measure **MM AQ 1,** which mandates that projects must be in compliance with BAAQMD rules and regulations, these impacts will not result in a violation of an air quality standard or in a substantial contribution to an existing or projected air quality violation. Thus, this impact is considered to be **less than significant** for construction emissions.

OPERATIONAL EMISSIONS

As identified in the setting discussion, the San Francisco Bay Area Air Basin is designated as nonattainment for the federal 8-hour and 1-hour ozone standard, the state 1-hour ozone standard, and the state PM_{10} and $PM_{2.5}$ standards. The Ozone Strategy Plan is a roadmap showing how the San Francisco Bay Area Air Basin will achieve compliance with the state 1-hour air quality standard for ozone as expeditiously as practicable and how the region will reduce transport of ozone and ozone precursors to neighboring air basins. The Bay Area Clean Air Plan (CAP) is a plan to reduce ground-level ozone levels in the San Francisco Bay Area.

A project would conflict with or obstruct implementation of the regional air quality attainment plans (the Bay Area Clean Air Plan and/or the Ozone Attainment Plan) if it is inconsistent with the growth assumptions in terms of population, employment, or regional growth in vehicle miles traveled. These population forecasts are developed, in part, on data obtained from local jurisdictions and projected land uses and population projections identified in community plans. Projects that result in an increase in population growth that is inconsistent with local community plans would be considered inconsistent with the Bay Area Clean Air Plan and the Ozone Attainment Plan.

Certain policies in the proposed Housing Element Update and General Plan Update propose changes to existing densities, as well as changes to land use regulations. However, those policies do not include any specific development designs or proposals, nor do they grant any entitlements for development. According to the Association of Bay Area Government projections, the City of Belvedere is anticipated to grow by merely 50 residents to a maximum buildout population of 2,200 by 2030.

The proposed General Plan Update includes the following policies and associated actions that contain specific performance standards that would improve air quality and assist in attainment efforts: Action SUST-7.1.1; Action SUST-7.1.2; Action SUST-7.3.1; Action SUST-8.2.1; Action SUST-8.2.2; Policy SUST-9.2; Action SUST-9.2.4; Action TRANS-4.4.1; Action TRANS-4.4.2; Action TRANS-4.4.3; Action TRANS-4.4.4.

Subsequent land use activities associated with implementation of the proposed General Plan Update would allow for growth that is generally consistent with the level of growth that is anticipated in the Bay Area Clean Air Plan and the Ozone Attainment Plan. As such, the General Plan Update would not conflict with either of these plans. Thus, impacts associated with a conflict with adopted environmental plans, policies, or regulations for air pollutants, and/or a conflict or an obstruction to implementation of any air quality plan are considered **less than significant.**

Mitigation Measures

None required.

b and c) less than significant

Subsequent land use activities associated with implementation of the proposed Housing Element Update and General Plan Update would result in an increase in population from additional housing and employment opportunities. This increase would introduce additional mobile and stationary sources of emissions, which would adversely affect regional air quality. The San Francisco Bay Area Air Basin, which encompasses the City of Belvedere, is designated as nonattainment for the federal 8-hour and 1-hour ozone standard, the state 1-hour ozone standard, and the state PM_{10} and $PM_{2.5}$ standards.

As previously mentioned, ozone is not emitted directly into the air but is formed through a complex series of chemical reactions between ROG and NO_x, while the principal sources of PM_{10} include fuel burned in cars and trucks, power plants, factories, fireplaces, agricultural activities, and wood stoves. Implementation of the proposed General Plan would result in increased regional emissions of PM_{10} as well as ROG, NO_x, and CO, due to increased use of motor vehicles, natural gas, maintenance equipment, and various consumer products, thereby increasing potential operational air quality impacts.

Increases in operational air impacts with implementation of the proposed Housing Element Update and General Plan Update would generally consist of two sources: stationary and mobile.

A stationary source of air pollution refers to an emission source that does not move (e.g., utilities facilities). Often, stationary sources are defined as large emitters that release relatively consistent qualities and quantities of pollutants. The term "area source" is used to describe the many smaller stationary sources located together whose individual emissions may be low, but whose collective emissions can be significant. Typically, area sources are those that emit less than 25 tons per year of any combination of hazardous air pollutants or less than 10 tons per year of any single hazardous air pollutant.

A mobile source of air pollution refers to a source that is capable of moving under its own power. In general, mobile sources imply on-road transportation, but there is also a non-road or off-road category that includes gas-powered lawn tools and mowers, farm and construction equipment, recreational vehicles, boats, planes, and trains.

An increasing population results in increased demand for services that can also intensify stationary source air emissions. Implementation of the proposed Housing Element Update and General Plan Update would result in an increase in population and operational air pollution impacts beyond present-day levels. While a portion of the operational impacts are related to stationary sources, as discussed below, the greatest increases of PM_{10} are anticipated to come from mobile (vehicles) sources.

URBEMIS analysis was completed to illustrate the maximum daily area source and operational emissions emitted in 2010. **Table 7** contains estimated maximum daily operational emissions based on existing development.

TABLE 7
ESTIMATED UNMITIGATED AIR QUALITY EMISSIONS, EXISTING CONDITIONS

Total Emissions										
Emission Source	Tons Per Year					Pounds Per Day				
	ROG	NO_x	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	PM_{10}	$PM_{2.5}$	CO
Existing 2010 Conditions										
Area Source Emissions	0.17	0.09	0.01	0.01	1.59	1.66	0.60	0.06	0.06	17.31
Vehicle Emissions	14.57	19.36	28.01	5.33	170.78	77.48	91.36	153.41	29.26	909.07
Total Emissions (Existing)	14.74	19.45	28.02	5.34	172.37	79.14	91.96	153.47	29.32	926.38

Notes:

1) *Refer to the Greenhouse Gas Emissions section for discussion of carbon dioxide emissions.*
2) *Existing residential units and nonresidential square feet from Table 2, Project Description as well as Department of Finance estimates (DOF, 2009) were analyzed with the URBEMIS 2007 ver 9.2.4 model.*

Table 8 illustrates the estimated unmitigated air quality emissions under the proposed Housing Element Update and General Plan Update. The growth assumptions used to estimate emissions are based upon the highest density potential in the city. For example, the proposed General Plan would allow for one to three residential units per acre within the Low Density Single Family Residential designation. For the purposes of determining criteria pollutant emissions, it was assumed that all lands designated Low Density Single Family Residential would include the maximum three residential units.

TABLE 8
ESTIMATED 2020 UNMITIGATED GENERAL PLAN AIR QUALITY EMISSIONS AT BUILDOUT

Emission Source	Total Emissions									
	Tons Per Year					Pounds Per Day				
	ROG	NO_x	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	PM_{10}	$PM_{2.5}$	CO
2020 Conditions										
Area Source Emissions	.017	0.09	0.01	0.01	1.59	1.66	0.60	0.06	0.06	17.31
Vehicle Emissions	8.67	9.74	30.47	5.75	94.73	47.38	45.93	166.97	31.57	510.28
Total Emissions (Existing)	8.84	9.83	30.48	5.76	96.32	49.04	46.53	167.03	31.63	527.59

Notes:

1) *Refer to the Greenhouse Gas Emissions section for discussion of carbon dioxide emissions.*
2) *Proposed residential units and nonresidential square feet from Table 2, General Plan Land Use Element were analyzed with the URBEMIS 2007 ver 9.2.4 model.*
3) *According to Belvedere population projections, the city will reach its maximum population between the years 2015 and 2020. For this reason, this air quality analysis studied 2020 conditions.*

Potential emissions resulting from residential buildout and nonresidential development through the year 2020[1] under the proposed General Plan Update are estimated to be 8.84 tons of ROG, 9.83 tons of NO_x, 30.48 tons of PM_{10}, 5.76 tons of $PM_{2.5}$, and 96.32 tons of carbon monoxide annually. While ROG, NO_x, and CO emissions are anticipated to reduce over time, PM_{10} and $PM_{2.5}$ emissions are anticipated to increase as compared to existing conditions. This increase in potential air pollutant emission sources in the city has the possibility to result in exceedances of state and federal air quality thresholds.

The following proposed General Plan policies and associated actions provide mitigation for potential air quality emissions: Policy LU-9.3; Action SUST-1.2.1.; Action SUST-1.2.5; Policy SUST-2.5; Policy SUST-7.1; Action SUST-7.1.1; Action SUST-7.1.2; Action SUST-7.3.1; Action SUST-7.4.5; Policy SUST-8.1; Action SUST-8.1.1; Action SUST-8.1.3; Policy SUST-8.2; Action SUST-8.2.1; Action SUST-8.2.2; Policy SUST-9.2; Action SUST-9.2.1; Action SUST- 9.2.3; Action SUST-9.2.4; Action TRANS-1.2.7. For example, Action SUST-1.2.1 of the Sustainability and Resource Conservation Element requires energy use audits as part of remodels, additions, and major re-landscaping projects, while Action SUST-1.2.5 encourages new residential construction to have roofs that are strong enough for a solar installation or "solar-ready roof." Policy SUST-8.2 of the Sustainability and Resource Conservation Element, as well as its associated actions, improves access to bicycle and pedestrian networks by further improving the public steps and lanes for safe pedestrian use and creating bicycle lanes where feasible that are directed at destination points.

A comparison of **Tables 7** and **8** above shows an anticipated reduction of annual ROG, NO_x, and CO emissions (largely due to anticipated automobile efficiency gains), yet a projected increase of annual PM_{10} and $PM_{2.5}$ emissions as compared to existing conditions. For instance, annual PM_{10} and $PM_{2.5}$ emissions are projected to increase by 2.46 and 0.42 tons respectively. However, implementation of proposed General Plan Update policies identified above and their associated actions would help to reduce these projected emissions.

[1] *According to Belvedere population projections, the city will reach its maximum population between the years 2015 and 2020. For this reason, this air quality analysis studied 2020 conditions.*

Due to the limited land use changes proposed by the Housing Element Update and General Plan Update, the projected increase in particulate matter emissions at buildout of the General Plan Update as compared with existing conditions was analyzed to BAAQMD's draft thresholds of significance for operational-related criteria air pollutant and precursor emissions, which represent the levels at which a project's individual emissions of criteria air pollutants or precursors would result in a significant contribution to the San Francisco Bay Area Air Basin's existing air quality conditions. According to the BAAQMD draft guidelines (BAAQMD, 2009), if annual emissions of operational related criteria air pollutants or precursors would increase to an exceedance 15 tons of PM_{10} or 10 tons of $PM_{2.5}$ emissions, the project would result in a significant impact. As previously mentioned, buildout under the proposed General Plan Update would increase annual PM_{10} and $PM_{2.5}$ emissions by 2.46 and 0.42 tons respectively, over existing conditions. Therefore, this impact is considered to be **less than significant**.

Mitigation Measures

None required.

d) less than significant

CO EMISSIONS

Vehicle trips resulting under the proposed Housing Element Update and General Plan Update would increase traffic volumes at roadway intersections in the city. During periods of near-calm winds, heavily congested intersections can produce elevated levels of CO that could potentially impact nearby sensitive receptors.

The traffic study prepared for the project was assessed to determine whether a CO hot spot is likely to form due to project-generated traffic. CO hot spots are typically evaluated when (a) the level of service (LOS) of an intersection decreases to a LOS E or worse; (b) signalization and/or channelization is added to an intersection; and (c) sensitive receptors such as residences, commercial developments, schools, or hospitals, etc. are located in the vicinity of the affected intersection. In general, CO hot spots would be anticipated near affected intersections because operation of vehicles in the vicinity of congested intersections involves vehicle stopping and idling for extended periods. According to the traffic study prepared for the project, the predicted LOS at all study intersections would not diminish to LOS E as a result of the proposed Housing Element Update and General Plan Update.

As stated in the BAAQMD guidelines (BAAQMD, 2009), impacts to localized CO concentrations would be considered less than significant if:

1. The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans.

2. The project would not result in an affected intersection experiencing more than 44,000 vehicles per hour or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

The proposed Housing Element Update and General Plan Update would not result in an affected intersection experiencing more than 44,000 vehicles per hour or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited, as these sorts of vehicle counts do not exist

in the city. The General Plan Update would not conflict with the applicable congestion management program (see listing of the Transportation Authority of Marin under the Regulatory Framework subsection above). Thus, this impact is **less than significant** for CO emissions.

TAC EMISSIONS

TAC emissions from stationary sources are usually industrial in nature, such as chemical manufacturing facilities and auto body repair shops. Belvedere is predominantly a residential community, with well over 90 percent of its land area either in residential use or zoned residential. Nearly all employment needs, and most residential service needs, are met outside Belvedere.

However, TAC emissions from mobile sources, such as diesel particulate matter, are considered a carcinogenic by California regulatory agencies, and it is recognized that sensitive receivers exposed to high concentrations of diesel particulate matter for many years of duration could experience a significant cancer risk. An example of such a significant cancer risk would be people living for many years next to a heavily used railroad yard or a major highway. However, none of these are present in the Belvedere vicinity.

Furthermore, it is highly unlikely that off-site receptors downwind of temporary construction sites would experience any significant cancer risk directly associated with diesel emissions from the construction project. The assessment of human health cancer risk is typically based on a 70-year exposure period (CARB, 2000). Construction activities are sporadic, transitory, and short-term in nature, and once construction activities have ceased, so too have emissions from construction activities. Because the duration of exposure to diesel exhaust during the temporary construction projects will be much shorter than the assumed 70-year exposure period used to estimate lifetime cancer risks, subsequent construction under the proposed Housing Element Update and General Plan Update is not anticipated to result in an elevated cancer risk to exposed persons due to the short-term nature of construction-related diesel exposure.

Based on these conditions, potential exposure impacts to TACs is considered **less than significant**.

Mitigation Measures

None required.

e) less than significant

The BAAQMD Draft CEQA Air Quality Guidelines classify a project that could create objectionable odors as any of the following: wastewater treatment plant, sanitary landfill, transfer stations, composting facilities, petroleum refineries, asphalt batch plants, chemical manufacturing, fiberglass manufacturing, auto body shops, rendering plants, and coffee roasters. Impacts resulting from odors can result when sensitive receptors (e.g., new residences) are located near the odor sources listed above.

According to BAAQMD Draft CEQA Air Quality Guidelines, for a general plan to have a less than significant impact with respect to odors, buffer zones should be established around existing and proposed land uses that would emit these air pollutants. Buffer zones to avoid odor impacts should be reflected in local plan policies, land use maps, and implementing ordinances. Proposed land use maps for the Belvedere General Plan Update were examined and compared with locations of known sources of odors. In addition, General Plan policies that protect sensitive receptors from these air pollutant sources were identified.

Localized sources of odors could include painting/coating operations or restaurants, including fast-food restaurants. BAAQMD (2009) provides project screening trigger levels for potential odor sources. To avoid significant impacts, the BAAQMD Draft CEQA Air Quality Guidelines recommend that buffer zones to avoid odors and adverse impacts should be reflected in local plan policies, land use maps, and implementing ordinances. Appropriate buffer zones should be established during discretionary project review.

The City of Belvedere does not contain any current land uses that emit odors, and the proposed General Plan Update does not provide for land uses that would allow for such a use. Thus, this impact is **less than significant**.

Mitigation Measures

None required.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
4. BIOLOGICAL RESOURCES. Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan?	☐	☐	☐	☒

EXISTING SETTING

REGIONAL SETTING

The City of Belvedere is located in Marin County, California, on the Tiburon Peninsula in the central portion of San Francisco Bay. The western shoreline of Belvedere borders Richardson Bay, and Belvedere's eastern shoreline is bordered by Belvedere Cove and Raccoon Strait. Richardson Bay is a relatively shallow, biologically rich area which supports heavy recreational and some light commercial watercraft use, particularly offshore of the City of Sausalito, west of the City of Belvedere. Boat traffic along the eastern shoreline of Richardson Bay, adjacent to the City of Belvedere, consists primarily of light residential recreational boat use. Raccoon Strait is a deep, narrow natural channel between the eastern shore of Belvedere and Angel Island. Raccoon Strait connects San Pablo Bay and central San Francisco Bay to the north, with Richardson Bay and the Golden Gate to the south. Belvedere Cove is a small inlet between the

City of Belvedere and Raccoon Strait, and contains the one of the cities two major yacht clubs along with several residential docks.

Two nearby creeks are listed as salmonid-bearing streams by the National Marine Fisheries Service: Arroyo Corte Madera del Presidio, which empties into Richardson Bay, and Corte Madera Creek, which enters San Francisco Bay at the Larkspur Ferry Terminal in Larkspur. Both watersheds provide important fish habitat, and salmonids have been documented to occur in the Arroyo Corte Madera del Presidio and Corte Madera Creek. No known or potential salmonid creeks are present within the City of Belvedere, though recent salmonid tracking studies have indicated that Raccoon Strait provides a movement corridor for migrating salmonids in San Francisco Bay.

Several ecological preserves have been designated in areas surrounding the City of Belvedere to conserve natural resources. Northwest of Belvedere between Tiburon, Corte Madera, and Mill Valley is the Ring Mountain Open Space Preserve. The Ring Mountain Preserve is managed by Marin County and provides valuable habitat for native wildlife, riparian species, and vegetation communities, particularly those associated with serpentine soils. The Tiburon Uplands Nature Preserve and Old St. Hilary's Open Space Preserve are located in eastern Tiburon, just northeast of Belvedere. These preserves provide habitat for the rare Tiburon jewelflower (*Streptanthus niger*) as well as other native plant species along with oak and bay woodland communities.

The Richardson Bay Audubon Center and Sanctuary, located off the western shore of the City of Belvedere, is a marine reserve established to preserve habitat for marine and estuarine bird species. The Audubon Sanctuary restricts boat traffic within its boundaries, which encompass 900 acres of Bay waters extending from the tip of Strawberry Point East to Belvedere and north to Blackie's Pasture. These boundaries do not prohibit residents of the Belvedere shoreline from accessing private docks by boat. Preserve boundaries and other biologically significant areas in the region are shown in **Figure 3.**

Two navigational channels have been established and are maintained within the waters of Belvedere Cove. One is located in the western portion of Belvedere Cove along Belvedere Island, and the other, the Limbach Channel, runs along the eastern shore of Belvedere Cove, along Corinthian Island. In addition to these existing channels, the West Shore Channel has been identified as a potential navigational channel along the western shoreline of Belvedere to provide improved boat access to residents of West Shore Road.

LOCAL SETTING – CITY OF BELVEDERE

The City of Belvedere consists of three primary areas of biological significance: Belvedere Island, Corinthian Island, and the Belvedere Lagoon. Corinthian Island is located in the eastern portion of the City of Belvedere and shares its northern boundary with the City of Tiburon. Belvedere Island is located in the southwestern portion of the city and was historically connected to the mainland through a small strip of land and a drawbridge. Belvedere Lagoon was created shortly after World War II. Belvedere Lagoon is currently completely enclosed, and water levels are controlled by a pump station and tidal gates along San Rafael Avenue. The pump station and tidal gates take water into Belvedere Lagoon during the summer months and pumps water out of the lagoon during the winter months. Extensive residential housing is present along the shoreline of Belvedere Lagoon, and the waters of Belvedere Lagoon are treated with dyes to control algal growth.

Figure 3
Regional Biologically Significant Areas

PMC

The majority of the City of Belvedere supports residential development. This is important from a biological perspective because the presence of extensive existing development limits the potential for biological species impacts because habitat for most sensitive biological species is not present. The most significant biological resource values present in the City of Belvedere are the offshore waters in the San Francisco Bay. Approximately 71 of 129 parcels with shoreline access currently have docks that extend into the Bay. The shoreline of Belvedere is characterized by natural bedrock with limited areas of riprap. Just below Mean High Water (MHW), the shoreline comprises mixed sand and mud containing some man-made material originating from shoreline armoring. Much of the shoreline in the City of Belvedere is very steep, making direct shoreline access difficult. Some small areas of shoreline, such as along San Rafael Avenue, comprise riprap.

REGULATORY FRAMEWORK

The following federal, state, and local regulations, plans, programs, and guidelines are applicable to the proposed City of Belvedere Housing Element Update and General Plan Update:

- **Federal Laws and Regulations** – Section 401 and 404 of the Federal Water Pollution Control Act Amendments of 1972 (Clean Water Act), Federal Endangered Species Act of 1973 and amendments (FESA), Magnuson-Stevens Fishery Conservation and Management Act, Migratory Bird Treaty Act of 1918 (MBTA)

- **State Laws and Regulations** – State of California Porter-Cologne Act, California Endangered Species Act (CESA), California Department of Fish and Game Code, California Environmental Quality Act (CEQA)

- **Local Laws, Regulations, and Policies** – McAteer-Petris Act and Bay Conservation and Development Commission's (BCDC) Bay Plan, Richardson Bay Special Area Plan, Long Term Management Strategy for Disposal of Dredged Material in the San Francisco Bay (LTMS), Richardson Bay Dock and Boat Study

PROJECT IMPACTS AND MITIGATION MEASURES

a) less than significant

Though many special-status plant and wildlife species are known to occur in the vicinity of the City of Belvedere, the potential for special-status species that utilize terrestrial habitats in the city is limited by the prevalence of existing residential development within the city. Most of the potential impacts to biological resources present in the city are associated with aquatic habitat in San Francisco Bay. Based on a review of background literature and habitat conditions within the City of Belvedere, the following species have the potential to be present:

- Pacific harbor seal (*Phoca vitulina*), no designation, regulated by NMFS under the Marine Mammal Protection Act

- California sea lion (*Zalophus califonianus*), no designation, regulated by NMFS under the Marine Mammal Protection Act

- Pallid bat (*Antrozous pallidus*), State Species of Special Concern

- Chinook salmon (*Oncorhynchus tshawytscha*), Essential Fish Habitat

- Steelhead trout (*Oncorhynchus mykiss*), Federal Threatened
- Green sturgeon (*Acipense medirostris*), Federal Threatened
- Longfin smelt (*Spirinchus thaleichthys*), State Threatened
- Pacific herring (*Clupea pallasi*), no designation, regulated by National Marine Fisheries Service and meets criteria set forth in Section 15380 of the CEQA Guidelines
- Olympia oyster (*Ostrea conchaphila*), no designation, regulated by NMFS and meets criteria set forth in Section 15380 of the CEQA Guidelines

The new development and redevelopment in terrestrial areas has the potential to impact pallid bat through removal of roost habitat during construction and impact non-special-status bird species covered under the Migratory Bird Treaty Act (MBTA) if construction results in removal of nesting habitat during the breeding season (February 1 through August 31 of a given year). Development and redevelopment of docks and other structures in aquatic areas offshore of the city have the potential to impact special-status fish, bivalves, and marine mammal species through visual or acoustic disturbance or alteration of habitat.

Implementation of the project will not directly impact special-status plant and animal species. The update does anticipate the development of new dwellings and additional remodeling construction activities, which have the potential to impact special-status species. The General Plan sets forth policies and design standards that need to be met through submittal of a site-specific application for development of new areas and expansion of existing development. Potential project-specific impacts to biological resources and potential mitigation for those impacts would be addressed on a case-by-case basis based on those proposals and under the guidance of the policies set forth to protect biological resources as part of the updated General Plan. Proposed General Plan policies SUST 10.1, SUST 10.2, SUST 10.3, SUST 10.4, and SUST 12.2 would reduce the potential effects of impacts to special-status plant and animal species by ensuring that future development avoids impacts to special-status species. This impact is considered to be **less than significant.**

Mitigation Measures

None required.

b) less than significant

The most important biotic communities in the City of Belvedere are the eelgrass (*Zostera marina*) and other aquatic marine habitat along the shoreline and in the surrounding waters. These biotic communities are designated Essential Fish Habitat by the National Marine Fisheries Service due to the important role they play in the life history of native fish species. The city is known to contain two freshwater intermittent streams, which are also considered sensitive biotic communities. There are no known areas of wetland habitat in the city. Some small areas of wetland may be present along the stream channels, but existing landscaped residential development, together with a steep, rocky shoreline and shoreline armoring in places, make it unlikely that natural wetlands of a significant size are present in the city. Native oak trees are known to occur; however, existing residential development is too dense to allow for a true oak woodland community in the City of Belvedere and these areas are therefore not considered a sensitive biotic community under CEQA.

Coastal development for the city includes, but is not limited to, home development and remodeling, dock replacement and installation, pile replacement and installation, boat hoist installation, dredging, shoreline stabilization, and tree removal and landscaping. Direct impacts to the two intermittent streams and wetlands that may be associated with those stream courses could occur from remodeling homes, further development or expansion of docks and boat hoist installation facilities, pile replacements, and shoreline stabilization and dredging, all of which could divert or culvert an existing open stream channel. Potential indirect impacts to these areas could occur from vegetation removal along streams and if impervious surface or heavily landscaped areas are placed in close proximity of the streams. The new development and redevelopment also have the potential to directly impact sensitive biotic communities through take or loss of subtidal marine habitat due to shading of habitat, dredging, pile placement, and conversion of habitat. In addition, sensitive biotic communities may be indirectly impacted through minor increases in boat traffic if new docks are installed or expanded.

Implementation of the project would not directly impact sensitive biotic communities. The update does anticipate the development of new dwellings and additional remodeling construction activities, which have the potential to impact sensitive biotic communities if construction is proposed near a wetland or stream area or in offshore waters of San Francisco Bay. The General Plan sets forth policies and design standards that need to be met through submittal of a site-specific application for development of new areas and expansion of existing development. Potential project-specific impacts to biological resources and potential mitigation for those impacts would be addressed on a case-by-case basis based on those proposals and under the guidance of the policies set forth to protect biological resources as part of the updated General Plan. Proposed General Plan policies SUST 10.2, SUST 10.3, SUST 10.4, SUST 10.5, SUST 10.6, SUST 11.1, SUST 12.3, and SUST 12.4 would reduce the potential effects of impacts to sensitive biotic communities by helping to avoid or mitigate for impacts to biotic communities. This impact is considered to be **less than significant.**

Mitigation Measures

None required.

c) less than significant

Two streams are documented to occur in the city. One originates from the hillside north of Tiburon Boulevard and empties into a stormwater basin before flowing through a drop structure and culvert into Belvedere Lagoon. The second stream appears on USFWS National Wetlands Inventory (NWI) maps and flows through the western edge of the city at San Rafael Avenue and Tiburon Boulevard. No wetlands are mapped as present on the USFWS NWI maps, and no areas of wetlands are known to occur in the City of Belvedere. Additionally, NWI maps show unconsolidated shoreline off the shore of the city as well as deepwater marine habitats and the Belvedere Lagoon, which has been classified as a lake. These offshore areas and the Belvedere Lagoon are considered Waters of the U.S. and are therefore regulated by the U.S. Army Corps of Engineers and Regional Water Quality Control Board. The Bay Conservation and Development Commission (BCDC) has jurisdiction over areas of tidal waters within the City of Belvedere as described in the BCDC Bay Plan and Richardson Bay Special Area Plan. However, it should be noted that BCDC does not have jurisdiction over Belvedere Lagoon because it was in existence prior to the adoption of the McAteer-Petris Act.

As described above, implementation of the project would not directly impact Waters of the U.S., but the update does anticipate the development of new dwellings and additional remodeling construction activities. This new development and redevelopment has the potential to impact

Waters of the U.S., including wetlands, if construction is proposed near a wetland or stream area or in offshore waters of San Francisco Bay. The General Plan sets forth policies and design standards that need to be met through submittal of a site-specific application for development of new areas and expansion of existing development. Potential project-specific impacts to biological resources and potential mitigation for those impacts would be addressed on a case-by-case basis based on those proposals and under the guidance of the policies set forth to protect biological resources as part of the updated General Plan. Proposed General Plan policies SUST 6.5, SUST 10.2, SUST 10.4, SUST 10.5, SUST 10.6, SUST 11.1, and SUST 12.3 would reduce the potential effects of impacts to jurisdictional waters of the U.S. by helping to avoid or mitigate for potential impacts. This impact is considered to be **less than significant.**

Mitigation Measures

None required.

d) less than significant

The City of Belvedere primarily comprises developed and landscaped residential land. This limits the value of the area for wildlife movement and plant dispersal for terrestrial species. However, based on the recent Belvedere deer study (WRA Environmental Consultants, 2008), some movement of wildlife species that are tolerant of human disturbance may occur along existing creek corridors and along the shoreline of Belvedere. However, potential impacts to movement of these terrestrial species along existing creek corridors would be less than significant because these creek corridors do not meet the primary definition of a movement corridor since they do not connect two larger areas of open space. In addition, the existing trees in the City of Belvedere could serve as "stepping stone" dispersal habitat for migratory bird and bat species. However, the development and redevelopment anticipated under the updated General Plan are not likely to remove a large enough quantity of trees to significantly impact this stepping stone dispersal habitat.

Special-status aquatic species are known to occur offshore of Belvedere and utilize the waters within the General Plan Planning Area as a migratory corridor between the Pacific Ocean and Sacramento River. Potential significant impacts to the movement of these species could occur from water-dependent development such as dock installation and dredging. Potential future impacts, such as pile driving, would require individual assessments and subsequent individual mitigation recommendations to reduce potential impacts to a less than significant level.

The updated General Plan is not anticipated to result in significant impacts to terrestrial or avian wildlife movement. However, development and redevelopment that occurs along the shoreline may impact movement of aquatic species. The General Plan sets forth policies and design standards that need to be met through submittal of a site-specific application for development of new areas and expansion of existing development. Potential project-specific impacts to biological resources and potential mitigation for those impacts would be addressed on a case-by-case basis based on those proposals and under the guidance of the policies set forth to protect biological resources as part of the updated General Plan.

Proposed General Plan Policies SUST-2.2, SUST-10.1, SUST-10.2, SUST-10.4, SUST-10.5, SUST-10.6, SUST-12.1, SUST-12.3, and SUST-12.4 would reduce the potential effects of impacts to wildlife movement and plant dispersal by providing policies and action items that would help avoid or mitigate for potential impacts to wildlife movement corridors. This impact is considered to be **less than significant**.

Mitigation Measures

None required.

e–f) no impact

The City of Belvedere General Plan and Housing Element Updates do not propose significant changes to the existing nature and size of development in the City of Belvedere. Specific plans, ordinances, and policies pertaining to biological resources include the LTMS, BCDC Bay Plan, Richardson Bay Special Area Plan, and Richardson Bay Dock and Boat Study. Currently, there are no Recovery Plans or Habitat Conservation Plans that cover species in the General Plan Planning Area. The updated General Plan does not propose any policies that would conflict with these local plans and policies. Additionally, the General Plan Update includes policies that support the goals of these regional and local plans and policies. Therefore, **no impact** will occur due to conflicts with existing plans, ordinances, and policies through the adoption of the Belvedere General Plan Update.

Mitigation Measures

None required.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
5. CULTURAL RESOURCES. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☐	☒	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

EXISTING SETTING

There are five recorded prehistoric sites located in the City of Belvedere: CA-Mrn-35, CA-Mrn-39, CA-Mrn-40, CA-Mrn-41, and CA-Mrn-649.

The time from 1901 to 1925 marks the beginning of systematic studies of shellmound sites in the Bay Area (Roop & Evans, 2009). Most of the work was carried out by Nels Nelson, Max Uhle, W. E. Schenck, and L. L. Loud, among others, all of whom were associated with the University of California at Berkeley. The U.C. research program involved surveying the entire estuarine system as well as excavations at a number of the largest sites. Over 400 shellmound sites were recorded as a result of these efforts, most of which were documented by Nels Nelson. Included among these were Nelson's numbers 35, 39, 40, and 41, which are located in Belvedere.

There are no historic archaeological sites that have been recorded in the City of Belvedere; however, there are numerous historic structures, buildings, or objects that have been identified and placed on various registers. Most are listed in the Directory of Properties[2] in the Historic Properties Data File for Marin County that is maintained by the California Office of Historic Preservation (OHP) and commonly referred to as the HRI. The OHP maintains a statewide inventory of historical resources identified through federal and state programs, including local government historical resource surveys. The California Historic Resources Information Systems (CHRIS) includes the HRI, information on resources that has been acquired and maintained by the OHP since 1975, and other information and records maintained by the various information centers, such as the Northwest Information Center (NWIC) that maintains archaeological information for Marin County. In 1993, the NWIC acquired the built environment inventory that

[2] *This list is also referred to as the Historic Resource Inventory list (HRI), because it is an inventory of historical resources identified through federal and state programs, including local government historical resource surveys. It is essentially a built environment inventory that is separate from the archaeological inventory; and unlike the archaeological inventory, this inventory is not restricted to the public. The HRI list also includes properties listed on the National Register of Historic Places, National Historic Landmarks, California Register of Historical Resources, California Registered Historical Landmarks, California Points of Historical Interest, Determinations of Eligibility and Historic Surveys (OHP 2006).*

had previously been maintained by the OHP and now maintains inventories for both the archaeological and built environments.[3]

BELVEDERE LAGOON

In the 1920s, spoils dredged out from Belvedere and Tiburon coves and excess soil from the construction of Tiburon Boulevard was discarded into the lagoon, creating mudflats that soon became a haven for mosquitoes. In 1936, Harry B. Allen, who developed San Francisco's Sea Cliff, purchased the Belvedere Land Company and formed a plan to dredge the lagoon and create peninsulas on which houses would be built. He went to work that year and again after World War II dredging the lagoon and creating peninsulas using soil from Red Hill, as well as a nearby large Indian mound[4] and a large knoll of the former Belvedere Golf & Country Club[5] property. He also installed a conduit under San Rafael Avenue changing the inlet from Belvedere Cove to the north end of the lagoon. Modest homes were built on the newly formed peninsulas. In the late 1930s, a few small cottages were built along Lagoon Road near San Rafael Avenue and Hilarita Circle, but the majority of the lagoon homes were built after WWII. A model house was built in 1949, designed by George Rockrise (Roop & Evans, 2009), a prominent Bay Area architect. Allen's plan was to create 243 home sites and 30 duplex sites with 66 acres of calm water. His plan was first met with skepticism, but within a decade "the public realized the potential beauty and charm of lagoon living and parcels were reselling for $30,000 to $40,000" (Roop & Evans, 2009), and in the 1950s, Belvedere Lagoon received national attention for its design as a shoreline community. It was featured on a national television show where there was an on-site interview with Harry Allen (Roop & Evans, 2009). Additionally, several prominent architects of the time designed homes in the Lagoon Area.[6]

Today, Belvedere Lagoon covers about 66 acres and has an average depth of 5 feet. It is surrounded by 261 lots, including 232 single-family homes, 28 duplexes, and the Belvedere Lagoon Property Owners Association's (BLPOA) boatyard.[7]

ARKS

Beginning in 1880, recreational houseboat living became popular among sea captains, artists, vacationers, and wealthy bachelors from San Francisco as a way to reside and vacation in Belvedere. These houseboats were called arks, and Belvedere Cove was often referred to as "Arktown" or "Ark Cove" (Roop & Evans, 2009). The origin of the term *ark* is not known but it was coined to describe the "California houseboat," which had all the amenities of a typical east

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[3] The Primary Record system is a numbering system utilized by the Information Centers in accessioning all records into the CHRIS and was developed as a means of combining the archaeological inventory with the built environment inventory.

[4] Betty Goerke reports that the soil was taken from CA-Mrn-35 (2007:15). William Wallace reported that soil was taken from CA-Mrn-39 and used for fill in the lagoon (1939). It is likely that soil was taken from both sites and used as fill in the lagoon. It is likely that Hilarita Circle and portions of Lagoon Road were filled using soil from CA-Mrn-35, which is adjacent.

[5] The Belvedere Golf & Country Club operated up to the Depression Era when it went bankrupt and closed in 1934 (Farley et al., 1970). Harry Allen subdivided the former golf course property and built houses. There is a large Indian site near the former golf club that may be the "large knoll" where soil was removed to fill the lagoon.

[6] Some of the prominent architects and firms of the period that designed homes in the Lagoon Area included George Rockrise, Charles Callister, Joseph Eichler, and the architectural firms of Campbell & Wong and Jones & Emmons.

[7] The BLPOA owns and manages Belvedere Lagoon.

coast houseboat but differed in shape. The flat bottom shape of the California arks may have derived from the floating cabins commonly used in California by hunters in the 1880s.

Arks were typically built in boatyards around the Bay Area so they often resembled a ship cabin with flat or sometimes arched roofs, ceilings, floors, sliding windows, skylights, and tongue-and groove-cladding. Most arks had rooflines that extended over the decks, and on the decks were a water barrel or tank and maybe an ice cooler. Privies were often built hanging halfway over the deck side. Arks were rustproof, waterproof, and mosquito-free (Roop & Evans, 2009).

The arks floated around the cove in the summer and returned to the lagoon for the winter. "Story has it that the raising of the drawbridge for arks and boats to go from winter harbor on lagoon to summer fun on the Cove began the tradition of 'Opening Day on the Bay,' a spring parade of ships" (Roop & Evans, 2009). The drawbridge was raised again in mid-October to allow the arks back into the lagoon for a safe winter harbor. It was reported that from the 1880s to the 1920s as many as 40 arks would make this trek (Roop & Evans, 2009).

After 1900, ark living became less popular and the houseboat population in Belvedere Cove declined. Some arks were docked along the lagoon and cove shores and converted into permanent housing. Others were towed into Sausalito, Corte Madera, Greenbrae, and other nearby shoreline communities (Roop & Evans, 2009). Some arks became year-round or temporary homes to displaced San Franciscans, whose homes in the city were destroyed in the 1906 earthquake and fire. In fact, after the earthquake, ark living was somewhat revitalized as people came to realize that an ark would be less affected by fire and earthquakes, but this time arks were secured to the shorelines of the lagoon or supported by pilings, as the days of their pure recreational use waned. Ark living remained popular in Belvedere until the 1920s (Roop & Evans, 2009). The last ark was removed from the lagoon in 1946 (Roop & Evans, 2009).

There are two arks currently located within the City of Belvedere, and there are others located in Tiburon. There may be additional arks located in unknown locations in the city. In Belvedere there is an ark at 5 Beach Road and the Hilton Ark (aka The Ark "Alice") at 12 Laurel Avenue, which was built by a German cabinetmaker in 1905 and later moved to its current location (Roop & Evans, 2009). The ark at 5 Beach Road was not moved there until after 1946. In the Town of Tiburon, the portion of Main Street that skirts the north side of Corinthian Island is referred to as "Ark Row" and there are several arks located there, including the "Double Ark" at 116 Main Street, which has an arched roof and four Corinthian capitals, and the circa 1895 ark at 104 Main Street, which is a typical four-room ark with a flat roof, bead-and-reel molding, and slender Corinthian columns (Roop & Evans, 2009).

CORINTHIAN ISLAND

Corinthian Island is located between Belvedere Island and Tiburon. The west half of the island, including the Corinthian Yacht Club building, is located in the City of Belvedere; the remaining portion, including Ark Row, is located in the Town of Tiburon. Like Belvedere, Corinthian Island has also been called by several different names, including "little peninsula island," "Valentine's Island," and "small island." The island was originally part of John Reed's Rancho Corte Madera del Presidio. It became the property of Thomas B. Valentine in the 1870s.

In 1886, the Corinthian Yacht Club was organized in San Francisco and, due to its beauty and prime location, the point of Valentine's Island was chosen as the location for their new clubhouse. The one-acre parcel at the end of the island was leased for $12 per year, but may have been purchased outright by the members of the club for a cost of $250 (Roop & Evans, 2009). The founders wanted a club that emphasized amateur small-boat sailing and racing, as

opposed to large-boat sailing. It was reported that "the name 'Corinthian' was intended to evoke the image of 'ancient amateur athletes' " (Roop & Evans, 2009). The members of the newly formed club built a small wood clubhouse on the point that was painted red and called the "Red House." W. C. Moody was the club's first commodore. The original structure burned down in 1909 and was replaced by the current structure in 1912 (Roop & Evans, 2009).

In 1907, the founders of the Corinthian Yacht Club purchased the island from Valentine's widow and formed the Corinthian Island Company for the sole purpose of subdividing and developing the island (Roop & Evans, 2009). The planned development included 97 residential lots and the point that included the Corinthian Yacht Club. Fresh water was supplied directly to the home sites, and the lot advertisements of the day boasted the availability of telephone and electricity to each home site. Homes were first constructed on the west and southwest sides of the island facing Belvedere Cove, but homes were soon built on the top and east sides of the island. The notable stone columns that lie at the entrance to Corinthian Island were erected in 1913 by the Corinthian Improvement Club, which was established in 1910 to beautify the island by landscaping and improving the roads, lanes, and park (Roop & Evans, 2009).

Founders of the Corinthian Yacht Club and the Corinthian Island Company were some of the first to construct homes on the island. In 1908, Frederick Kelley built the large Mediterranean-style villa at 85 Bellevue Avenue, and Sidney Plant built the white house on the point above the yacht club. The following year, J. H. Kelley built the Craftsman-style house at 38 Alcatraz Avenue. Among the first people to purchase lots from the Corinthian Island Company and move onto the island were Mr. And Mrs. Harry Masterson, Mr. and Mrs. Henry Estabrook and the Chamberlains at 12, 47 and 49 Alcatraz Avenue. The Estabrooks later purchased the large white home on the point built by Sidney Plant.

In the original subdivision of Corinthian Island, the boundary between the City of Belvedere and the then unincorporated Tiburon was ignored. The original corporate boundary was established by the Belvedere Land Company. The Belvedere Land Company wanted the maintenance of the drawbridge to be left to the county and drew the city limits just west of it. Their decision to draw the city boundary along the ridge through the middle of the island is not clear, but according to David Allen, the boundary was drawn to follow tide lots (Roop & Evans, 2009). When Tiburon incorporated in 1964, they annexed the eastern part of Corinthian Island, following the corporate boundary established by the Belvedere Land Company; however since this boundary was ignored in the original subdivision, several parcels were divided between the two municipalities. It wasn't until 1973 that the boundary between the City of Belvedere and the Town of Tiburon was adjusted to conform to property lines so that no one property extended across two municipalities (Roop & Evans, 2009).

ARCHITECTURAL STYLES OF BELVEDERE

Historic structures are important cultural resources that can add to the visual interest of an area and may even define a community. Historic structures can provide community character, foster community pride, preserve environmental beauty, increase real estate value, and pull a community together.

A variety of architectural styles are represented within the community of Belvedere. Many structures were designed by famous architects or are well-constructed buildings that embody a specific architectural style. Others have been remodeled by prominent architects. Architects often took advantage of the natural setting of Belvedere, creating vertically designed homes with impressive views.

Some of the famous architects of the past who have designed homes or other structures in Belvedere include Julia Morgan, Willis Polk, Clarence Ward, George Rockrise, Charles Callister, Joseph Esherick, Joseph Eichler, and the architectural firms of Campbell & Wong and Jones & Emmons, as well as numerous structures by Albert Farr. Neal McLean was a local builder responsible for many structures in Belvedere in the late 1800s and early 1900s, and his brother Dan McLean was a builder who constructed several homes in Belvedere around the same time, including the Evans House, the Farr Cottages, the Pagoda House, the "Crows Nest," and others.

Architecture styles of the buildings located in Belvedere and some of the hallmarks of these architectural styles are as follows:

Queen Anne – Popular circa 1880 to 1910. This building style incorporates an asymmetrical façade usually with a dominant front-facing gable, steeply pitched roof, patterned shingles, extensive trim, cutaway bay windows, stained glass windows, and a partial, full-length, or wraparound front porch. Some examples have towers, spindle work, or half timbering.

Bay Tradition – Bay Tradition style evolved in the 1930s by incorporating modernist ideas but utilizing native woods (particularly redwood), large windows, and open, airy spaces that allowed comfortable contact with the outdoors. In the 1940s and 1950s, the Bay Tradition style was popularized by Sunset Magazine, which began in the Bay Area. Although the Bay Tradition fell out of favor by 1970, its influence remains widely visible. Bay Tradition evolved out of the Craftsman style and movement, but had local roots. The style favored the use of native materials and was inspired by Spanish missions and California's vernacular architecture such as barns and ranch houses. The architects turned away from the exterior ornamentation of the Victorian style and aimed at a more rustic appearance. Interiors were detail-oriented with a lot of redwood paneling and other detailed wood design elements.

Shingle – Popular circa 1880 to 1900. These structures have wall cladding and a roof of continuous shingles, and the shingled walls do not have an interruption at the corners. They usually have an asymmetrical façade, irregular and steeply pitched roofline, multi-level eaves, and extensive porches. Towers or gambrel roofs are sometimes included.

Greek Revival – Popular circa 1825 to 1860. None of the examples on Belvedere are this old. Greek Revival style incorporates a low pitched gabled or hipped roof, cornice lines emphasized with trim, an entry or full-length porch supported by square or rounded columns, and even spacing on windows. Examples usually have ornate door surrounds and plain window surrounds.

Classical Revival – Popular from 1895 to 1915. This style was based on ancient Greek architecture. Buildings are of large size with massive columns and classical Greek or Roman influences.

Colonial Revival – This style took elements from the earlier forms of architecture such as Georgian, Adam, and Dutch Colonial and combined them with Queen Anne features, such as expansive interiors, big porches, multiple roof lines, and flexible floor plans. Often Georgian symmetry returned as opposed to the asymmetrical façade of the Queen Anne style structures. One- to three-story examples were built. The front doors are usually accentuated and have a decorative crown and a front porch supported by slender columns. Subtypes include Georgian Revival, Adam Revival, and Dutch Colonial Revival, each form based on whatever earlier style they drew from.

Craftsman – Popular circa 1905 to 1930. These structures have low pitched roofs, wide eave overhangs, roof rafters exposed, decorative false beams or braces under gable ends, full or partial front porches, tapered square columns supporting porch roofs, and stone or brick chimneys.

Storybook Style – Popular in England and the United States in the 1920's. The storybook style is a nod toward Hollywood design technically called Provincial Revivalism and more commonly called Fairy Tale or Hansel and Gretel. The primary architects that worked in this style are: Harry Oliver, W.R. Yelland, W.W. Dixon and Carr Jones among many other local architects.

Mission Revival – Popular in California from 1893 to 1915. Mission Revival structures were built to celebrate the mission past of the state. These structures incorporate stucco exteriors, tile roofs, and a curvilinear parapet on gable ends. A quatrefoil or other shaped cutout in the gable and arched windows, colonnades, and doorways are often present.

Mediterranean Revival – Popular from 1900 to 1930. These structures have stucco exteriors and tiled roofs and were inspired by Spanish and/or Italian structures.

Tudor – Popular from 1890 to 1940. Tudor-style buildings have half-timbered exteriors, cross-gabled, steeply pitched roofs, dormers, and clusters of tall, narrow windows, often with divided panes.

In the Lagoon Area, a variety of post-war contemporary-style homes, including International, Ranch, Contemporary and Minimal Traditional, were built in the 1940s through the 1960s. Some of the prominent architects who designed lagoon homes include George Rockrise, Charles Callister, Joseph Eichler, and the architectural firms of Campbell & Wong and Jones & Emmons.

Post War Contemporary – Post war houses usually are one story, emphasizing horizontal living, and they have low pitched roofs, lots of glass allowing in light and views, and ground-level front porches. They often have an attached garage or carport. Subtypes include the Ranch style, which are asymmetrical homes with low pitched roofs and a maximized front façade; and Minimal Traditional, which bring in elements of earlier traditional styles, but are small with low pitched roofs and a large chimney. Split-level houses have elements of the Ranch style, but with a second story over just a portion of the house or the garage.

International – These structures have flat roofs and flat walls, the windows and doors are without decoration, and often they have large areas of glass windows.

Ranch – These houses are one-story, asymmetrical, and usually cross-gabled with the garage integrated into the structure.

Contemporary – These structures have flat or low pitched gabled roofs, lack decorative detailing, and usually include a combination of wall cladding materials such as brick, wood, and stone.

Minimal Traditional – Minimal traditional homes were small, usually one-story buildings that reflect earlier eclectic styles, but lack decorative details.

The built environment is not restricted to buildings. Belvedere also has a number of features such as railings, fence posts, gates, and other decorative details that may be of historic significance. Examples include the pillars at the entry to Corinthian Island, Chinese pagoda elements on railings and arches, and the original entry gate to the Blanding Estate that was designed by Julia Morgan.

Beyond the architectural importance, many structures are associated with prominent persons of the past. The past owners, as well as the architect and builder, are important elements of history, and evaluations of the potential significance of a building should include a review of past owners, as well as associated architects and/or builders. For example, the famous California painter William Keith lived in Belvedere for a while and had an influence on the design of his house; this would be of significance to the history of the house where he lived.

ARTISTS AND ARCHITECTS OF BELVEDERE

Several notable artists and architects have resided in Belvedere or have contributed to the architectural resources that exist on the Island. The association of the lives of any one of these individuals could contribute to a resource's eligibility for listing to the National Register of Historic Places, the California Register of Historic Resources, or the local register.

Some[8] of the more prominent painters who resided in Belvedere include Gottardo Piazzoni (1872–1945), known as the "dean of Bay Area artists" and who in the 1920s lived in a "cabana" that at one time was located adjacent to the China Cabin; Seldon Giles (1877–1946), a member of the Bay Area "Society of Six"[9] who resided at 7 Beach Road, where several of his now valuable paintings were found after his death; and William Keith (1838–1911), known as the "old master" of California painters, who lived on Golden Gate Avenue.[10] As listed above, some of the more famous architects of the past that have designed homes or other structures on Belvedere include Willis Polk (1867–1924), Clarence Ward (1884–1973), Julia Morgan (1872–1957), George Rockrise (1917–2000), Albert Farr (late 19th century–1947), Charles Warren Callister (1917–2008), Joseph Eichler (1900–1974), and the architectural firms of Campbell & Wong and Jones & Emmons.[11] Other prominent artists include the writer Gertrude Atherton (1857–1948), sculptor David Lemon (1908–1997), and the painter, muralist, and sculptor Ralph Stackpole (1885–1973).

Two locations on Belvedere specifically attracted artists, Beach Road and the old cod fishery along the west side of Belvedere. After the cod fishery burned in 1937, the remaining structures were sold to Howard Allen of the Belvedere Land Company and converted into housing. In 1940, David Lemmon and his wife Jerry O'Day[12] rented a home and studios where they maintained a gallery from 1940 to 1965. It soon became a gathering place and home for other artists. Tenants also included cartoonist Justin Murray, artist Jerry Miller, and ceramists Jack Brinker (Roop & Evans, 2009). In 1952, a large landslide hit the place and pushed the largest of the remaining structures onto the beach, displacing three families. David Lemmon and Jerry O'Day's former bunkhouse home was spared and they continued to live there until 1965.

REGULATORY FRAMEWORK

- **Federal Laws and Regulations** – Antiquities Act of 1906, National Park Service Act of 1966, Historic Sites Act of 1935, Section 106 of the National Historic Preservation Act (NHPA) Reservoir Salvage Act of 1960, Department of Transportation Act of 1966 (Section 4(f)), National Environmental Policy Act of 1969, Archaeological and Historic Preservation Act

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[8] The following list of painters, sculptors, writers, and architects is not meant to be a complete list of artists and architects who have lived in Belvedere or contributed to its architectural resources but are some of the more prominent ones.

[9] The "Society of Six" was formed in 1917 by several Northern California artists including Selden Gile, Maurice Logan, William Clapp, August Gay, Bernard Von Eichman, and Louis Siegriest. They were also known as the "Oakland Six." These plein air artists "created a color-centered modernist idiom that shocked establishment tastes but remains the most advanced painting of its era in Northern California" and their work is regarded as the "first fully evolved reflection of modern art on the West Coast" (Boas 1997).

[10] Gordon Blanding, who was once the wealthiest man in California, was Belvedere's first art patron and collected Keith paintings.

[11] Campbell & Wong and Jones & Emmons were two architectural firms for the "Case Study House Program" (1948–1965) that was sponsored by Arts & Architecture Magazine for the purpose of designing and building inexpensive model homes to facilitate the post-war housing boom. Joseph Eichler (1900–1974) worked for Jones & Emmons at one time.

[12] Jerry O'Day (aka Geraldine Naomi Heib, 1912–1986) was a painter of modern art. She studied at the Cornish School of Fine Arts, Seattle, and studied with Beniamino Bufano for two years (Modern Art West 2009).

of 1974, Tax Reform Act of 1976, American Indian Religious Freedom Act of 1978, Archaeological Resources Protection Act of 1979, Abandoned Shipwrecks Act of 1987, Native American Graves Protection & Repatriation Act of 1990, and Executive Orders 12898, 11593, 13006, 13007

- **State Laws and Regulations** – California Environmental Quality Act (14 CCR 15064.5, PRC 21083.2, and PRC 21084.1), Section 7050.5 of the Health and Safety Code, Section 5097.98 of the Public Resources Code (Chapter 1492, Statutes of 1982, Senate Bill 297), and SB 447 (Chapter 44, Statutes of 1987)

- **Local Laws, Regulations, and Policies** – There are no applicable local regulations or programs for the General Plan Planning Area.

PROJECT IMPACTS AND MITIGATION MEASURES

a, b, and d) less than significant

As previously mentioned, there are five recorded prehistoric sites located in the City of Belvedere. A historic resources inventory (HRI) for Belvedere has been prepared by the Belvedere Tiburon Historical Society. The listing concentrates on the major architectural contributions evident in the community and associated with several famous architects, artists, and other prominent individuals.

Most of the resources listed on the HRI in Belvedere were recorded in 1976 and 1977 by various individuals associated with the Belvedere-Tiburon Landmarks Society, no doubt as part of a local government program managed by the OHP. Two were recorded in 1975 by their respective owners. The Belvedere Community Center (current City Hall) was recorded in 1976 by an individual working for the City. Since then, six additional resources have been placed on the local register by the Belvedere-Tiburon Landmarks Society; these resources are not listed on the HRI because the records have not been submitted to the OHP or the NWIC.

There are 49 properties listed on the HRI that are located in Belvedere. One of those, the Log Cabin, was destroyed in 1982 during a landslide and no longer exists (Roop & Evans, 2009). Two appear to be the same resource, one listed as the "Belvedere Golf Club" on Britton Avenue and the other as "The Club House" at 29 Golden Gate Avenue.

Of those properties listed in the HRI, one is also listed on the National Register of Historic Places; it is the Valentine Rey House at 428 Golden Gate Avenue. Two properties are listed on the California Register, including the Valentine Rey House[13] and the Pacific Motor Boat Club building at 30 Beach Road. One additional resource, the Dreyfous property at 332 Golden Gate Avenue, was listed in the California Inventory of Historic Resources prior to March 1976 due to its architectural merits; however on the HRI, it has been assigned the resource code of "7R," meaning that it was identified as a historic resource, but not formally evaluated. The local register lists 17 properties, six of which are not listed on the HRI. Between the HRI list and the local register there are 54 resources listed, not including the Log Cabin that was destroyed in 1982.

[13] Resources listed on the National Register of Historic Places are automatically listed on the California Register of Historic Resources.

Consequently, adoption of the General Plan Update and future development in the city as part of the Housing Element Update and General Plan Update could impact cultural resources and human remains.

Archaeological and cultural resource protection is achieved through review of development applications and by adopting procedures and practices that are compatible with the surrounding communities. The following policies and associated actions proposed in the General Plan Update will be effective in identifying, evaluating, and protecting significant cultural resources during the planning process, if they are accompanied by an appropriate series of defined procedures that implement the policies: Policy PRES-2.1; Action PRES-2.1.3; Policy PRES-2.2; Policy PRES-2.3; Policy PRES-3.1; Action PRES-3.1.1; Action PRES-3.1.2; Action PRES-3.1.3; Action PRES-3.1.4; Action PRES-3.1.5; Policy PRES-3.2; Action PRES-3.2.1; Policy PRES-3.3; Action PRES-3.3.1. These policies and action items help to mitigate or avoid impacts to cultural and archeological resources by ensuring that cultural and archeological sites are adequately surveyed and reported, that future development avoids all potential sites, and that there are a standard set of conditions of approval that apply to all future development in the city.

Mitigation Measures

None required.

c) less than significant with mitigation incorporated

Future development in the city could impact undiscovered paleontological resources that would be encountered and potentially impacted by future construction activities.

A review of the present policies of the City of Belvedere reveals that current policies recognize historic buildings, structures, and cultural resources, but there are no policies involving paleontological resources. Paleontological resource protection is achieved through review of development applications and by adopting procedures and practices that are compatible with the surrounding communities. These policies will be effective in evaluating and protecting significant paleontological resources during the planning process. Mitigation is required.

Mitigation Measures

Add the following General Plan policy:

MM CULT 1 Discovery of Unanticipated Paleontological Resources. In the event paleontological resources are uncovered during construction, all work must be halted and an evaluation must be undertaken by a qualified paleontologist to identify the appropriate mitigation for the feature.

Mitigation measure MM CULT 1 would reduce the potential effects of impacts to paleontological resources. This impact is considered to be **less than significant.**

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
6. GREENHOUSE GAS EMISSIONS. Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

EXISTING SETTING

To fully understand global climate change, it is important to recognize the naturally occurring "greenhouse effect" and to define the greenhouse gases that contribute to this phenomenon. The temperature on earth is regulated by this greenhouse effect, which is so named because the earth's atmosphere acts like a greenhouse, warming the planet in much the same way that an ordinary greenhouse warms the air inside its glass walls. Like glass, the gases in the atmosphere let in light yet prevent heat from escaping.

Greenhouse gases (GHG) are naturally occurring gases such as water vapor, carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) that absorb heat radiated from the earth's surface. Greenhouse gases are transparent to certain wavelengths of the sun's radiant energy, allowing them to penetrate deep into the atmosphere or all the way to the earth's surface. Clouds, ice caps, and particles in the air reflect about 30 percent of this radiation, but oceans and land masses absorb the rest (70 percent of the radiation received from the sun) before releasing it back toward space as infrared radiation. GHG and clouds effectively prevent some of the infrared radiation from escaping; they trap the heat near the earth's surface where it warms the lower atmosphere. If this natural barrier of atmospheric gases were not present, the heat would escape into space, and the earth's average global temperatures could be as much as 61 degrees Fahrenheit cooler (NASA, 2007).

In addition to natural sources, human activities are exerting a major and growing influence on climate by changing the composition of the atmosphere and by modifying the land surface. Particularly, the increased consumption of fossil fuels (natural gas, coal, gasoline, etc.) has substantially increased atmospheric levels of greenhouse gases. Measured global GHG emissions resulting from human activities, especially the consumption of fossil fuels, have grown since pre-industrial times, with an increase of 70 percent between 1970 and 2004 (IPCC, 2007). This increase in atmospheric levels of GHG unnaturally enhances the greenhouse effect by trapping more infrared radiation as it rebounds from the earth's surface and thus trapping more heat near the earth's surface. Prominent GHGs contributing to the greenhouse effect and climate change include carbon dioxide, methane, ozone, nitrous oxide, and chlorofluorocarbons (CFCs). Emissions of these gases are attributable to human activities associated with the industrial/manufacturing, utilities, transportation, residential, and agricultural sectors (CEC, 2006a).

GLOBAL IMPLICATIONS

Recognizing the problem of global climate change, the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP) established the

Intergovernmental Panel on Climate Change (IPCC) in 1988. It is open to all members of the United Nations and WMO. The role of the IPCC is to assess on a comprehensive, objective, open, and transparent basis the scientific, technical, and socioeconomic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts, and options for adaptation and mitigation. IPCC projects that the earth's average surface temperature should rise 1.8 to 6.3 degrees Fahrenheit before the year 2100 (IPCC, 2007).

The IPCC Fourth Assessment Report's Working Group I Summary for Policymakers (Report) synthesizes current scientific understanding of global climate change and projects future climate change using the most comprehensive set of well-established global climate models. The report incorporates findings of the current effects of global climate change. These findings include:

- The intensity of tropical cyclones (hurricanes) in the North Atlantic has increased over the past 30 years, which correlates with increases in tropical sea surface temperatures.
- Droughts have become longer and more intense and have affected larger areas since the 1970s, especially in the tropics and subtropics.
- Since 1900 the Northern Hemisphere has lost 7 percent of the maximum area covered by seasonally frozen ground.
- Mountain glaciers and snow cover have declined worldwide.
- Satellite data since 1978 show that the extent of Arctic sea ice during the summer has shrunk by more than 20 percent.
- Since 1961, the world's oceans have been absorbing more than 80 percent of the heat added to the climate, causing ocean water to expand and contributing to rising sea levels. Between 1993 and 2003, ocean expansion was the largest contributor to sea level rise.
- Melting glaciers and losses from the Greenland and Antarctic ice sheets have also contributed to recent sea level rise.

An enhanced greenhouse effect will generate new patterns of microclimate and will have significant impacts on the economy, environment, and transportation infrastructure and operations due to increased temperatures, intensity of storms, sea level rise, and changes in precipitation. Impacts may include coastline erosion, flooding of tunnels, coastal highways, runways, and railways, buckling of highways and railroad tracks, submersion of dock facilities, and a shift in agriculture to areas that are now cooler. Such prospects will have strategic security as well as transportation implications.

Climate change affects public health and the environment. Increased smog and emissions, respiratory disease, reduction in California's water supply, extensive coastal damage, and changes in vegetation and crop patterns have been identified as effects of climate change. The impacts of climate change are broad-ranging and interact with other market failures and economic dynamics, giving rise to many complex policy problems. The findings are the latest in a string of reports warning that the rate of carbon dioxide accumulating in the atmosphere is increasing at an alarming pace.

STATE AND REGIONAL IMPLICATIONS

Climate change is a global problem, and GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants (TACs), which are pollutants of regional and local concern. Worldwide, California is the 12th to 16th largest emitter of CO_2 and is responsible for approximately 2 percent of the world's CO_2 emissions (CEC, 2006a, 2006b). In 2004, California produced 492 million gross metric tons of carbon dioxide-equivalent (CO_2e) (CEC, 2006a).

The California Climate Action Team found that California-specific models estimate an average warming increase of 2.7 to 10.5 degrees Fahrenheit throughout California before the year 2100 (CAT, 2009). With the lowest projected global increase of 1.8 degrees, the earth would be warmer than it has been for 10,000 years (Miller, 2000). As a result, increased ocean temperatures could result in increased moisture flux into the state; however, since this would likely increasingly come in the form of rain rather than snow in the high elevations, increased precipitation could lead to increased potential and severity of flood events, placing more pressure on California's flood control system and affecting the water levels of the State's rivers.

The San Francisco Bay Conservation and Development Commission (BCDC) issued a report on sea level rise in April 2009, which states that sea level along the west coast rises approximately 7.9 inches per century, or approximately 0.08 inches per year (BCDC, 2009). However, the rate of sea level rise is increasing. During the period of 1993–2003, the rate was approximately 0.12 inches per year, which could demonstrate the result of human-induced warming on sea level. The BCDC uses the same sea level rise estimates that are used by California Climate Action Team-funded assessments. These estimates anticipate the sea level in the Bay Area will rise 16 inches by mid-century and 55 inches by the end of the century. This data was used to make maps of projected flood areas but does not take into consideration existing shoreline protections; if an area is below sea level, it is shown as vulnerable on their maps despite any existing projections. By mid-century, approximately 180,000 acres of the Bay Area could be flooded, and 213,000 acres could be flooded by the end of the century. A large amount of development along the shoreline is vulnerable to flooding and erosion. Due to Bay Area topography, 100 percent of the development located in 100-year floodplain areas will likely flood by the year 2050. Also, different parts of the Bay Area are more vulnerable to flooding and erosion than others. In the vulnerable areas are several large commercial and industrial developments, including 93 percent of both the Oakland and the San Francisco airports that may be inundated by 2100. Half of the vulnerable development is residential and approximately 270,000 people would be at risk of flooding and problems with erosion. Approximately 4,300 acres of waterfront parks are expected to flood by 2100 (BCDC, 2009). If anticipated flooding occurs, resultant effects could include increased coastal flooding and erosion, saltwater intrusion, and disruption of wetlands (CEC, 2006c). Many communities could also experience compromised wastewater treatment due to inundation from rising sea levels (BCDC, 2009).

Climate change and global warming could negatively affect agriculture, forestry, water resources, coastal areas, energy production, air quality, public health, public infrastructure, natural protections, sensitive species and habitats, public safety, and the economy (CAT, 2009; BCDC, 2009). The estimated economic value of shoreline development that could be impacted by a 55-inch rise in sea level is $62 billion. Other anticipated economic impacts relate to movement of goods and people in and around the Bay Area that would be disrupted by flooding of ports, airports, highways, and rail lines (BCDC, 2009). As the existing climate throughout California changes over time, mass migration of species, or worse, failure of species to migrate in time to adapt to the perturbations in climate, could also result.

With climate changes, recreational facilities and developed coastlines will also be more vulnerable to hurricanes, storm surges, flooding, and erosion. Beachfront homes and harbors as well as wetlands may flood. Sewage systems may be overwhelmed by storm runoff and high tides. The Bay Area currently has approximately 300 miles of public access to and along the San Francisco Bay shoreline. Eighty-seven (87) percent of that access is located in areas vulnerable to flooding and erosion by 2100. It may be very hard to relocate or re-create access opportunities in areas further inland. Jetties and seawalls may have to be raised and strengthened to protect harbors which are used for shipping, recreation, and tourism. As discussed above, by the year 2050, 100 percent of 100-year floodplain areas are expected to be flooded, and by the year 2100 an estimated 213,000 acres of Bay Area land, much of which is in the Central Bay Area, could be impacted. The City of Belvedere is located in the Central Bay Area. BCDC has produced a map showing the expected flooding that may occur in this area by the end of the century, and this map predicts that approximately half of the City of Belvedere, and much of the surrounding area, can expect to flood by the end of the century (see **Figure 4** for projected future sea level rise for 2050 and 2099). Much of the developed Bay Area shoreline will require enhanced shoreline protection, which will be developed regionally to maximize safety and minimize impacts on sensitive Bay resources including public access, visual resources, and soil stability. Structural shoreline protections common to the Bay Area include seawalls, riprap revetments, and levees. These protections are reliable but expensive to build and maintain and often cause significant impacts to resources. Incorporating ecosystem elements with engineering elements would provide balanced and long-term shoreline protection.

FIGURE 4 BCDC PROJECTED SEA LEVEL RISE FOR 2050 AND 2099

SOURCE: Inundation data from Knowles, 2008. Additional salt pond elevation data by Siegel and Bachand, 2002. Aerial imagery is NAIP 2005 data.

DISCLAIMER: Inundation data does not account for existing shoreline protection or wave activity. These maps are for informational purposes only. Users, by their use, agree to hold harmless and blameless the State of California and its representatives and its agents for any liability associated with its use in any form. The maps and data shall not be used to assess actual coastal hazards, insurance requirements, or property values or be used in lieu of Flood Insurance Rate Maps issued by the Federal Emergency Management Agency (FEMA).

REGULATORY FRAMEWORK

The following federal, state, and local regulations, plans, programs, and guidelines are applicable to the proposed City of Belvedere Housing Element Update and General Plan Update:

- **Federal Laws and Regulations** – Clean Air Act
- **State Laws and Regulations** – Assembly Bill (AB) 1493; Executive Order S-3-05; AB 32, the California Global Warming Solutions Act of 2006; Senate Bill 375; Executive Order S-13-08; BCDC under the authority of the McAteer-Petris Act
- **Local Laws, Regulations, and Policies** –BAAQMD's Climate Protection Program; Joint Policy Committee initiatives; City of Belvedere Design Review Ordinance; Marin Climate and Energy Partnership

METHODOLOGY

Under CEQA, an initial study must identify and focus on the potentially significant environmental effects of a project. Significant effect on the environment means a substantial, or potentially substantial, adverse change in the environment (Public Resources Code, Section 21068). CEQA further states that the CEQA Guidelines shall specify certain criteria to be used in determining whether projects would have a significant effect on the environment. However, as of the writing of this Initial Study/Mitigated Negative Declaration, the agencies with jurisdiction over air quality regulation and GHG emissions such as CARB and BAAQMD have not adopted regulations, guidance, methodologies, significance thresholds, standards, or analysis protocols for the assessment of GHG emissions and climate change. A standardized, statewide methodology to establish an appropriate baseline, such as a project-level (regional GHG emissions) inventory, to evaluate the significance of GHG emission changes has not yet been established. This places the burden for establishing a methodology, and determining significance standards, on local lead agencies, such as the City of Belvedere.

The Bay Area Air Quality Management District has been working to develop new CEQA guidelines which provide strong guidance on the topics listed above. These guidelines are currently in draft form awaiting final approval by the BAAQMD Board. In lieu of adopted guidance by the BAAQMD or the State of California on appropriate evaluation methods, the Draft BAAQMD guidelines were used as an interim guide for a significance threshold.

The City of Belvedere's Greenhouse Gas Inventory, completed by ICLEI in 2009 using a 2005 baseline year, projected emissions out to 2030. These projected emissions were compared to the Draft BAAQMD threshold guidance. The City chose a baseline year of 2005 in the development of the GHG Baseline Inventory because of the reliability of data and to maintain consistency with neighboring jurisdictions. It should also be noted that the 2030 buildout forecast is a business-as-usual estimate, meaning it does not take into account state initiatives or currently planned reduction measures of the City.

The City GHG inventory relied upon a 2005 baseline, with the result of 12,654 metric tons (MT) CO_2e being released in 2005 and projected emissions out to 2020 showing 14,074 MT CO_2e. Emissions for 2030 were projected consistent with ABAG projections. Interim years were also estimated using ABAG projections.

The BAAQMD threshold is 4.6 MT CO_2e per year per service population, which in 2020 equates to 3,340 MT according to ABAG (2,200 residents +1,140 jobs). This results in a threshold of 15,364 MT CO_2e per year. With the City's existing sustainability efforts and minimal additional emissions as a result of the updated Housing Element and General Plan, the City would not need mitigation for the purposes of CEQA since the projected GHG emissions for the City in 2020 and 2030 are 14,074 MT CO_2e and 14,116 MT CO_2e, respectively.

TABLE 9
ABAG PROJECTIONS AND ASSOCIATED ESTIMATED COMMUNITY-WIDE EMISSIONS

	2005	2010	2020	2030
Total Population	2100*	2,100	2,200	2,200
Jobs	903**	1,130	1,140	1,150
Service Population	3,003	3,230	3,340	3,350
Total Projected Emissions (MT CO_2e)	12,654***	13,364	14,074***	14,116
Total Permitted Emissions	13,813	14,858	15,364	15,410
MT CO_2e Below the BAAQMD Threshold	1,158	1,494	1,290	1,294

Source: ABAG, 2007; City of Belvedere, 2009c; PMC

**Estimated population derived from the 2009 Draft GHG Baseline Inventory*

***Estimated jobs per the 2005 GHG Inventory after considering total emissions and total population for 2005.*

****Estimated 2005 and 2020 emissions are derived from the 2009 Draft GHG Baseline Inventory.*

It is important to note that all CO_2 emissions from General Plan Update implementation may not necessarily be considered "new" emissions, given that the General Plan Update itself does not create "new" emitters (people) of GHGs. In other words, the GHG emissions from residential uses are not necessarily all new GHG emissions, but are rather, to a large degree, accommodating household relocations. Emissions of GHGs are, however, influenced by the location and design of projects, to the extent that they can influence travel to and from the projects, and to the degree the projects are designed to maximize energy efficiency.

The methodology used in this IS/MND to analyze the implementation of the proposed General Plan Update's potential effect on global warming includes a calculation of GHG emissions based on existing City documents and previously completed inventories and action plans. The City calculated the city's GHG emissions under buildout for informational and comparison purposes.

PROJECT IMPACTS AND MITIGATION MEASURES

a) less than significant

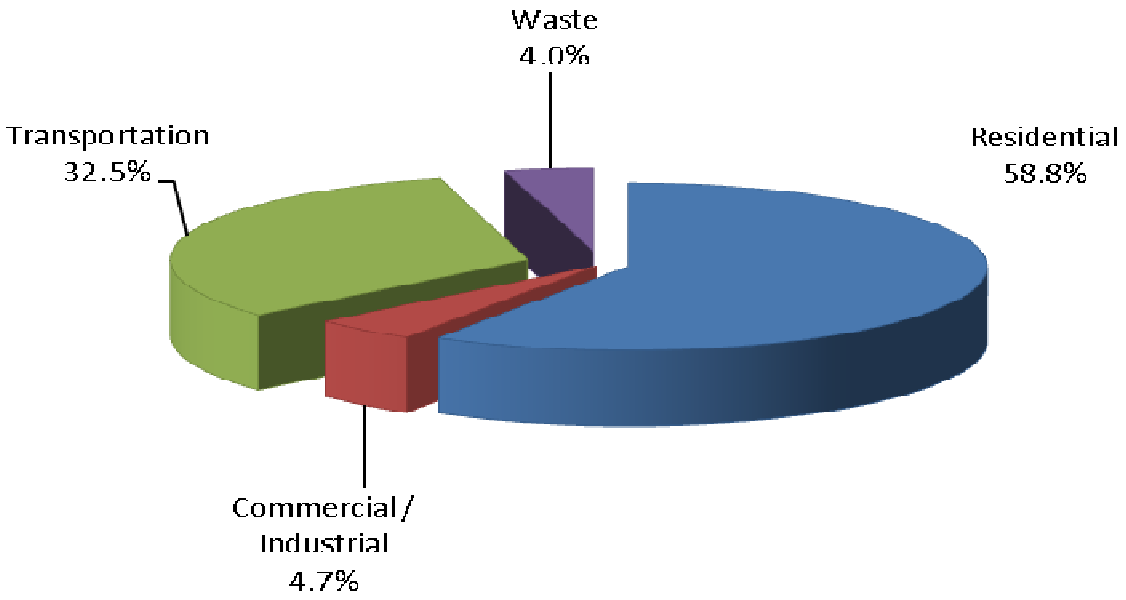
The City of Belvedere recently completed the government operations and community-scale greenhouse gas emissions inventory as an important first step in its climate protection initiative. These inventories are essential, as advised by the International Council for Local Environmental Initiatives, now known as ICLEI-Local Governments for Sustainability, to establish:

- A baseline emissions inventory against which to measure future progress, and
- An understanding of where the highest percentages of emissions are coming from and, therefore, where the greatest opportunities for emissions reductions lie.

This report contains the estimates of greenhouse gas emissions in 2005 resulting from activities and operations of the City of Belvedere and also those taking place within the geographical boundaries of Belvedere. The first step toward reducing greenhouse gas emissions is to identify sources of emissions and establish baseline levels. This information can later inform the selection of a reduction target and possible reduction measures to be included in the Climate Action Plan.

In 2005, the Belvedere community emitted approximately 12,654 metric tons of CO_2e. As demonstrated in the charts below, the electricity and natural gas use in Belvedere's residential Sector was by far the largest source of emissions, generating approximately 7,444 metric tons of CO_2e, or 58.8 percent of total 2005 emissions. Transportation sector emissions, totaling 4,115 metric tons CO_2e and representing 32.5 percent of total emissions, are the result of diesel and gasoline combustion in vehicles traveling on local roads. The commercial/industrial sector, the third greatest source of 2005 emissions, generated 594 metric tons CO_2e, or 4.7 percent of the total. The remaining 4 percent (501 metric tons) are the estimated future methane emissions that will result from the decomposition of waste that was generated by the Belvedere community during 2005.

FIGURE 5 2005 COMMUNITY CO_2E EMISSIONS



Source: City of Belvedere, 2009c

TABLE 10
2005 COMMUNITY EMISSIONS SUMMARY BY SECTOR

Sector	Greenhouse Gas Emissions (metric tons CO_2e)	Greenhouse Gas Emissions (% CO_2e)	Energy Equivalent (million Btu)
Residential	7,444	58.8%	130,017
Commercial/Industrial	594	4.7%	9,700
Transportation	4,115	32.5%	56,268
Waste	501	4.0%	-
TOTAL	12,654	100.0%	195,985

Source: City of Belvedere, 2009c

In 2005, Belvedere government operations emitted approximately 237 metric tons of CO_2e. These municipal emissions constituted approximately 1.9 percent of the community's total quantities. Typically, local government emissions account for approximately 2 percent of community levels. As a minor contributor to total emissions, actions to reduce municipal energy use and waste will have a limited impact on the Belvedere community's overall emission levels.

GHG emissions generated by subsequent development under the proposed General Plan Update and Housing Element Update would predominantly consist of CO_2. In comparison to criteria air pollutants, such as ozone and PM_{10}, CO_2 emissions persist in the atmosphere for a substantially longer period of time. While emissions of other GHGs, such as CH_4, are important with respect to global climate change, emission levels of other GHGs are less dependent on the land use and circulation patterns associated with the proposed land use development project than are levels of CO_2.

The City GHG inventory relied upon a 2005 baseline, with the result of 12,654 MT CO_2e being released in 2005 and projected emissions out to 2020 showing 14,074 MT CO_2e annually. Emissions for 2030 were projected consistent with ABAG projections. Interim years were also estimated using ABAG projections.

The BAAQMD threshold is 4.6 MT CO_2e per year per service population, which in 2020 is 3,340 according to ABAG (2,200 residents + 1,140 jobs). This results in a threshold of 15,364 MT CO_2e per year. With the City's existing sustainability efforts and minimal additional emissions as a result of the updated Housing Element and General Plan, the City would not need mitigation for the purposes of CEQA since the projected GHG emissions for the City in 2020 and 2030 are 14,074 MT CO_2e and 14,116MT CO_2e, respectively.

As identified above, greenhouse gas emissions from the proposed General Plan Update and Housing Element Update fall below the proposed BAAQMD thresholds for greenhouse gas emissions. State and federal programs will also result in reduced emissions over time. Finally, the following policies and actions proposed as the City's General Plan Update and Housing Element Update would reduce greenhouse gas emissions and the associated impacts to global climate change: Action LU-1.3.1, Policy LU-1.6, Action LU-1.6.1, Policy LU-1.7, Policy LU-1.8, Action LU-1.8.1, Action LU-2.4.1, Policy LU-3.1, Action LU-3.1.1, Policy LU-5.1, Action LU-5.1.1, Policy LU-9.3, Policy TRANS-1.1, Action TRANS-1.1.1, Policy TRANS-1.2, Action TRANS-1.2.3, Action TRANS-1.2.4, Action TRANS-1.2.5, Action TRANS-1.2.6, Action TRANS-1.2.7, Action TRANS-1.2.8, Action TRANS-2.1.3, Policy TRANS-3.1, Action TRANS-3.1.1, Action TRANS-3.1.2, Policy TRANS-3.2, Action TRANS-3.2.1, Action TRANS-3.2.2, Action TRANS-3.2.3, Policy TRANS-4.1, Action TRANS-4.1.1, Policy TRANS-4.2,

Action TRANS-4.2.1, Policy TRANS-4.3, Action TRANS-4.3.1, Policy TRANS-4.4, Action TRANS-4.4.1, Action TRANS-4.4.2, Action TRANS-4.4.3, Action TRANS-4.4.4, Action TRANS-4.4.5, Policy TRANS-4.1, Action TRANS-4.1.1, Policy TRANS-4.2, Action TRANS-4.2.1, Policy Rec-1.3, Policy Rec-1.4, Action SUST-1.1.1, Action SUST-1.2.1, Action SUST-1.2.4, Action SUST-1.2.5, Policy SUST-2.2, Policy SUST-2.5, Policy SUST-5.1, Policy SUST-5.2, Action SUST-5.2.1, Action SUST-5.2.2, Action SUST-5.2.3, Policy SUST-6.1, Action SUST-6.1.1, Policy SUST-6.2, Action SUST-6.2.1, Action SUST-6.2.2, Policy SUST-6.3, Action SUST-6.3.1, Action SUST-6.3.2, Policy SUST-6.4, Policy SUST-6.5, Policy UST-7.1, Action SUST-7.1.1, Action SUST-7.1.2, Action SUST-7.3.1, Action SUST-7.4.5, Policy SUST-8.1, Action SUST-8.1.1, Action SUST-8.1.3, Policy SUST-8.2, Action SUST-8.2.1, Action SUST-8.2.2, Policy SUST-9.2, Action SUST-9.2.1, Action SUST-9.2.3, Action SUST-9.2.4, Policy SUST-10.1, Policy SUST-10.2, Policy SUST-10.5, Policy SUST-11.1, Action SUST-11.1.1, Action SUST-11.1.2, Policy SUST-12.1, Policy SUST-12.3, Policy SUST-12.4, Policy CD-1.1, Action CD-1.1.1, Action CD-1.1.2, Action CD-2.2.2, Action CD-3.1.1, Action CD-3.1.3, Action CD-7.1.2, Action CD-7.1.4, Policy CD-8.1, Action CD-8.1.1, Action CD-10.1.1, Policy CD-10.2, Action HAZ-1.1.1, Policy HAZ-1.3, Action HAZ-1.1.3, Policy HAZ-1.3, Policy HAZ-1.4, Action HAZ-1.4.1, Action HAZ-1.2.2, Action HAZ-1.4.1, Action HAZ-1.4.4, Policy HAZ-2.1, Action HAZ-2.1.1, Policy HAZ-2.2, Action HAZ-2.2.1, Policy HAZ-2.3, Action HAZ-2.3.1, Action HAZ-2.3.2, Policy HAZ-2.4, Action HAZ-2.4.1, Policy HAZ-2.5, Action HAZ-2.5.1, Policy HAZ-4.2, Policy HAZ-5.2. With the City's existing and proposed sustainability, energy use, and greenhouse gas reduction efforts along with minimal additional emissions as a result of the updated Housing Element and General Plan, there would be a **less than significant** impact in regard to greenhouse gas emissions.

Mitigation Measures

None required.

b) less than significant

The California Governor's Office of Planning and Research (OPR) recommendations are broad in their scope and address a wide range of industries and GHG emission sources. Therefore, most of the recommendations are not applicable to the development and operation of any single residential project, but rather as general development policies. Also, for those recommendations that are applicable, specific regulations or detailed guidance regarding their implementation is typically not available. Thus, the proposed General Plan Update's compliance with these measures was evaluated by the City qualitatively with the understanding that exact compliance can only be determined once specific applicable regulations are adopted.

The project does not, as proposed, conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. The analysis was completed in accordance with the methodology recommended in the BAAQMD Draft CEQA Air Quality Guidelines, which is consistent with the above-stated goals of the State of California. Although the BAAQMD guidelines have not yet been adopted, they are anticipated for adoption in June 2010. Absent other guidance from local, regional, or state agencies, the BAAQMD Draft CEQA Guidelines are the best available tool in the Bay Area to determine a level of significance for CEQA. Therefore, with the City's existing and proposed sustainability, energy use, and greenhouse gas reduction efforts (in part outlined above), along with minimal additional emissions as a result of the updated Housing Element and General Plan, there would be consistency with state and regional recommendations for addressing climate, and therefore a **less than significant impact**.

Mitigation Measures

None required.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
7. GEOLOGY AND SOILS. Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning map, issued by the State Geologist for the area or based on other substantial evidence of a known fault?	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would became unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

REGIONAL SETTING

Belvedere and Corinthian islands are underlain by metamorphosed greenstone and sandstone of the Franciscan Assemblage, according to maps prepared by the U.S. Geological Survey (USGS) (ENGEO, 2009). Layering within the bedrock generally runs northwest, parallel to the long axis of Belvedere Island, and dips steeply to the northeast. Prior to development of the City of Belvedere, Belvedere and Corinthian islands were separated from Tiburon by a shallow lagoon and mud flats. Development of the city since the late 1800s has included partial filling of the lagoon and grading of numerous roads and building pads on the steep hillsides of Belvedere and Corinthian islands.

- The Bay Area is one of the most seismically active regions in the world due to its location on the boundary between the North American and Pacific tectonic plates. In the area surrounding Belvedere, the plate margin is formed by several active fault lines, including the San Andreas Fault located approximately 8.5 miles to the southwest and the Hayward Fault located about 9.5 miles to the northeast. According to the 2007 Uniform

California Earthquake Rupture Forecast, Version 2 (UCERF 2), the probability of a magnitude 6.7 or larger earthquake over the next 30 years striking the greater San Francisco Bay Area is 63 percent. For northern California, the most likely source of such earthquakes is the Hayward-Rodgers Creek Fault (31 percent in the next 30 years).

LOCAL SETTING – CITY OF BELVEDERE

One of the factors controlling the distribution of geologic hazards in the city is variation of geologic materials. In general, the bedrock formations in the city consist of dense, competent rock that is capable of supporting the moderately steep natural slopes that form much of Belvedere and Corinthian islands. However, the local stability of the bedrock is greatly influenced by the degree of fracturing and weathering at any given location. In addition, the bedrock can be destabilized by shoreline erosion or by man-made cuts that create over-steepened slopes. For example, the bedrock exposed in steep shoreline bluffs at the southwest corner of Belvedere Island has historically experienced sloughing and shallow landslides.

Swale and valley areas on the slopes of Belvedere Island and Corinthian Island are underlain by deposits of alluvium, a type of soil that forms through the down-slope transportation and accumulation of weathered bedrock debris. Alluvium can be subject to stability problems, especially where man-made cuts reduce lateral support or where fills add lateral loads to slopes. Landslides typically form in swale areas where thick deposits of alluvium have accumulated. The potentially low natural stability of alluvium can be further reduced by the presence of groundwater, introduced either during heavy winter rains, by poor surface drainage, or by irrigation.

The original distribution of geologic materials throughout the city has been extensively modified by man-made improvements. The construction of roads, building pads, and other improvements in the city has included both excavations into steep hillsides and placement of fill to create buildable land. On sloping ground, level areas for development were typically constructed by excavating cut slopes on the uphill slopes and placing fill on the downhill slopes. Much of this construction occurred between the 1930s and the 1950s, prior to the development of modern grading practices and codes. Cut and fill slopes along roadways and around building areas are locally supported by retaining walls of many types, ages, and variable states of repair, including many older unreinforced masonry walls. Many walls were noted to be in poor condition, tilted, cracked, or otherwise affected by soil movements. Sections of older masonry walls have locally been replaced by pier-and-wood lagging walls. A number of older masonry walls supporting roads have been structurally reinforced by tieback anchors (ENGEO, 2009).

The Belvedere Lagoon neighborhoods are the most extensively graded area within the city limits. The elevated areas that now support the streets and residential lots in the lagoon neighborhoods were created in the mid to late 1940s by construction of dikes at Beach and San Rafael roads and draining the original interior lagoon. Native soils were excavated from the existing lagoon areas and placed as fills to form elevated streets and building pads. Thick deposits of potentially compressible marine clays silts and loose sand remain below the lagoon neighborhoods.

The relative levels of risk from geologic hazards within the city are influenced by the distribution of natural soil and rock materials, the steepness of slopes, man-made changes to original conditions, and external factors such as wave erosion and seismic ground shaking. Geologic hazards are mapped based on the combination of the above factors, using the hazard categories described in **Table 11**.

TABLE 11
GEOLOGIC HAZARDS

Geologic Hazard Category	Description	Landslide Susceptibility	Settlement Potential	Liquefaction and Ground Lurching Susceptibility	Erosion Potential	Tsunami Inundation	Comments
Slope Stability Category 1	Developed hillside areas generally inclined at 3H:1V or flatter	Low	Low	Low	Low to Moderate	Low	Grading and retaining wall construction may locally create potential slope movement hazards.
Slope Stability Category 2	Developed hillside areas generally inclined at 3H:1V and 2H:1V	Moderate	Low	Low	High	Low	Grading and retaining wall construction may locally create potential slope movement hazards.
Slope Stability Category 3	Developed hillside areas generally inclined at 2H:1V or steeper	Moderate to High	Low	Low	High	Low	Grading and retaining wall construction may locally create potential slope movement hazards.
Slope Stability Category 4	Steep cut slope above West Shore Road	High	Low	Low	High	Low	Hazard of rock fall to adjacent road and residences.
Slope Stability Category 5	Steep slopes adjacent to shoreline subject to wave erosion	High	Low	Low	High	Low	Local stability greatly influenced by degree of fracturing and weathering of bedrock and to continued destabilization by wave erosion.
Bay Fill over Marine Sediment	Marine sands, silts, and clays deposited in the lagoon and around the island periphery	Low	High	High	Low to Moderate	High	Seismic ground shaking will potentially be amplified by the soft marine sediments underlying the lagoon neighborhoods.
Shoreline Inundation Areas	Low-lying shoreline areas are subject to inundation by storm	Varies	Varies	Varies	High	High	Shoreline areas within 15 feet of sea level; includes both Bay Fill and rocky shoreline

Geologic Hazard Category	Description	Landslide Susceptibility	Settlement Potential	Liquefaction and Ground Lurching Susceptibility	Erosion Potential	Tsunami Inundation	Comments
	wave tsunami						areas.

Source: ENGEO, 2009

REGULATORY FRAMEWORK

The following federal, state, and local regulations, plans, programs, and guidelines are applicable to the proposed City of Belvedere Housing Element Update and General Plan Update:

- **Federal Laws and Regulations** – There are no applicable federal laws and regulations for the General Plan Planning Area.
- **State Laws and Regulations** – California Division of Mines & Geology, Alquist-Priolo Earthquake Fault Zoning Act of 1972, California Building Code (CBC) Title 24, Part 2
- **Local Laws, Regulations, and Policies** – Association of Bay Area Governments - Manual of Standards (May 1995) for Erosion & Sediment Control Measures; Marin Countywide Plan; City of Belvedere Urban Runoff Pollution Prevention Ordinance

PROJECT IMPACTS AND MITIGATION MEASURES

a)

i) less than significant

Land uses and development under the proposed City of Belvedere Housing Element Update and General Plan Update may expose additional people, structures, and development to ground shaking as a result of earthquakes, resulting in the risk of loss, injury, or death.

According to the California Geological Survey, the probabilistic seismic ground motions (with a 10 percent probability of being exceeded in 50 years) are estimated to be approximately 0.5g (50 percent of gravity in horizontal direction) for the portions of the city underlain by bedrock. Ground shaking levels in areas of Bay fill or on very steep slopes could be significantly higher. The impacts from seismic ground shaking are likely to include damage to older structures lacking shear walls and secure attachment to foundations, damage to many older unreinforced masonry walls, and widespread shallow slope failures in the upper soil layers on steep slopes. Seismic ground shaking will also trigger ground failures in filled land in the lagoon neighborhoods and along West Shore Road as described further in this section analysis.

The seismic design provisions of the California Building Code (CBC) prescribes minimum building standards that are intended to allow structures to (1) resist minor earthquakes without damage, (2) resist moderate earthquakes without structural damage but with some nonstructural damage, and (3) resist major earthquakes without collapse but with some structural as well as nonstructural damage. Essential structures, such as fire stations, hospitals, or schools, have more stringent earthquake provisions that are set forth in the CBC. All new construction in the city would be required to follow current seismic codes (proposed General Plan Action HAZ-1.1.2).

Most structures in the City of Belvedere were constructed before the adoption of modern building codes. However, experience with past earthquakes in California has shown that single-

family wood frame structures like the majority of those in the city are unlikely to experience catastrophic failure or collapse due to seismic ground shaking. The performance and safety of existing structures can be improved by seismic retrofits such as improving attachment of walls to foundations and roofs, adding structural bracing and shear walls, and adding shutoff systems for electrical water and gas connections (proposed General Plan Action HAZ-1.1.3).

Proposed General Plan policies and associated actions (Policy HAZ-1.1; Action HAZ-1.1.2; Action HAZ-1.1.3; Action HAZ-3.1.1; Policy HAZ-3.2; Action HAZ-3.3.1; Action HAZ-3.3.2; Policy HAZ-3.5; Action HAZ-3.5.3) would reduce the potential effects of impacts resulting from seismic ground shaking. This impact is considered to be **less than significant.**

Mitigation Measures

None required.

ii –iii) less than significant

Implementation of the proposed Housing Element Update and General Plan Update may expose additional people, structures, and development to seismic-related ground failures including lateral spreading, lurching, and liquefaction, as well as potential failure of flood protection features, resulting in the risk of loss, injury, or death.

Potentially liquefiable marine sediments and fills underlie most the Belvedere Lagoon area (ENGEO, 2009), as shown in **Figure 6** and described in **Table 11**. Liquefiable sediments are also likely to be present under the fills along West Shore Road. Liquefaction typically occurs when seismic cyclic shear stresses collapse loose granular soil structures, increasing soil pore water pressure, reducing the effective stress (the frictional interlocking of soil particles), and decreasing soil strength.

The most common types of ground failure typically associated with liquefaction include lateral spreading of subsurface layers causing ground fissures, tilting of the surface, and loss of bearing within the area of the spread. Vertical settlements commonly occur due to displacement of sand volume through sand boils and densification and/or flow of susceptible sand layers. Loss of bearing strength beneath structure foundations can cause settlement or rotation of the structure. Buoyant buried objects, such as tanks or swimming pools, may float out of the ground.

Soft marine silts and clays like those under the Belvedere Lagoon are also susceptible to ground lurching. Ground lurching is believed to be caused by loss of shear strength in soft silts and clays during seismic ground shaking. Ground lurching can result in permanent displacement and tilting of the ground and ground cracking.

Implementation of proposed General Plan Update policies and action items (Policy HAZ-1.1; Action HAZ-1.1.2; Action HAZ-1.1.3; Action HAZ-3.1.1; Policy HAZ-1.2; Action HAZ-1.2.1; Action HAZ-1.2.2; Action HAZ-1.4.2; Action HAZ-1.4.3; Policy HAZ-3.2; Policy HAZ-3.3; Action HAZ-3.3.1; Action HAZ-3.3.2; Policy HAZ-3.5; Action HAZ-3.5.1; Action HAZ-3.5.2; Action HAZ-3.5.3), in addition to the provisions of the CBC, would reduce the potential impacts associated with seismic-related ground failures to **less than significant**. These policies would require specific standards for developments that are in close proximity to areas with potential for seismic-related ground failures. Site-specific geologic or seismic evaluations would be required and recommendations would be made to reduce potential hazards.

It should be noted that although the proposed General Plan policies and actions listed above would reduce the potential impacts resulting from seismic-related ground failure through the regulation of construction standards, liquefaction and ground lurching impacts to existing

development cannot be eliminated. Beach and San Rafael roads, which provide access to the city and contain lifeline utilities, are potentially susceptible to damage in the event of liquefaction or ground failure induced by ground lurching. The risk to lifeline utilities could be reduced by installing automatic shutoff valves, bracing, flexible materials, flexible joints and connections, joint restraint, strengthening of support structures, or other means (actions HAZ-1.4.2 and HAZ-1.4.3). Locations at risk should also be designed for easy access and repair, and consideration should be given to providing predesigned replacement/repair fittings to allow rapid bridging of breaks at crucial locations where damage is anticipated.

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BELVEDERE CITY BOUNDARY

TABLE 1
GEOLOGIC MATERIAL AND PROPERTIES

Geologic Hazard Category	Description	Landslide Susceptibility	Settlement Potential	Liquefaction and Ground Lurching Susceptibility	Erosion Potential	Tsunami Inundation	Comments
Bay Fill over Marine Sediments	Marine sands, silts and clays deposited in the lagoon and around the island periphery	Low	High	High	Low to moderate	High	Seismic ground shaking will potentially be amplified by the soft marine sediments underlying the lagoon neighborhoods
Shoreline Inundation Areas	Low-lying shoreline areas are subject to inundation by storm wave and Tsunami.	Varies	Varies	Varies	High	High	Shoreline areas within 15 of sea level; includes both Bay Fill and rocky shoreline areas

Source: ENGEO

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Figure 6
Liquefaction and Tsunami Hazards Map

PMC®

Mitigation Measures

None required.

iv) less than significant

Land uses and new development under the proposed City of Belvedere Housing Element Update and General Plan Update may expose people, structures, and development to slow or rapidly occurring down-slope earth movement, resulting in the risk of loss, injury, or death. This type of hazard can be triggered seismically or result from seasonal saturation of soils, erosion, or grading activities.

Landslide movement can cause large vertical and horizontal ground movements, ground warping and bulging, displacement of large masses of debris from slopes onto roads and structures, and blocking of surface drainage facilities. Debris flows commonly entrain large rocks, uprooted trees, and other debris and can bury or flatten houses. Due to their rapid movement, debris flows are a potential threat to life and safety. Rock falls can discharge boulders at relatively high speeds to areas adjacent to steep cut slopes.

The existing public and private improvements in the Belvedere hillside neighborhoods were largely constructed prior to the development of modern hillside grading and building codes. Many existing improvements are situated in swale areas underlain by potentially unstable deposits of alluvium or close to hillsides that have previously experienced landslide activity. Due to the complex soil conditions in the city that have been formed by man-made alteration to the natural conditions, it is not possible for the City to determine the site-specific landslide risks for individual properties.

Newer structures, especially those built after the 1970s on deep foundations, are more likely to be able to resist soil movement near foundations. Elimination of potential landslide risks is typically not feasible in mature existing communities like Belvedere. However, Belvedere residents can take precautions to limit potential risks and to protect their safety in the event of landslide movement. The USGS provides a useful discussion of landslide hazard preparedness at http://landslides.usgs.gov. Residents should be encouraged to maintain surface drainage systems and avoid ponding of stormwater on their properties. Movement or failure of older unreinforced masonry or deteriorated wood retaining walls can trigger slope failures in adjacent slopes. Maintenance of retaining walls is a critical factor in preserving slope stability in steep hillside areas. Older walls with shallow foundations will be susceptible to failure in the event of strong seismic ground shaking. Residents who are concerned about possible slope stability problems should have their properties evaluated by a qualified geotechnical professional.

Geotechnical reports are required for new construction or for the design of mitigation measures for active landslide movement (proposed General Plan Policy 3.3 and Action 3.4.2).

The following proposed General Plan policies and actions would reduce the potential effects of impacts resulting from landslides: Policy HAZ-1.1; Action HAZ-1.2; Action HAZ-1.2.1; Action HAZ-1.2.2; Policy HAZ-3.1; Action HAZ-3.1.1; Policy HAZ-3.3; Policy HAZ-3.4; Action HAZ-3.4.1; Action HAZ-3.4.2. This impact is considered to be **less than significant.**

Mitigation Measures

None required.

b) less than significant

Subsequent development under the proposed General Plan Update could result in increased soil, wind, and water erosion and siltation of local drainage during and after construction from excavation and grading activities.

Erosion can be triggered by many natural events such as destruction of vegetation by wildfires, incision of gullies due to uncontrolled surface drainage, and undermining of shoreline slopes by wave action. Areas where natural vegetation is disturbed by construction, such as graded slopes, will be particularly susceptible to erosion until they can be adequately revegetated. Surface water discharged from developed areas requires careful control to avoid erosion.

The impacts of soil erosion from graded areas can include undermining of roads and foundations, potential destabilization of slopes, and deposition of excessive amounts of sediment into the Bay.

Erosion impacts can be minimized by maintenance of surface drainage facilities to avoid blockage of inlets or uncontrolled discharge to slopes and maintenance of vegetative cover on areas of exposed soil. New construction projects would be required to comply with applicable city stormwater control regulations. For instance, the City's Urban Runoff Pollution Prevention Ordinance (Title 8, Chapter 8.36 of the City Municipal Code) establishes administrative procedures, minimum standards of review, and implementation and enforcement procedures for controlling erosion, sedimentation, and other pollutant runoff, including construction debris and hazardous substances used on construction sites, and disruption of existing drainage and related environmental damage caused by land clearing and grubbing, grading, filling, and land excavation activities. The intent of the ordinance is to reduce pollutants in stormwater discharges, including sedimentation, to the maximum extent practicable. All discharges of material other than stormwater must be in compliance with a National Pollutant Discharge Elimination System (NPDES) permit issued for the discharge.

Implementation of proposed General Plan policies and associated actions (Policy HAZ-3.6; Action HAZ-3.6.1; Action HAZ-3.6.2; Action HAZ-3.6.3) would reduce soil erosion hazards in the city. Additionally, compliance with the NPDES permit and the use of best management practices for water quality control is required (Title 8, Chapter 8.36 of the City Municipal Code). Compliance with the policies and actions listed above, as well as with the City's Urban Runoff Pollution Prevention Ordinance, would reduce the impacts to soil erosion and sedimentation. Therefore, impacts to soil erosion are considered **less than significant**.

Mitigation Measures

None required.

c) less than significant

See response to a) i–iv above.

d) less than significant

Subsequent development under the proposed Housing Element Update and General Plan Update could expose buildings, pavements, and utilities to significant damage as a result of underlying expansive or unstable soil properties.

In general, the surficial soils in the upland areas of Belvedere are relatively nonexpansive or moderately expansive.

Expansive clay soils shrink and swell as a result of seasonal fluctuation in moisture content. This can cause heaving and cracking of slabs-on-grade, pavements, and structures founded on shallow foundations. The amount of seasonal movement can be roughly estimated from the plasticity index. In the City of Belvedere, surface soils are typically of low to moderate plasticity (ENGEO, 2009). In general, the potential for expansive soil movement on nonplastic soils or soils of low plasticity is considered to be low (ENGEO, 2009). Moderately plastic soils could potentially cause movement of poorly constructed or shallow-founded improvements.

Where expansive soils are present, building damage due to volume changes associated with expansive soils can be reduced through proper foundation design. Where new construction is proposed, the soil conditions would be evaluated by a qualified geotechnical engineer (proposed General Plan Policy HAZ-3.5 and Action HAZ-3.5.3).

Proposed General Plan policies and associated actions (Policy HAZ-3.5; Action HAZ-3.5.1; Action HAZ-3.5.2; Action HAZ-3.5.3) would reduce the potential effects of impacts resulting from expansive soils. This impact is considered to be **less than significant.**

Mitigation Measures

None required.

e) no impact

Subsequent land use activities associated with implementation of the proposed Housing Element Update and General Plan Update may allow for development in areas where sewers are not available for the disposal of wastewater and where soils are incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems.

The City contracts for sewer with Tiburon Sanitary District No. 5. No septic or alternative wastewater systems would be installed as a result of the proposed project. Therefore, **no impact** would occur.

Mitigation Measures

None required.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
8. HAZARDS AND HAZARDOUS MATERIALS. Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonable foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles or a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐

EXISTING SETTING

CITY OF BELVEDERE

Hazardous Materials

The Hazardous Waste and Substances Sites (Cortese) List is a planning document used by the state, local agencies, and developers to comply with the California Environmental Quality Act requirements in providing information about the location of hazardous materials release sites.

Government Code Section 65962.5 requires the California Environmental Protection Agency to develop at least annually an updated Cortese List. The Department of Toxic Substances Control (DTSC) is responsible for a portion of the information contained in the Cortese List. Other state and local government agencies are required to provide additional hazardous material release information for the Cortese List. DTSC's EnviroStor database provides DTSC's component of Cortese List data (DTSC, 2010b). In addition to the Envirostor database, the State Water Resource Control Board (SWRCB) Geotracker database provides information on regulated hazardous waste facilities in California, including underground storage tank (UST) cases and non-UST cleanup programs, including Spills-Leaks-Investigations-Cleanups (SLIC) sites, Department of Defense (DOD) sites, and the Land Disposal program. A search of the DTSC Envirostor database and the SWRCB Geotracker determined that there are no known hazardous waste generators or hazardous material spill sites within the City of Belvedere. Furthermore, the city is primarily residential and existing commercial uses are generally low-density (offices, retail). No industrial uses are permitted within the city. Residential and commercial land uses generally do not involve the use, storage, or transport of hazardous materials.

Asbestos-Containing Building Materials

The term "asbestos" describes six naturally occurring fibrous minerals (silicon, oxygen, hydrogen, and various metal cations) found in certain types of rock formations. Because asbestos was a popular commercial product for manufacturers and builders in the 1900s, almost till the 1970s, structures constructed or remodeled between 1930 and 1981 have the potential to include asbestos-containing building materials (ACBM). ACBM may include, but are not limited to, floor coverings, drywall joint compounds, acoustic-ceiling tiles, piping insulation, electrical insulation, and fireproofing materials. Intact and undisturbed ACBM does not pose a health risk, but it becomes a problem when, due to damage, disturbance, or deterioration over time, the material releases fibers into the air. Asbestos fibers can cause serious health problems. If inhaled, these tiny fibers can impair normal lung functions, and increase the risk of developing lung cancer, mesothelioma, or asbestosis (USEPA, 2010).

There are numerous buildings and structures in the city that were constructed between 1930 and 1981.

Lead-Based Materials

Lead is a toxic metal that was used for many years in products found in and around residences. About three-quarters of the nation's housing stock built before 1978 (64 million homes) contains some lead-based paint. Common renovation activities like sanding, cutting, and demolition can create hazardous lead dust and chips by disturbing lead-based paint, which can be harmful to adults and children. Lead also can be emitted into the air from motor vehicles and industrial sources, and lead can enter drinking water from plumbing materials. Lead may cause a range of health effects, from behavioral problems and learning disabilities to seizures and death. Children six years old and under are most at risk (USEPA, 2010).

Many of the buildings and structures within the City of Belvedere were constructed prior to the ban on lead-based paints, and therefore it is likely that these materials are present throughout the city.

Airports

There are no public use airports or private airstrips within the City of Belvedere. Marin County has one general aviation and one small-craft airport: Gnoss Field, north of Novato (general aviation), and Marin Ranch (small craft) in northern San Rafael. Gnoss Field has a 3,300-foot asphalt

runway that accommodates small private aircraft up to 18,500 pounds. Gnoss Field has capacity for 320 aircraft and currently accommodates 301 aircraft with 60,000 takeoffs and landings per year. Marin Ranch Airport is a private airport with 2,180 feet of runway. The airport houses 100 aircraft and accommodates commuter, recreational, and emergency response activities (County of Marin, 2007).

Wildland Fire

No areas within Belvedere city limits are subject to high, very high, or extreme wildfire threats due to the urban nature of the city. Only 33 acres within the city are in wildland-urban-interface areas (ABAG, 2006).

REGULATORY FRAMEWORK

The following federal, state, and local regulations, plans, programs, and guidelines are applicable to the proposed City of Belvedere Housing Element Update and General Plan Update:

- **Federal Laws and Regulations** – Clean Water Act, Clean Air Act, Resource Conservation and Recovery Act, Comprehensive Environmental Response, Compensation, and Liability Act, Residential Lead-Based Paint Hazard Reduction Act of 1992 (Title 10)

- **State Laws and Regulations** – Cal/EPA Unified Program, California Accidental Release Prevention (CalARP) Program, California Department of Toxic Substances Control, UST Program, Hazardous Materials Release Response Plans and Inventory (Business Plan) Program, California Fire and Building Code, Defensible Space Requirements

- **Local Laws, Regulations, and Policies** – BAAQMD Asbestos Demolition/Renovation Program, Marin County Emergency Operations Plan, Marin Hazardous and Solid Waste Joint Powers Authority Underground Storage Tanks (UST), County of Marin Certified Unified Programs Agency (CUPA), Reporting Requirements/HMBP, County of Marin Hazardous Materials Area Plan, Hazardous Waste Management Plan, Vegetation Management Plan

PROJECT IMPACTS AND MITIGATION MEASURES

a–b) less than significant

Future development from the proposed City of Belvedere Housing Element Update and General Plan Update will not result in a significant hazard due to the use, transport, storage, and/or disposal of hazardous materials.

As previously discussed, the City of Belvedere is largely built out with residential uses. The few existing commercial uses are generally low-density (offices, retail). Substantial changes in these land uses and/or development are unlikely over the course of the updated General Plan and Housing Element planning horizon, as the majority of future development will be renovations and replacement of existing homes, as well as a small number of infill and redevelopment opportunities in the commercial and multi-family residential districts. Residential and commercial land uses generally do not involve the use, storage, transport, or disposal of hazardous materials, and no industrial uses are permitted in the city. Therefore, the proposed Housing Element Update and General Plan Update are not expected to result in the use, storage, transport, or disposal of a significant amount of hazardous materials in the city. Furthermore, the use, storage, transport, and disposal of hazardous materials by developers, contractors, business owners, and others are

required to be in compliance with local, state, and federal regulations during project construction and operation as described under the Regulatory Framework subsection above. Facilities that use, store, transport, or dispose of hazardous materials are required to obtain permits and comply with appropriate regulatory agency standards designed to avoid hazards to public health and the environment associated with hazardous materials and hazardous material releases.

Demolition and renovation activities resulting from implementation of the proposed City of Belvedere Housing Element Update and General Plan Update may result in unknown hazardous materials such as ACBM and lead being discovered or encountered. Given the age of many of the structures in the city, it is possible that demolition or renovation of these structures could result in the airborne release of asbestos or lead. Federal, state, and local regulations govern demolition and renovation activities in the city. Both the USEPA Renovation, Repair, and Painting rule and the BAAQMD Asbestos Demolition/Renovation Program require identification and proper handling and disposal of lead and asbestos, respectively. These regulations would mitigate public health hazards associated with demolition and renovation activities under the Housing Element Update and General Plan Update.

As there are currently no facilities in the city that involve the use, storage, transport, or disposal of hazardous material, and as the proposed Housing Element Update and General Plan Update would not facilitate such uses, significant impacts are not anticipated. Federal, state, and local regulations would require that proposed development and redevelopment activities anticipated under the proposed Housing Element Update and General Plan Update reduce the potential exposure to hazardous materials/contaminants and require remediation prior to development on sites suspected to contain hazardous materials such as asbestos and lead. Thus, this impact is considered to be **less than significant**.

Mitigation Measures

None required.

c–d) no impact

The City of Belvedere does not contain any school sites or hazardous materials sites. A search of the DTSC Envirostor database and the SWRCB Geotracker database determined that there are no past or current known hazardous waste generators or hazardous material spill sites within the City of Belvedere.

Industrial uses are currently not allowed in the city, and no facilities exist in the city that involve the use, storage, transport, or disposal of hazardous materials. The proposed Housing Element Update and General Plan Update would not facilitate such uses because the majority of future development will be renovations and replacement of existing homes, as well as a small number of infill and redevelopment opportunities in the commercial and multi-family residential districts. Therefore, the proposed project would not emit hazardous emissions or handle hazardous materials within one-quarter mile of an existing or proposed school and would not place development on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. **No impact** is anticipated.

Mitigation Measures

None required.

e–f) no impact

Land uses and development consistent with the proposed City of Belvedere Housing Element Update and General Plan Update would not locate development in the vicinity of public use airports or private airstrips.

There are no public use airports or private airstrips within the City of Belvedere. Marin County has one general aviation airport (Gnoss Field) and one small-craft airport (Marin Ranch). These airports are not in the vicinity of Belvedere. Therefore, implementation of the proposed City of Belvedere Housing Element Update and General Plan Update would not result in a safety hazard for people residing or working in the city. **No impact** is anticipated.

Mitigation Measures

None required.

g) less than significant

The proposed City of Belvedere Housing Element Update and General Plan Update will not significantly impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

The City does not have its own emergency response plan; instead the County of Marin Emergency Operations Plan provides protection of life, property, and the environment in Belvedere during times of emergency. Additionally, the Marin County Hazardous Materials Area Plan describes pre-incident planning and preparedness for hazardous materials releases and clarifies the roles and responsibilities of federal, state, and local agencies during a hazardous materials incident in the county, including in the City of Belvedere. Implementation of the proposed City of Belvedere Housing Element Update and General Plan Update will not impair implementation of or physically interfere with these plans since substantial changes in the existing land uses and/or development are unlikely over the course of the updated General Plan and Housing Element planning horizon.

Currently, access for fire and police vehicles in the city is a concern where narrow roads present access difficulties, particularly where on-street parking by residents, guests, and construction vehicles makes the right-of-way too narrow to permit a fire truck, ambulance, or police car to pass. To address this issue, the City created a restricted parking program on Belvedere Island that requires all on-street parking to be within designated parking areas delineated by pavement markings. Parking within these designated areas provides the minimum 10-foot clearance required for emergency vehicle access, and violators of the restricted parking program are subject to substantial fines if their vehicles are found parked outside of the marked areas of the designated parking zone. The proposed General Plan Update expressly maintains the practice of issuing parking violations as shown in proposed Action HAZ-1.3.1.

The following General Plan Update policies would help to mitigate adverse effects associated with emergency response plans or emergency evacuation plans: Policy HAZ-1.3; Action HAZ-1.3.1; Action HAZ-1.3.2; Policy HAZ-3.1; Policy HAZ-1.4; Action HAZ-1.4.1; Action HAZ-1.4.2.

The proposed General Plan Update policies and actions identified above would reduce the potential for the Housing Element Update and General Plan Update to interfere with emergency response plans. In particular, the policies continue the existing practice of issuing parking violations for impairing emergency access and new policies ensure that the City will develop and disseminate information on emergency evacuation routes. These policies, along with the relatively minimal amount of development that would occur under the proposed Housing Element Update and General Plan Update, reduce this impact to a **less than significant** level.

Mitigation Measures

None required.

h) less than significant

Implementation of the proposed City of Belvedere Housing Element Update and General Plan Update could result increased exposure of people or structures to fires.

Although the City of Belvedere is not subject to high, very high, or extreme wildfire threats due to the urban nature of the city, fire hazard is a community concern. In part, the hazard is caused by the large number of eucalyptus trees in the city, with their highly flammable wood and tree litter. Fire hazards are also caused by the steep down- and upslope portions of some lots which, due to difficult access, grow wild and contain flammable debris and brush. Houses with wooden roofs and decks built close together also contribute to the fire hazard potential. The extremely narrow and winding streets on Belvedere Island and Corinthian Island are also an impediment to quick response by the Tiburon Fire Protection District (TFPD).

The City has a Fire Sprinkler Ordinance which requires installation of fire sprinkler systems in new homes and during major additions or remodeling projects. In 1992 an ordinance was adopted prohibiting the use of wooden roof materials in the city. Furthermore, when the TFPD checks plans for new projects, it verifies the defensible space as outlined in the Vegetation Management Plan. Future development or redevelopment in the city would be subject to these regulations, as well as to the California Fire and Building Code.

The following policies and associated actions proposed in the General Plan Update would help mitigate adverse effects associated with fire hazards: Action HAZ-1.1.1; Policy HAZ-1.3; Action HAZ-1.3.1; Policy HAZ-4.1; Policy HAZ-4.2; Action HAZ-4.2.1; Policy HAZ-4.5 by allowing for the Tiburon Fire Protection District to review development plans for all proposed new development and remodeling efforts, and by ensuring that all future development and retrofits follow seismic and fire code regulations.

The proposed General Plan Update policies identified above, along with compliance with the TFPD Vegetation Management Plan, the California Fire and Building Code, and the City's ordinances requiring installation of sprinkler systems and prohibition of wooden roof materials, would reduce impacts associated with fire hazards to a **less than significant** level.

Mitigation Measures

None required.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
9. HYDROLOGY AND WATER QUALITY. Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood hazard Boundary of Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☒	☐
h) Place within 100-year flood hazard area structures, which would impede or redirect flood flows?	☐	☐	☒	☐
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☒	☐
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☒	☐

EXISTING SETTING

SURFACE WATER HYDROLOGY

Regional Setting

Marin County encompasses roughly 480 square miles of baylands, alluvial valleys, and uplands which drain to the western margins of central San Francisco Bay and San Pablo Bay, as well as to the Pacific Ocean. The spine of the Coastal Range geographically separates the watershed lands tributary to the bays from lands on the west-facing slopes that drain to the Pacific Ocean. Elevations in these diverse landforms range from sea level at the bay and ocean margins to more than 2,500 feet along Mt. Tamalpais. Geologically, the low-lying lands in the county belong to the bay plain and alluvial valley depositional provinces, while the higher elevation lands occupy the foothills and Marin uplands erosional provinces. The principal eastern watersheds draining to San Francisco Bay/San Pablo Bay/Richardson Bay include Arroyo Corte Madera del Presidio, Coyote Creek, Corte Madera Creek, San Rafael Creek, Las Gallinas Creek, Miller Creek, Novato Creek, and San Antonio Creek. Principal Pacific Ocean watersheds include Estero Americano, Stemple Creek, Walker Creek, Lagunitas Creek, Olema Creek, Pine Gulch Creek, and Redwood Creek.

LOCAL SETTING – CITY OF BELVEDERE

The City of Belvedere is located on the Tiburon Peninsula in the central portion of the San Francisco Bay and is within the Arroyo Corte Madera del Presidio watershed. The western shoreline of Belvedere borders Richardson Bay, and the eastern shoreline borders Belvedere Cove and Raccoon Strait. Richardson Bay and Raccoon Strait join together at the southern tip of the city. Richardson Bay is a relatively shallow, biologically rich area that supports heavy recreational and some light commercial watercraft use. Raccoon Strait is a deep, narrow natural channel that connects San Pablo Bay and central San Francisco Bay. Raccoon Strait is continuously scoured by strong tidal currents in San Francisco Bay. Belvedere Cove is a small inlet between the city and Raccoon Strait that contains one of the cities two major yacht clubs and several residential docks (WRA, 2008).

Belvedere Lagoon is a man-made lagoon that was created after World War II. The lagoon is completely enclosed, and water levels are controlled by a pump station and tidal gates along San Rafael Avenue. The pump station and tidal gates takes water in to the lagoon during summer months and pumps water out during winter months. The lagoon is treated with dyes to control algal growth (WRA, 2008).

GROUNDWATER HYDROLOGY

Marin County, including the City of Belvedere, is located in the midst of California's Coast Range, where the western edge of the North American Plate meets the Pacific Plate. Groundwater in the area is very limited as it is either found in fractures in the Franciscan Formation or in shallow alluvial deposits in valleys. In the mid-1970s the Marin Municipal Water District (MMWD) explored possible well locations in the Headlands area just north of the Golden Gate and on Mt. Tamalpais and found that after several days of pumping at relatively low rates the wells began to show significant drawdown. A report prepared in 1978 on the groundwater potential of the Ross Valley, the area's largest contained alluvial deposit, found that the capacity of that source was very limited and already was being utilized for landscape irrigation purposes by both public and private parties (MMWD, 2006a).

There is not a significant groundwater basin underlying the City of Belvedere (County of Marin, 2005b). The City uses groundwater from a well to irrigate city parks. Otherwise, groundwater is not utilized within the city.

Water Quality

The quality of stormwater runoff in the region affects the biotic health of both inland waterways and the downstream receiving waters of San Rafael and San Pablo bays. It also influences the extent and quality of water-oriented recreational uses. While the chemical characteristics of natural waters vary with local geology and climatic influences (e.g., rainfall and temperature), the impact of human activities typically occurs more dramatically over a shorter time period. Residential and commercial development results in increased pollutant loading of stormwater discharged to local waterways. Contaminated runoff is generated and concentrated over impervious surfaces in these urbanizing portions of the watersheds and enters storm drains, eventually reaching creeks and/or San Rafael and San Pablo bays. This type of dispersed contaminant loading is referred to as non-point source pollution. Constituents in urban stormwater in the Bay Area include fine sediments, heavy metals, trace organics (e.g., pesticides, polychlorinated biphenyls [PCB]), nutrients, and oil and grease (County of Marin, 2005b).

Section 303(d) of the federal Clean Water Act (discussed further under the Regulatory Framework subsection below) requires that states develop a list of water bodies that do not meet water quality standards, establish priority rankings for waters on the list, and develop action plans, called Total Maximum Daily Loads (TMDL), to improve water quality. The list of impaired water bodies is revised periodically (typically every two years). The most recent Section 303(d) list was approved in June of 2007. Several bays surrounding the City of Belvedere have been designated impaired for multiple pollutants, including Richardson Bay, central San Francisco Bay, and San Pablo Bay. The pollutants in these bays are shown in **Table 12** below.

TABLE 12
2006 CWA 303(D) LIST OF WATER QUALITY LIMITED SEGMENTS

Water Body	Pollutants/Stressors	Proposed or USEPA Approved TMDL Completion
Richardson Bay	Chlordane	2008
	Coliform Bacteria	2019
	DDT	2008
	Dieldrin	2008
	Dioxin Compounds (including 2,3,7,8-TCDD)	2019
	Exotic Species	2019
	Furan Compounds	2019
	Mercury	2006
	PCBs	2006 (2019 for dioxin-like PCBs)

Water Body	Pollutants/Stressors	Proposed or USEPA Approved TMDL Completion
San Pablo Bay	Chlordane	2008
	DDT	2008
	Dieldrin	2008
	Dioxin Compounds (including 2,3,7,8-TCDD)	2019
	Exotic Species	2019
	Furan Compounds	2019
	Mercury	2006
	PCBs	2006 (2019 for dioxin-like PCBs)
	Nickel	2019
	Selenium	2019
Central San Francisco Bay	Chlordane	2008
	DDT	2008
	Dieldrin	2008
	Dioxin Compounds (including 2,3,7,8-TCDD)	2019
	Exotic Species	2019
	Furan Compounds	2019
	Mercury	2006
	PCBs	2006 (2019 for dioxin-like PCBs)
	Selenium	2019

Source: SWRCB, 2007

Additionally, on February 11, 2009, the SWRCB adopted a resolution approving staff's recommendations for proposed additions, deletions, and changes to the 303(d) list of impaired water bodies in the San Francisco Bay region. The recommendations include listing trash impairment for the central San Francisco Bay (CRWQCB, 2009).

FLOODING AND STORM DRAINAGE

Flooding

According to the Federal Emergency Management Agency (FEMA), all low-lying areas around the lagoon are in floodplain zone AE, or areas with a 1 percent annual chance of flooding and a 26 percent chance of flooding over the life of a 30-year mortgage. The floodplains within the city are shown in **Figure 7**. Low-lying portions of Belvedere are also susceptible to inundation from tsunami, which consists of large waves produced from a seismic event. Belvedere Lagoon neighborhoods and low-lying areas along the northern shoreline of Belvedere Island could be impacted if a 20-foot-high tsunami wave were to enter the Golden Gate. Impacts from a tsunami could include damage to improvements from wave inundation and from wave-carried debris. Tsunamis are potential safety hazards as well as a hazard to property. The actual areas that will be impacted from a tsunami will vary depending on factors such as the size of the tsunami wave, tide level at the time of the tsunami, the wave source location, and the wave direction. In general,

areas adjacent to the shoreline that are below an elevation of approximately 15 to 20 feet above mean sea level appear to have a higher level of risk. A tsunami warning system is currently in place in the Bay Area. The system is intended to alert people to an imminent tsunami with sufficient time to permit safe evacuation from areas of high risk.

Storm Drainage

The City of Belvedere Public Works Department maintains a network of more than 260 storm drains and an estimated 3 miles of pipes connecting storm drains with the lagoon and the Bay. This system collects stormwater runoff from streets, gutters, ditches, and hillsides, and conveys it via pipes to an area where it will not cause flooding. As in most Bay Area cities, the water collected by the storm drains in Belvedere flows directly into the lagoon or to the Bay, depending on where the storm drain is located, without any treatment. The storm drains and pipes are inspected and cleaned annually to comply with stormwater regulations – best management practices. During the fall months and the rainy season, Public Works staff clears leaves from the storm drain inlets to prevent flooding. Streets are also swept by staff more frequently in areas of high leaf drop to keep leaves from entering the system and causing blockages. Improvements are made to the system by the City Engineer through Capital Improvement Projects.

REGULATORY FRAMEWORK

The following federal, state, and local regulations, plans, programs, and guidelines are applicable to the proposed City of Belvedere Housing Element Update and General Plan Update:

- **Federal Laws and Regulations** – Clean Water Act, 303(d) of the CWA, Federal Disaster Mitigation Act of 2000
- **State Laws and Regulations** – Porter-Cologne Water Quality Control Act, National Pollutant Discharge Elimination System (NPDES) Permit Program, AB 162, National Flood Insurance Program
- **Local Laws, Regulations, and Policies** – San Francisco Bay Regional Water Quality Control Board, San Francisco Bay Basin Plan, Marin County Stormwater Pollution Prevention Program, City of Belvedere Urban Runoff Pollution Prevention Ordinance, City of Belvedere Grading and Erosion Control Regulations, City of Belvedere Floodplain Management Regulations

PROJECT IMPACTS AND MITIGATION MEASURES

a) less than significant

Infill development or redevelopment under the proposed City of Belvedere Housing Element Update and General Plan Update would include construction-related activities that could expose soil to erosion during storm events, causing degradation of water quality. The proposed General Plan Update could increase impervious surfaces, and as a result, increased runoff from urban uses may also contribute to the degradation of water quality in the area.

The City of Belvedere is largely built out with residential land uses, as well as a few low-intensity commercial uses (office/retail). Substantial changes in these land uses and/or development are unlikely over the course of the updated General Plan and Housing Element planning horizon, as the majority of future development will be renovations and replacement of existing homes, as well as a small number of infill and redevelopment opportunities in the commercial and residential areas.

T:_GIS\MARIN_COUNTY\MXDS\BELEVEDERE\FIGURE 5.MXD - 2/19/2010 @ 1:34:42 PM

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Figure 7
FEMA Flood Zone Designations

PMC

CONSTRUCTION WATER QUALITY IMPACTS

Construction, primarily associated with infill and redevelopment activities, under the proposed Housing Element Update and General Plan Update could consist of grading, demolition, and vegetation removal activities that would increase soil erosion rates on the areas proposed for infill or redevelopment. Grading operations could impact the surface runoff by increasing the amount of silt and debris carried by runoff. Additionally, refueling and parking of construction equipment and other vehicles on-site during construction may result in oil, grease, or related pollutant leaks and spills that may discharge into the city's storm drains. Improper handling, storage, or disposal of fuels and materials or improper cleaning of machinery close to area waterways could cause water quality degradation.

OPERATIONAL WATER QUALITY IMPACTS

Subsequent development under the proposed Housing Element Update and General Plan Update could result in renovations and replacement of existing homes, as well as a small number of infill and redevelopment opportunities in the commercial and multi-family residential districts. Direct surface water quality impacts could result from this development, including:

- Residential: Maintenance of yards associated with the use of fertilizers, herbicides, and pesticides, and motor vehicle operation and maintenance

- Commercial: Maintenance of landscape areas associated with the use of fertilizers, herbicides, and pesticides, and motor vehicle operation and maintenance

Runoff typically contains oils, grease, fuel, antifreeze, and byproducts of combustion (such as lead, cadmium, nickel, and other metals), as well as nutrients, sediments, and other pollutants. Additionally, sizable quantities of animal waste from pets (e.g., dogs and cats) could lead to fecal contamination of water sources. The amount and type of runoff generated by the various projects would be greater than that under existing conditions due to increases in impervious surfaces. There would be a corresponding increase in urban runoff pollutants and roadway contaminants such as heavy metals, oil, and grease, as well as an increase in nutrients (i.e., fertilizers) and other chemicals from landscaped areas. These constituents would result in water quality impacts to on- and off-site drainage flows to area waterways.

The construction- and operation-related water quality impacts as described above are not expected to be significant given the minimal amount of growth and development anticipated during the Housing Element Update and General Plan Update planning horizon. Furthermore, potential impacts to water quality from construction and operation activities are currently addressed through the existing requirements of the City's Urban Runoff Pollution Prevention Ordinance, as well as through the City's Grading and Erosion Control Ordinance. Compliance with the Urban Runoff Pollution Prevention Ordinance would ensure reduction of pollutants in stormwater discharges to the maximum extent practicable as the ordinance explicitly grants authority to the City to require as a condition of project approval permanent structural controls designed to remove sediment and other pollutants. Furthermore, compliance with SWRCB's General Permit Coverage for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) under Water Quality Order No. 2003-00005-DWQ (Phase II General Permit) would further control pollutant discharges from development and/or redevelopment activities in the city.

Additionally, the Regional Water Quality Control Board (RWQCB) Basin Plan describes the beneficial uses to be protected in Bay Area waterways, water quality objectives to protect those uses, and implementation measures to make sure the objectives are achieved. The RWQCB will

be required to adopt TMDLs for all impaired waterways. SWRCB has approved the Basin Plan Amendment that established new water quality objectives for mercury in the tissues of Bay fish and a TMDL for mercury in San Francisco Bay, as well as a Richardson Bay pathogen TMDL and Basin Plan Amendment. The TMDLs implement additional controls on both point and non-point source discharges into the impaired waterways that are not expected to be restored through normal point source controls.

The following General Plan Update policies and actions are proposed to further mitigate water quality impacts: Action CD-10.1.4; Policy SUST-11.1; Action SUST-11.1.1; Action SUST-11.1.2; Action SUST-11.1.3. These policies encourage management of the lagoon using the most effective, environmentally friendly methods available, including minimizing the use of fertilizers and toxic weed and pest control on lawns. These policies also require landscape plans to include appropriate planting to repair, reseed, and/or replant disturbed areas to prevent erosion.

The proposed General Plan Policies identified above, as well as the City's Municipal Code, NPDES requirements, and TMDLs, would reduce potential water quality impacts resulting from the renovation and replacement of existing homes, as well as the small number of infill and redevelopment accommodated by the Housing Element Update and General Plan Update to a **less than significant** level.

Mitigation Measures

None required.

b) no impact

Development under the proposed City of Belvedere Housing Element Update and General Plan Update would not cause groundwater levels to fluctuate and would not affect recharge.

Other than small amounts of groundwater pumped in order to irrigate city parks, the City of Belvedere does not utilize groundwater for drinking or other uses and is not proposing to expand this pumping under the General Plan Update. There are no major groundwater basins beneath the city. Furthermore, the City of Belvedere is largely built out and substantial changes in land uses and/or development that would create substantial new impervious surfaces are unlikely over the course of the updated General Plan and Housing Element planning horizon. Therefore, **no impact** relative to groundwater depletion or recharge is anticipated.

Mitigation Measures

None required.

c–d) less than significant

Development under the proposed City of Belvedere Housing Element Update and General Plan Update could alter existing drainage patterns and contribute to increased erosion. Erosion can be triggered by many natural events such as destruction of vegetation by wildfires, incision of gullies due to uncontrolled surface drainage, and undermining of shoreline slopes by wave action. Areas where natural vegetation and drainage patterns are disturbed by construction, such as graded slopes, are particularly susceptible to erosion. Increased volumes of surface water discharged from impervious surfaces in developed areas can also cause erosion. The impacts of soil erosion can include undermining of roads and foundations, potential destabilization of slopes, and deposition of excessive amounts of sediments into the Bay.

Given that the City of Belvedere is largely built out, substantial changes in existing land uses and/or development are unlikely over the course of the updated General Plan and Housing Element planning horizon. The majority of future development would be renovation and replacement of existing homes, as well as a small number of infill and redevelopment opportunities in the commercial and multi-family residential districts. These types of development activities would not be expected to disturb substantial amounts or vegetation or result in extensive grading, nor would they considerably increase impervious surfaces.

The following General Plan Update policies and associated actions would help to mitigate impacts to the stormwater drainage system and associated flooding: Action CD-1.1.5; Policy HAZ-1.1; Action HAZ-3.6.1; Action HAZ-3.6.2.

The proposed General Plan Update policies identified above would increase stormwater management, particularly by maintaining surface drainage facilities and vegetative cover. Due to the low level of development that is expected to take place in Belvedere over the course of the Housing Element Update and General Plan Update timeline, the community's existing stormwater drainage system is expected to be maintained, but not expanded. Therefore, as the frequency, volume, and flow rate of stormwater runoff increases are not expected to exceed the capacity of the storm drain system or result in flooding, impacts are considered to be **less than significant**.

e) less than significant

Land uses and development under the proposed City of Belvedere Housing Element Update and General Plan Update would not increase stormwater runoff rates and volumes such that flows would exceed the capacity of the existing stormwater drainage system and result in flooding or the need for new or expanded stormwater drainage facilities.

The natural stormwater runoff and infiltration process is altered when a site is developed with urban uses such as buildings, roads, and parking lots, which introduces impervious surfaces (asphalt, concrete, roofs, and other materials) to the landscape. As a result, the frequency, volume, and flow rate of stormwater runoff increases and could exceed the capacity of the storm drain system and result in flooding.

Given that the City of Belvedere is largely built out, the proposed Housing Element Update and General Plan Update will not result in substantial changes in land use and/or development in the city. A small number of infill and redevelopment opportunities, primarily in the commercial and multi-family residential districts, could slightly increase impervious surfaces and thus stormwater runoff. However, increased stormwater runoff would not be substantial and would not be expected to exceed the capacity of the existing storm drain system in the city. Furthermore, Section 8.36 of the Belvedere Municipal Code explicitly grants authority to the City to establish controls on the volume and rate of stormwater runoff from new development to minimize peak flows or total runoff volume, including limiting impervious area or stipulating that detention and retention of runoff occur on-site.

The following General Plan Update policies and action items would help mitigate impacts to the stormwater drainage system and associated flooding: Action CD-1.1.5; Policy HAZ-1.1; Action HAZ-3.6.1; Action HAZ-3.6.2.

The proposed General Plan Update policies identified above would increase stormwater management, particularly by maintaining surface drainage facilities and vegetative cover. Due to the low level of development that is expected to take place in Belvedere over the course of

the Housing Element Update and General Plan Update timeline, the community's existing stormwater drainage system is expected to be maintained, but not expanded. Therefore, as the frequency, volume, and flow rate of stormwater runoff increases are not expected to exceed the capacity of the storm drain system or result in flooding, impacts are considered to be **less than significant**.

Mitigation Measures

None required.

f) less than significant

See response to (a) above.

g–i) less than significant

Implementation of the proposed Belvedere Housing Element Update and General Plan Update could result in the exposure of additional people and/or structures to potential risks from flooding and erosion hazards. According to the Federal Emergency Management Agency (FEMA), portions of the city are located within the 100-year floodplain. About 87 acres of the residential properties in the city are located in the 100-year flood zone (AE) and about 21 acres are located in the 150–200 year flood zone (B), because of their proximity to Belvedere Lagoon. In addition, approximately 500 yards of San Rafael Avenue are susceptible to flooding and erosion.

Although the proposed Belvedere Housing Element Update and General Plan Update would allow for the renovation and replacement of some existing homes, as well as a small number of infill and redevelopment opportunities in the commercial and multi-family residential districts, the proposed General Plan Update limits new construction in floodplains unless mitigation measures are incorporated. In addition, Title 16, Chapter 16.20 of the Belvedere Municipal Code includes requirements that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction. Specifically, the Municipal Code standards require residential structures to be 1 foot above the base flood elevation in a flood zone. The Municipal Code also regulates the alteration of natural floodplains, stream channels, and natural protective barriers which help accommodate or channel flood waters, as well as filling, grading, dredging, and other development which may increase flood damage.

Though proposed General Plan Update policies and actions (Policy HAZ-1.3; Action HAZ-1.3.2; Policy HAZ-1.4; Action HAZ-1.4.1; Action HAZ-1.4.2; Action HAZ-1.4.4; Policy HAZ-2.1; Action HAZ-2.1.1; Policy HAZ-2.2; Action HAZ-2.2.1; Policy HAZ-2.3; Action HAZ-2.3.1; Action HAZ-2.3.2; Policy HAZ-2.4; Action HAZ-2.4.1; Policy HAZ-2.5; Action HAZ-2.5.1; Policy HAZ-5.2) would help to mitigate impacts associated with flooding and erosion, additional mitigation would be required, as identified below, to lessen impacts from flooding and erosion. These policies provide for detailed plans for community-wide disaster preparedness and evacuation plans and require that new development on the shoreline of the city be analyzed for flooding and erosion impacts. These policies also require that FEMA guidelines and suggested activities be incorporated into local government plans and procedures for managing flood hazards.

j) less than significant

Land uses and new development or redevelopment under the proposed General Plan Update and Housing Element Update are not expected to expose substantial numbers of people and structures to hazards associated with seismically induced tsunamis and seiches.

Low-lying portions of Belvedere are susceptible to inundation from tsunami. In particular, Belvedere Lagoon neighborhoods and low-lying areas along the northern shoreline of Belvedere Island could be impacted if a 20-foot-high tsunami wave were to enter the Golden Gate (ENGEO, 2009). The actual areas that will be impacted from a tsunami will vary depending on factors such as the size of the tsunami wave, tide level at the time of the tsunami, the wave source location, and the wave direction. In general, areas adjacent to the shoreline that are below an elevation of approximately 15 to 20 feet above mean sea level appear to have a higher level of risk. A tsunami warning system is currently in place in the Bay Area. The system is intended to alert people to an imminent tsunami with sufficient time to permit safe evacuation from areas of high risk. The areas of highest risk of tsunami inundation are identified on **Figure 6** and described in **Table 11**.

Impacts from tsunami could include damage to improvements from wave inundation and from wave-carried debris. Tsunami is a potential safety hazard as well as a hazard to property.

The following General Plan Update policies and actions would help mitigate impacts from tsunamis and seiches: Policy HAZ-1.1; Action HAZ-1.2.1; Action HAZ-1.2.2; Action HAZ-1.3.2; Policy HAZ-1.4; Action HAZ-1.4.1; Action HAZ-1.4.4; Policy HAZ-2.2; Action HAZ-2.2.1. These policies provide for detailed plans for community-wide disaster preparedness and evacuation plans and require that new development on the shoreline of the city be analyzed for tsunami impacts. These policies also require that mitigation measures be identified for areas identified as potential locations for adverse impacts from tsunamis.

Elimination of all potential tsunami inundation risks will not be feasible since residential development of low-lying shoreline in areas of Belvedere was completed many years ago. Risk from tsunami hazards can be reduced by providing an appropriate evacuation plan. A tsunami warning system is currently in place in the Bay Area. The system is intended to alert people to an imminent tsunami with sufficient time to permit safe evacuation from areas of high risk. Belvedere will periodically review and update the city evacuation plan (Action HAZ-1.4.4). The proposed General Plan policies and associated actions listed above would reduce the potential effects of impacts resulting from tsunamis. This impact is considered to be **less than significant.**

Mitigation Measures

None required.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
10. LAND USE AND PLANNING. Would the project:				
a) Physically divide an established community?	☐	☐	☒	☐
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐
c) Conflict with any applicable habitat conservation plan or natural community conservation plan? *	☐	☐	☒	☐

**Impacts associated with applicable habitat conservation/natural community plans are discussed under the Biological Resources subsection.*

EXISTING SETTING

REGIONAL SETTING

Marin County encompasses 520 square miles and is one of the nine Bay Area counties. The county includes rural ranching and dairy operations, industry including information technologies and manufacturing, and 141,400 acres of parkland, open space, and recreation lands. The county is well known for its housing and recreational resources for Bay Area residents and visitors.

LOCAL SETTING – CITY OF BELVEDERE

Primarily residential, the City of Belvedere contains four general categories of land uses:

- Residential areas form the largest percentage with almost 92 percent of the land dedicated to housing. These residential areas include single-family residences and duplex or multi-family residences.
- Open spaces, along with recreational spaces and parks, constitute about 5 percent of the total land area.
- Commercial and office areas form less than 1 percent of the total area and are primarily combined as mixed uses with residential areas or as commercial strip development.
- Public facilities like churches and nursery schools occupy less than 1 percent of the total land area.

Single-family residences occupy a major portion of the land in Belvedere, in areas having the following zoning designations:

- R-1L: Single-family residence in the Belvedere Lagoon neighborhood
- R-15: Single-family residence on Belvedere Island

- R-1W: Single-family residence along West Shore Road (along the waterfront)
- R-1C: Single-family residence on Corinthian Island

Assessing the existing land uses, there are about 13 acres of land allotted to duplexes, apartments, or condominiums, which are designated either an R-2 (Duplex) or an R-3 (Multi-family) zone. Only 3 acres of the total land in Belvedere has a C-1 (Commercial) zoning designation, which permits retail and office commercial establishments.

As discussed under Existing Setting in the Aesthetics subsection above, there are four distinct residential areas of the community: Belvedere Island, Corinthian Island, the Lagoon Area, and the West Shore Road Area. Belvedere Island is the oldest historical section of Belvedere and is characterized by a variety of architectural styles and sizes of homes. Corinthian Island is a small natural island, about half of which is within the City of Belvedere and half within Tiburon. The Lagoon Area consists of small to moderate-sized lots with one- and two-story homes fronting on the waters of the Belvedere Lagoon. In addition, the West Shore Road Area is a geographically distinct neighborhood situated at the western base of Belvedere Island.

REGULATORY FRAMEWORK

The following federal, state, and local regulations, plans, programs, and guidelines are applicable to the proposed City of Belvedere Housing Element Update and General Plan Update:

- **Federal Laws and Regulations** – There are no applicable federal regulations or programs for the General Plan Planning Area.
- **State Laws and Regulations** – California Government Code
- **Local Laws, Regulations, and Policies** – San Francisco Bay Conservation and Development Commission's San Francisco Bay Plan, Richardson Bay Special Area Plan

PROJECT IMPACTS AND MITIGATION MEASURES

a) less than significant

Given that Belvedere is largely built out, substantial changes in land use and development are unlikely over the course of the updated General Plan and Housing Element planning horizon. With most of the land area devoted to residential use, the majority of development will be renovation and replacement of existing homes, though there are a small number of infill and redevelopment opportunities, primarily in the commercial and multi-family residential districts. When examining residential parcels that could be suitable for greater intensification, it was determined by the City that parcels that were adjacent to commercial areas would be the best candidates for increased densities. These parcels are currently zoned for the highest density in Belvedere (R-3, Multi-Family Residential, 20 units per acre) and are close to the downtown core areas of the city and therefore close to transportation centers and other public services. The General Plan Update proposes to adjust the R-3 zoning district from 20 units per acre to 35 units per acre. This would impact only a few properties, namely the one at 7 Beach Road which is currently occupied by a two-story, five-unit office/residential building and faces one of Belvedere's main thoroughfares, Beach Road. The parcel is across from Belvedere Cove and is directly adjacent to the Boardwalk Shopping Center and the three-story Ark Apartments. The General Plan Update proposal to adjust the R-3 zoning district would increase the residential development potential of 7 Beach Road by four units (an increase of nine people at 2.25

residents per housing unit). These changes would not result in incompatible land uses (e.g., industrial adjacent to residential). Second dwelling units are currently allowed on any residentially zoned parcel 10,000 square feet or larger that has a single-family residence. The proposed Housing Element Update contains a number of programs aimed at increasing the potential number of second units that could be constructed. Second units would be compatible with the residential areas in which they would be located. As such, land use conflicts would be considered **less than significant.**

Finally, implementation of the proposed City of Belvedere Housing Element Update and General Plan Update would not result in the physical division of established communities because the proposed General Plan Update maintains the existing land use patterns of the city rather than developing in a way that might divide established communities (e.g., development of a highway or establishment of land use patterns that divide existing communities). Therefore, impacts associated with the division of established communities would be considered **less than significant**.

Mitigation Measures

None required.

b) less than significant

Land use plans providing for environmental protection within and surrounding the City of Belvedere include the Bay Plan, the Richardson Bay Area Special Plan, and the Town of Tiburon General Plan. The Tiburon General Plan applies to the Town of Tiburon, and the Bay Plan applies to areas under BCDC jurisdiction. The Richardson Bay Area Special Plan applies to activities in Richardson Bay. Applicable regulations include those adopted by local, regional, state, and federal agencies for lands or resources under their jurisdiction.

SAN FRANCISCO BAY PLAN

The San Francisco Bay Plan includes policies on issues critical to the wise use of the Bay, ranging from ports and public access to design and transportation. The Bay Plan also contains maps of the entire Bay which designate shoreline areas that should be reserved for water-related purposes like ports, industry, public recreation, airports, and wildlife refuges. The proposed General Plan Update does not include any proposed land use changes to the City of Belvedere bayside that would conflict with the San Francisco Bay Plan. Therefore, conflicts with the Bay Plan resulting from the implementation of the Housing Element Update and General Plan Update would be **less than significant**.

RICHARDSON BAY SPECIAL AREA PLAN

The proposed General Plan Update incorporates the policies of the Richardson Bay Special Area Plan (Belvedere General Plan Action LU-5.1.1). Therefore, conflicts with the Richardson Bay Special Area Plan resulting from the implementation of the Housing Element Update and General Plan Update would be **less than significant**.

TOWN OF TIBURON GENERAL PLAN

The Town of Tiburon is adjacent to Belvedere. Therefore, the Tiburon General Plan is relevant to the City of Belvedere. The proposed General Plan Update would not significantly change the land use designations in areas that are adjacent to Tiburon, because areas located adjacent to the town boundaries would remain as they are currently designated and would be compatible

with adjacent uses. Therefore, conflicts with the Tiburon General Plan created by the implementation of the proposed Belvedere General Plan Update would be **less than significant**.

CITY OF BELVEDERE ZONING ORDINANCE

Currently, the various zoning districts defined by the city's Land Use and Zoning Maps do not relate to the land uses outlined in the proposed General Plan. Hence, the Belvedere General Plan Update will need to include policies to bring the General Plan Land Use Map and Zoning Ordinance into agreement. The proposed General Plan includes policy provisions to ensure consistency with the Zoning Ordinance and Municipal Code. Therefore, conflicts created by the implementation of the proposed General Plan Update would be **less than significant**.

Mitigation Measures

None required.

c) less than significant

The reader is directed to discussion of impacts under issue f) in Section 4 (Biological Resources) of this IS/MND.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
11. MINERAL RESOURCE. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

LOCAL SETTING – CITY OF BELVEDERE

The City of Belvedere is largely built out with residential and some commercial uses. There are no mineral resources or operations within the city limits.

REGULATORY FRAMEWORK

The following state regulations, plans, programs, and guidelines are applicable to the proposed City of Belvedere Housing Element Update and General Plan Update:

- **Federal Laws and Regulations** – There are no applicable federal regulations or programs for the General Plan Planning Area.
- **State Laws and Regulations** – State Mining and Reclamation Act
- **Local Laws, Regulations, and Policies** – There are no applicable local regulations or programs for the General Plan Planning Area.

PROJECT IMPACTS AND MITIGATION MEASURES

a–b) no impact

As discussed above, the City of Belvedere is largely built out with residential and some commercial uses. There are no mineral resources or operations in the city. The city contains no sites designated by the California State Department of Conservation, Division of Mines and Geology as having significant mineral resources for the North Bay region. As such, changes contemplated by the City's proposed Housing Element Update and General Plan Update would have **no impact** on mineral resources.

Mitigation Measures

None required.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
12. NOISE. Would the project:				
a) The exposure of persons to, or the generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) The exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☒	☐	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

EXISTING SETTING

ACOUSTIC FUNDAMENTALS

Noise is generally defined as sound that is loud, disagreeable, or unexpected. Sound is mechanical energy transmitted in the form of a wave because of a disturbance or vibration. Sound levels are described in terms of both amplitude and frequency.

Amplitude

Amplitude is defined as the difference between ambient air pressure and the peak pressure of the sound wave. Amplitude is measured in decibels (dB) on a logarithmic scale. For example, a 65 dB source of sound, such as a truck, when joined by another 65 dB source results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by 3 dB). Amplitude is interpreted by the ear as corresponding to different degrees of loudness. Laboratory measurements correlate a 10 dB increase in amplitude with a perceived doubling of loudness and establish a 3 dB change in amplitude as the minimum audible difference perceptible to the average person.

Frequency

The frequency of a sound is defined as the number of fluctuations of the pressure wave per second. The unit of frequency is the Hertz (Hz). One Hz equals one cycle per second. The human ear is not equally sensitive to sound of different frequencies. For instance, the human ear is more sensitive to sound in the higher portion of this range than in the lower, and sound waves below 16 Hz or above 20,000 Hz cannot be heard at all. To approximate the sensitivity of the human ear to changes in frequency, environmental sound is usually measured in what is referred to as "A-weighted decibels" (dBA). On this scale, the normal range of human hearing extends from about 10 dBA to about 140 dBA.

Addition of Decibels

Because decibels are logarithmic units, sound levels cannot be added or subtracted through ordinary arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3 dB increase. In other words, when two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dB higher than one source under the same conditions. For example, if one automobile produces a sound level of 70 dB when it passes an observer, two cars passing simultaneously would not produce 140 dB; rather, they would combine to produce 73 dB. Under the decibel scale, three sources of equal loudness together would produce an increase of 5 dB.

SOUND PROPAGATION AND ATTENUATION

Geometric Spreading

Noise sources are generally characterized as either a localized source (i.e., point source) or a line source. Examples of point sources include construction equipment, vehicle horns, alarms, and amplified sound systems. Examples of line sources include trains and on-road vehicular traffic. Sound from a point source propagates uniformly outward in a spherical pattern.

For a point source, sound levels generally decrease (attenuate) at a rate of approximately 6 decibels for each doubling of distance from the source, depending on ground surface characteristics. For acoustically hard sites (i.e., sites with a reflective surface between the source and the receiver), no excess ground attenuation is assumed. Parking lots and bodies of water are examples of hard surfaces which generally attenuate at this rate. For acoustically absorptive or soft sites (i.e., those sites with an absorptive ground surface between the source and the receiver, such as soft dirt, grass, or scattered bushes and trees), an excess ground-attenuation value of 1.5 decibels per doubling of distance is normally assumed. When soft surfaces are present, the excess ground attenuation for soft surfaces generally results in an overall attenuation rate of approximately 7.5 decibels per doubling of distance from the point source.

On-road vehicle traffic consists of several localized noise sources on a defined path and hence can be treated as a line source, which approximates the effect of several point sources. Noise from a line source propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels for line sources attenuate at a rate of approximately 3 decibels for each doubling of distance for hard sites and approximately 4.5 decibels per doubling of distance for soft sites.

Atmospheric Effects

Receptors located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels. Sound levels can

be increased at large distances (e.g., more than 500 feet) from the highway due to atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence can also have significant effects.

Shielding by Natural or Human-Made Features

A large object or barrier in the path between a noise source and a receiver can substantially attenuate noise levels at the receiver. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Natural terrain features (e.g., hills and dense woods) and human-made features (e.g., buildings and walls) can substantially reduce noise levels. Walls are often constructed between a source and a receiver specifically to reduce noise. A barrier that breaks the line of sight between a source and a receiver will typically result in minimum 5 dB of noise reduction. Taller barriers provide increased noise reduction.

Noise reductions afforded by building construction can vary depending on construction materials and techniques. Standard construction practices typically provide approximately 15 dBA exterior-to-interior noise reductions for building façades, with windows open, and approximately 20–25 dBA, with windows closed. With compliance with current building construction and insulation requirements, exterior-to-interior noise reductions typically average approximately 25 dBA. The absorptive characteristics of interior rooms, such as carpeted floors, draperies and furniture, can result in further reductions in interior noise.

HUMAN RESPONSE TO NOISE

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities, including sleep, speech, recreation, and tasks that demand concentration or coordination. Hearing loss can occur at the highest noise intensity levels. When community noise interferes with human activities or contributes to stress, public annoyance with the noise source increases. The acceptability of noise and the threat to public well-being are the basis for land use planning policies preventing exposure to excessive community noise levels.

Unfortunately, there is no completely satisfactory way to measure the subjective effects of noise or of the corresponding reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance and habituation to noise over differing individual experiences with noise. Thus, an important way of determining a person's subjective reaction to a new noise is the comparison of it to the existing environment to which one has adapted: the so-called "ambient" environment. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged. Regarding increases in A-weighted noise levels, knowledge of the following relationships will be helpful in understanding this analysis:

- Except in carefully controlled laboratory experiments, a change of 1 dB cannot be perceived by humans.

- Outside of the laboratory, a 3 dB change is considered a just-perceivable difference.

- A change in level of at least 5 dB is required before any noticeable change in community response would be expected. An increase of 5 dB is typically considered substantial.

- A 10-dB change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

A limitation of using a single noise-level increase value to evaluate noise impacts, as discussed above, is that it fails to account for pre-development noise conditions. With this in mind, the Federal Interagency Committee on Noise (FICON) developed guidance to be used for the assessment of project-generated increases in noise levels that takes into account the ambient noise level. The FICON recommendations are based on studies that relate aircraft noise levels to the percentage of persons highly annoyed by aircraft noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, these recommendations are often used in environmental noise impact assessments involving the use of cumulative noise exposure metrics, such as the average-daily noise level (i.e., CNEL, L_{dn}). FICON-recommended noise evaluation criteria are summarized in **Table 13** (Ambient, 2010).

TABLE 13
FEDERAL INTERAGENCY COMMITTEE ON NOISE
RECOMMENDED CRITERIA FOR EVALUATION OF INCREASES IN AMBIENT NOISE LEVELS

Ambient Noise Level Without Project	Increase Required for Significant Impact
< 60 dB	5.0 dB, or greater
60-65 dB	3.0 dB, or greater
> 65 dB	1.5 dB, or greater

Source: Ambient, 2010

As depicted in **Table 13**, an increase in the traffic noise level of 5.0, or greater, would typically be considered to result in increased levels of annoyance where existing ambient noise levels are less than 60 dB. Within areas where the ambient noise level ranges from 60 to 65 dB, increased levels of annoyance would be anticipated at increases of 3 dB, or greater. Increases of 1.5 dB, or greater, could result in increased levels of annoyance in areas where the ambient noise level exceeds 65 dB. The rationale for the FICON-recommended criteria is that as ambient noise levels increase, a smaller increase in noise resulting from a project is sufficient to cause significant increases in annoyance (AMBIENT 2010). These criteria are commonly applied for analysis of environmental noise impacts.

LOCAL SETTING – CITY OF BELVEDERE

Noise-Sensitive Land Uses

Noise-sensitive land uses are generally considered to include those uses that would result in noise exposure that could cause health-related risks to individuals. Places where quiet is essential are also considered noise-sensitive uses. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Other land uses such as libraries, places of worship, and recreation areas are also considered noise-sensitive land uses.

Noise-sensitive land uses in the city consist predominantly of residential land uses, which are generally located within four distinct neighborhoods. Belvedere Island has the largest land area and is the most varied in terms of topography and landforms. Belvedere Lagoon forms the

second, flatter portion of the city which surrounds the interior waterway. The third neighborhood is formed on Corinthian Island facing Belvedere Cove, where the island residents share borders with the Town of Tiburon. Smaller, distinct neighborhoods are associated with streets and blocks, such as San Rafael Avenue and West Shore Road. To a lesser extent, other noise-sensitive land uses located within the City of Belvedere include places of worship and community parks (Ambient, 2010).

Ambient Noise Environment

Short-term (10-minute) noise level measurements were conducted on November 2, 2009, and January 29, 2009, for the purpose of documenting and measuring the existing noise environment at various locations throughout the city. Ambient noise measurement locations and corresponding measured values (i.e., L_{eq} and L_{max}) are summarized in **Table 14**, which also presents calculated average-daily noise levels (in CNEL/L_{dn}) at measured locations. Noise measurement locations are depicted in **Figure 8**.

TABLE 14
SUMMARY OF MEASURED AMBIENT NOISE LEVELS

Location[1]		Monitoring Period	Primary Noise Sources	Noise Levels (dBA)		
				L_{eq}	L_{max}	CNEL/L_{dn}[2]
1	San Rafael Avenue at Edgewater Road, 25 Feet from Roadway Centerline	10:25–10:45	Vehicle Traffic	61.1	77.3	60.6
		22:00–22:10		49.8	66.3	
2	San Rafael Avenue at Leeward Road, 25 Feet from Roadway Centerline	11:10–11:20	Vehicle Traffic, Construction Noise	56.5	73.1	56.3
		22:25–22:35		45.9	60.7	
3	Community Road at Belvedere Park, 25 Feet from Roadway Centerline	11:30–11:40	Vehicle Traffic	50.0	64.0	52.4
		22:45–22:55		44.7	61.4	
4	270 Beach Road, Property Line	11:55–12:05	Vehicle Traffic	50.2	64.8	49.9
		23:10–23:20		39.2	49.2	
5	Belvedere Avenue at Belvedere Way, 15 Feet from Roadway Centerline	12:15–12:25	Vehicle Traffic	48.7	62.8	49.1
		23:40–23:50		39.7	51.0	
6	Belle Vista Avenue at Toyon Avenue, Property Line	12:40–12:50	Vehicle Traffic	51.1	70.2	50.4
		00:10–00:20		38.7	46.2	
7	Beach Road at Peninsula Road, 35 Feet from Roadway Centerline	09:45–09:55	Vehicle Traffic	56.7	69.2	56.4
		00:35–00:45	Vehicle Traffic	45.7	64.4	
		13:05–13:15	Dredging[3]	60.5	68.6	NC
8	Beach Road North of Main Street, 25 Feet from Roadway Centerline	13:30–13:40	Vehicle Traffic	62.5	78.1	62.6
		00:50–01:00		52.8	66.2	
9	Tiburon Linear Park, 90 Feet from Centerline of Tiburon Boulevard	13:55–14:05	Vehicle Traffic	55.7	71.4	55.1
		01:15–01:25		43.7	53.9	
10	Bayview Avenue at Golden Gate Avenue, Property Line	14:25–14:35	Vehicle Traffic	48.9	66.3	49.0
		01:55–02:05		39.2	47.4	

Noise measurements were conducted on November 2, 2009, using a Larson Davis Model 820 Type I sound level meter.

1. Measurement locations correspond to those depicted in Figure 8.

2. CNEL calculated based on measured daytime and nighttime noise levels.
3. Dredging at private yacht club, 1 barge-mounted excavator at approximately 215 yards.
NC=Not Calculated
Source: Ambient, 2010

Noise Sources

Major noise sources in the City of Belvedere consist of both non-transportation (i.e., stationary) and transportation sources. Noise issues associated with major noise sources are discussed in more detail below.

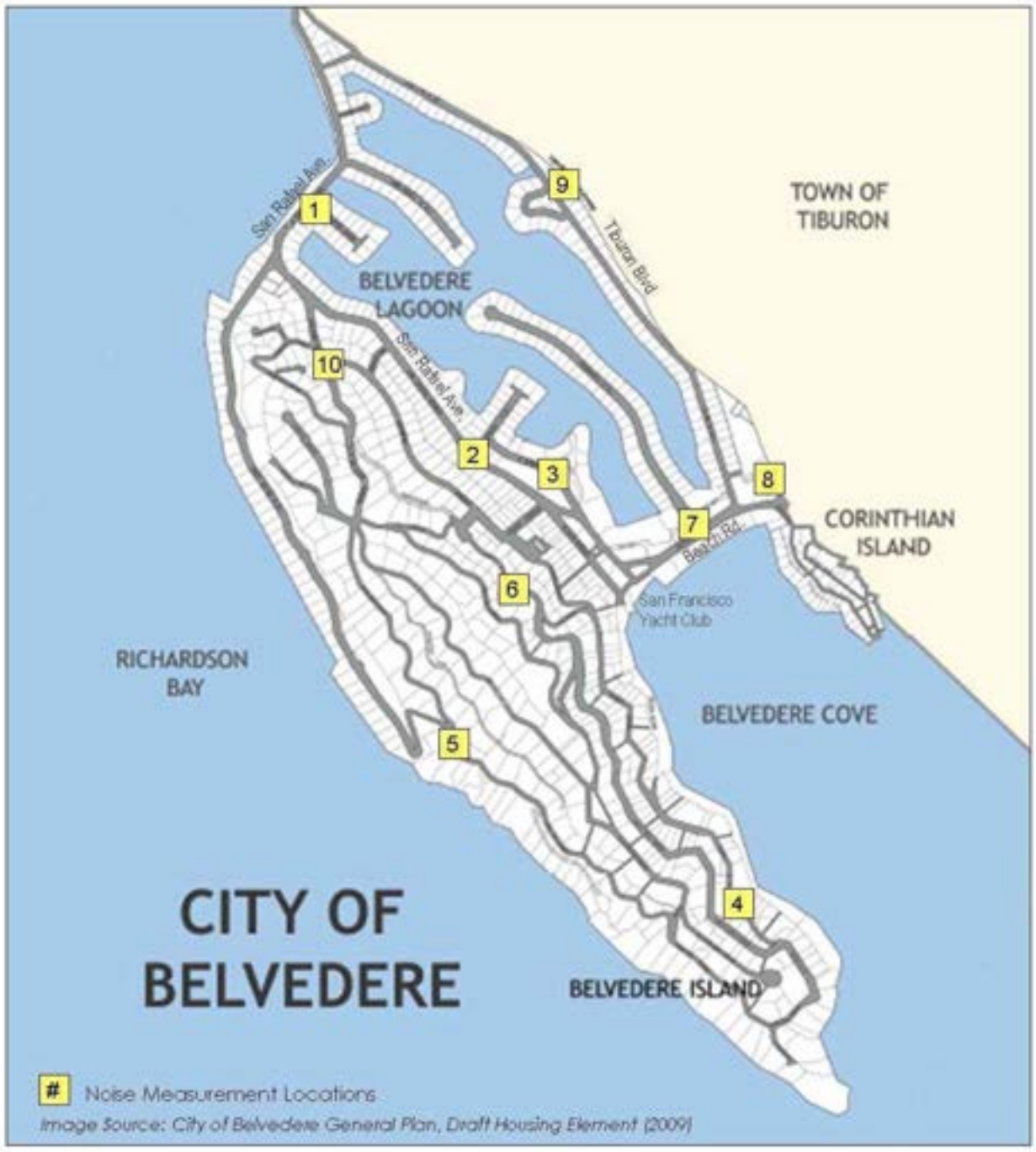
STATIONARY SOURCES

From a land-use planning perspective, stationary-source noise control issues focus on two goals: (1) preventing the introduction of new noise-producing uses in noise-sensitive areas, and (2) preventing encroachment of noise-sensitive uses upon existing noise-producing facilities. The first goal can be achieved by applying noise performance standards to proposed new noise producing uses. The second goal can be met by requiring that new noise-sensitive uses near noise-producing facilities include mitigation measures to ensure compliance with noise performance standards. Each of these goals stresses the importance of avoiding the location of new uses that may be incompatible with adjoining uses.

In the City of Belvedere, non-transportation noise sources are predominantly associated with activities conducted at the one of the two major yacht clubs and construction activities. Exterior noise levels that affect neighboring parcels are typically subject to local noise ordinance standards. Commercial, recreational, and public facility activities can also produce noise that may affect noise-sensitive land uses. These noise sources can be continuous or intermittent and may contain tonal components that are annoying to individuals who live nearby. For instance, emergency-use sirens and backup alarms are often considered nuisance noise sources, but may not occur frequently enough to be considered incompatible with noise-sensitive land uses. Noise generated by stationary sources are often directional and can vary depending on various factors, including site conditions, distance from source, shielding provided by intervening terrain and structures, and ground attenuation rates. Noise levels associated with SFYC events and activities, as well as, short-term construction activities, are discussed below.

SPECIAL EVENTS

Special events, such as weddings, private parties, receptions, banquets, and business retreats, may result in detectable increases in ambient noise levels. Noise levels generated by such sources are primarily a function of the type of event being conducted and can vary substantially depending on the use. The use of public address systems, which are occasionally associated with such events, are of particular concern given the potential to result in detectable increases in ambient noise levels at nearby land uses. Noise levels produced by public address systems are typically intermittent and can vary depending on various factors, including voice level, volume setting, amplifier power, shielding, wind direction and other atmospheric effects. Given the low noise attenuation potential for water and surrounding hillsides, noise produced by events conducted near the waterfront, have the potential to result in detectable increases in ambient noise levels at nearby residential land uses. The City of Belvedere noise control ordinance currently regulates noise associated with special events, including the use of public address systems (Ambient, 2010).



Source: PMC 2010

Not to Scale

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Figure 8
Noise Measurement Locations

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DREDGING

Harbor and slip dredging is also conducted on an occasional basis at various locations including within one of the yacht clubs and private slips. Dredging within the private yacht clubs typically occurs every eight to ten years, depending on the rate of silt deposition (Ambient, 2010). Dredging of private slips would be anticipated to occur on a similar basis. To clear the channel, dredging typically involves the use of one or two barge-mounted excavators (Ambient, 2010). Dredging was most recently conducted in 2009, at the time this report was prepared. Based on noise surveys conducted, the operation of a dredge barge operating within the harbor of one of the two major yacht clubs in the city produced noise levels of 60 to 61 dBA L_{eq} at approximately 215 yards.

CONSTRUCTION ACTIVITIES

Construction noise typically occurs intermittently and varies depending upon the nature or phase (e.g., demolition/land clearing, grading and excavation, erection) of construction. Noise generated by construction equipment, including earth movers, material handlers, and portable generators, can reach high levels. The U.S. Environmental Protection Agency (USEPA) has found that the noisiest equipment types operating at construction sites typically range from 88 dBA to 91 dBA L_{eq} at 50 feet. Typical operating cycles may involve 2 minutes of full power, followed by 3 or 4 minutes at lower settings. Although noise ranges were found to be similar for all construction phases, the building construction phase tended to be less noisy (i.e., 79 dBA to 88 dBA L_{eq} at 50 feet), when compared to the initial site preparation and grading phases (Ambient, 2010). The City of Belvedere Noise Control Ordinance currently regulates noise associated with construction activities.

TRANSPORTATION SOURCES

As noted earlier in this report, ambient noise levels in many portions of the City of Belvedere are defined primarily by traffic on area roadways. Roadway traffic noise levels are a function of multiple factors, including the number and type of vehicles, vehicle speeds, and roadway characteristics. Major roadways contributing to the ambient noise environment include Tiburon Boulevard, San Rafael Avenue, and Beach Road. Based on the noise surveys conducted, traffic noise levels along area roadways generally range from the upper 40s to the mid 60s (in dBA CNEL) at approximately 25 feet from the roadway centerlines. There are no nearby public or private airports or railroads that contribute substantially to the ambient noise environment.

RESIDENTIAL SOURCES

Residential land uses are not major sources of noise.

REGULATORY FRAMEWORK

Federal, state, and local governments have established noise standards and guidelines to protect citizens from potential hearing damage and various other adverse physiological and social effects associated with noise. Those regulations most applicable to the community are summarized as follows:

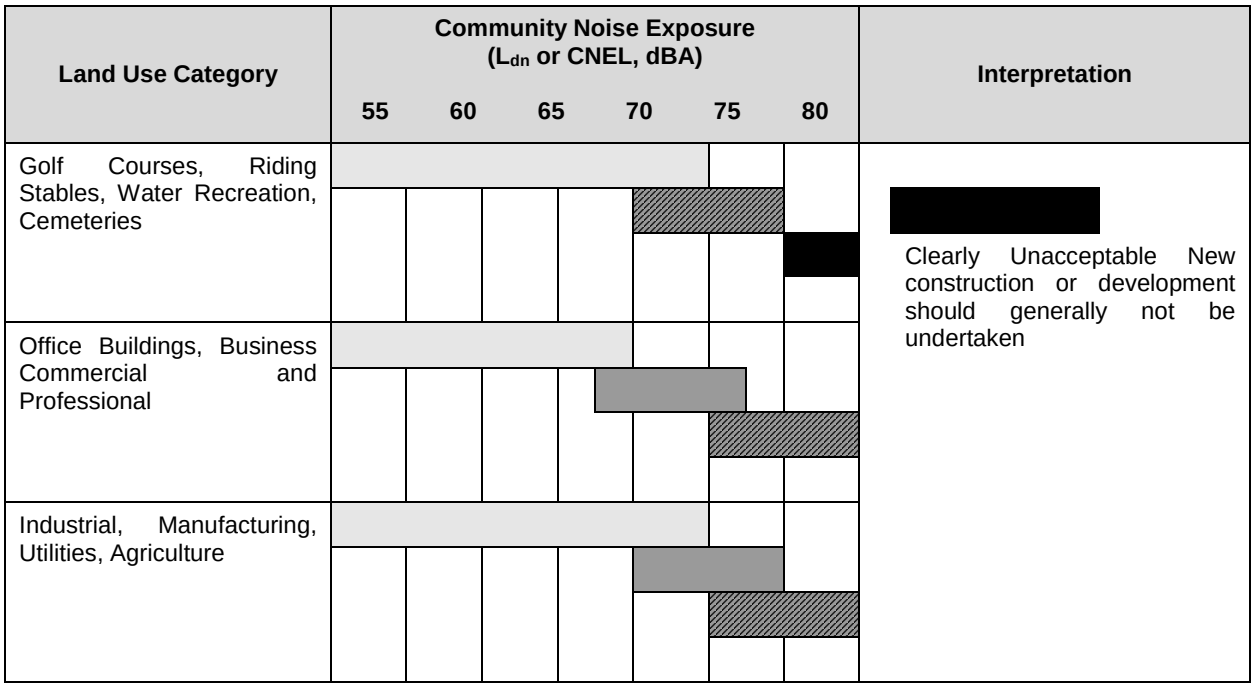
- **Federal Laws and Regulations** – U.S. Environmental Protection Agency (USEPA), U.S. Department of Housing and Urban Development (HUD)

- **State Laws and Regulations** – California Building Code, Title 24 of the California Code of Regulations, State of California General Plan Guidelines (the State-recommended noise criteria for land use compatibility are summarized in **Table 15**)

- **Local Laws, Regulations, and Policies** – City of Belvedere Municipal Code

TABLE 15
STATE OF CALIFORNIA LAND USE COMPATIBILITY NOISE CRITERIA

Land Use Category	Community Noise Exposure (L_{dn} or CNEL, dBA) 55 60 65 70 75 80	Interpretation
Residential – Low-Density Single-Family, Duplex, Mobile Homes		Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
Residential – Multiple-Family		
Transient Lodging – Motels, Hotels		Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of noise reduction requirements and needed noise insulation features included in the design. Conventional construction with closed windows and fresh air supply systems or air conditioning will normally suffice.
Schools, Libraries, Churches, Hospitals, Nursing Homes		
Auditoriums, Concert Halls, Amphitheaters		
Sports Arena, Outdoor Spectator Sports		Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
Playgrounds, Neighborhood Parks		



Source: Ambient, 2010

PROJECT IMPACTS AND MITIGATION MEASURES

a) less than significant

Construction noise typically occurs intermittently and varies depending upon the nature or phase (e.g., demolition/land clearing, grading and excavation, erection) of construction. Noise generated by construction equipment, including earth movers, material handlers, and portable generators, can reach high levels. Temporary increases in ambient noise levels, particularly during the nighttime hours, could result in increased levels of annoyance and potential sleep disruption. Although noise ranges were found to be similar for all construction phases, the grading phase tends to involve the most equipment and resulted in slightly higher average-hourly noise levels. Typical noise levels for individual pieces of construction equipment and distances to predicted noise contours are summarized in **Table 16**. As depicted, individual equipment noise levels typically range from approximately 74 to 88 dBA L_{eq} at 50 feet. Typical operating cycles may involve 2 minutes of full power, followed by 3 or 4 minutes at lower settings. Intermittent noise levels can range from approximately 77 to 95 dBA L_{max}, the loudest of which include the use of pile drivers and impact devices (e.g., hoe rams, impact hammers).

Assuming a construction noise level of 88 dBA L_{eq} and an average attenuation rate of 6 dBA per doubling of distance from the source, construction activities located within approximately 1,330 feet of noise-sensitive receptors could reach levels of approximately 60 dBA L_{eq}. Depending on distances from nearby noise-sensitive land uses and the specific construction activities conducted, construction activities may result in temporary and periodic increases in ambient noise levels at nearby receptors. Of particular concern are activities that occur during the evening and nighttime hours. Construction activities that occur during these more noise-sensitive hours may result in increased levels of annoyance and potential sleep disruption to occupants of nearby noise-sensitive land uses (e.g., residential dwellings, schools). As a result, because such increases could result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project and could result in exposure of persons to or generation

of noise levels in excess of standards established in the General Plan or Noise Control Ordinance or of applicable standards of other agencies or neighboring jurisdictions.

TABLE 16
TYPICAL CONSTRUCTION EQUIPMENT NOISE

Equipment	Typical Noise Level (dBA) 50 feet from Source		Distance to Noise Contours (feet, dBA L_{eq})		
	L_{max}	L_{eq}	70 dBA	65 dBA	60 dBA
Air Compressor	80	76	105	187	334
Auger/Rock Drill	85	78	133	236	420
Backhoe/Front End Loader	80	76	105	187	334
Blasting	94	74	83	149	265
Boring Hydraulic Jack/Power Unit	80	77	118	210	374
Compactor (Ground)	80	73	74	133	236
Concrete Batch Plant	83	75	94	167	297
Concrete Mixer Truck	85	81	187	334	594
Concrete Mixer (Vibratory)	80	73	74	133	236
Concrete Pump Truck	82	75	94	167	297
Concrete Saw	90	83	236	420	748
Crane	85	77	118	210	374
Dozer/Grader/Excavator/Scraper	85	81	187	334	594
Drill Rig Truck	84	77	118	210	374
Generator	82	79	149	265	472
Gradall	85	81	187	334	594
Hydraulic Break Ram	90	80	167	297	529
Jack Hammer	85	78	133	236	420
Impact Hammer/Hoe Ram (Mounted)	90	83	236	420	748
Pavement Scarifier/Roller	85	78	133	236	420
Paver	85	82	210	374	667
Pile Driver (Impact/Vibratory)	95	88	420	748	1,330

Equipment	Typical Noise Level (dBA) 50 feet from Source		Distance to Noise Contours (feet, dBA L_{eq})		
	L_{max}	L_{eq}	70 dBA	65 dBA	60 dBA
Pneumatic Tools	85	82	210	374	667
Pumps	77	74	83	149	265
Truck (Dump/Flat Bed)	84	80	167	297	529

Source: Ambient, 2010

Due to the short-term nature of construction noise, the intermittent frequency of construction noise, and the required compliance with the City's General Plan policies and actions (Policy N-3; Action N-3.2; Action N-4.1; Action N-4.4), which would impose restrictions on the hours of construction, construction noise level increases would not result in a substantial temporary or periodic increase in ambient noise levels above current levels and will not result in exposure of persons to or generation of noise levels in excess of standards established in the City's General Plan or Noise Control Ordinance or of applicable standards of other agencies. The impact of new construction noise is reduced to **less than significant**.

Mitigation Measures

None required.

b) less than significant

The effects of ground vibration can vary from no perceptible effects at the lowest levels, low rumbling sounds and detectable vibrations at moderate levels, and slight damage to nearby structures at the highest levels. At the highest levels of vibration, damage to structures is primarily architectural (e.g., loosening and cracking of plaster or stucco coatings) and rarely results in structural damage. The effects of ground vibration are influenced by the duration of the vibration and the distance from the vibration source.

There are no federal, state, or local regulatory standards for vibration. However, various criteria have been established to assist in the evaluation of vibration impacts. For instance, the California Department of Transportation (Caltrans) has developed vibration criteria based on human perception and structural damage risks. For most structures, Caltrans considers a peak-particle velocity (ppv) threshold of 0.2 inches per second (in/sec) to be the level at which architectural damage (i.e., minor cracking of plaster walls and ceilings) to normal structures may occur. Below 0.10 in/sec there is "virtually no risk of 'architectural' damage to normal buildings." Damage to historic or ancient buildings could occur at levels of 0.08 in/sec ppv. In terms of human annoyance, continuous vibrations in excess of 0.1 in/sec ppv are identified by Caltrans as the minimum level perceptible level for ground vibration. Short periods of ground vibration in excess of 0.2 in/sec ppv can be expected to result in increased levels of annoyance to people within buildings (Ambient, 2010).

Groundborne vibration sources located in the city that could potentially affect future development would be primarily associated with construction activities. With the exception of pavement breaking and pile driving, construction activities and related equipment typically generate groundborne vibration levels of less than 0.2 in/sec, which is the architectural damage

risk threshold recommended by Caltrans. Based on Caltrans measurement data, use of off-road tractors, dozers, earthmovers, and haul trucks generates groundborne vibration levels of less than 0.10 in/sec, or one half of the architectural damage risk level, at 10 feet. The highest vibration level associated with a pavement breaker was 2.88 in/sec at 10 feet. During pile driving, vibration levels near the source depend mainly on the soil's penetration resistance as well as the type of pile driver used. Impact pile drivers tend to generate higher vibration levels than vibratory or drilled piles. Groundborne vibration levels of pile drivers can range from approximately 0.17 to 1.5 in/sec ppv. Caltrans indicates that the distance to the 0.2 in/sec ppv criterion for pile driving activities would occur at a distance of approximately 50 feet. However, as with construction-generated noise levels, pile driving can result in a high potential for human annoyance from vibrations, and pile-driving activities are typically considered as potentially significant if these activities are performed within 200 feet of occupied structures (Ambient, 2010).

Due to the short-term nature of construction vibrations, the intermittent frequency of construction vibrations, and the required compliance with the City's hourly restrictions related to construction activities, construction vibration level increases will not result in exposure of persons to or generation of excessive groundborne vibration. By restricting the hours of construction to avoid vibrations during times when it could potentially be more of a nuisance, the impact of new construction vibration is reduced to **less than significant** through the application of the proposed General Plan Update's mitigating policies and associated actions: Policy N-3; Action N-3.2; Action N-4.1; Action N-4.4. In addition, individual development projects will be subject to site-specific environmental review, which will necessitate identification of site-specific mitigation in the event that significant impacts are identified.

Mitigation Measures

None required.

c) less than significant

Major noise sources in the General Plan Planning Area consist predominantly of vehicle traffic on area roadways. Major roadway segments in the city include Tiburon Boulevard, San Rafael Avenue, and Beach Road. Traffic noise levels along major area roadways were estimated using the FHWA Highway Traffic Noise Prediction model (FHWA-RD-77-108) for existing and future cumulative (year 2020) conditions. Predicted existing and future cumulative traffic noise levels and distances to projected noise contours are summarized in **Tables 17** and **18**, respectively. It is important to note that predicted noise contours are approximate and do not take into account shielding or reflection of noise due to intervening terrain or structures. As a result, predicted noise contours should be considered to represent bands of similar noise exposure along roadway segments, rather than absolute lines of demarcation. Although these predicted noise contours are not considered site-specific, they are useful for determining potential land use conflicts. Predicted increases in future cumulative traffic noise levels, in comparison to existing traffic noise levels, are summarized in **Table 19**.

Under future cumulative conditions with buildout of the General Plan Update and in comparison to existing conditions, the proposed General Plan Update would contribute to increased traffic noise levels of approximately 2.7 dBA, or less. The proposed General Plan Update would not result in noticeable increases (i.e., 3.0 dBA or greater) in traffic noise levels along area roadways. The proposed General Plan Update would not contribute to a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. Predicted future cumulative traffic noise levels for Tiburon Boulevard are depicted in **Figure 9**.

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Source: PMC 2010

Not to Scale

N

Figure 9

Future Cumulative Traffic Contours - Tiburon Blvd

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As discussed earlier in this report, noise-sensitive land uses are generally considered to be "normally acceptable" within exterior noise environments up to 60 dBA CNEL/L_{dn} and "conditionally acceptable" up to 70 dBA CNEL/L_{dn}. As noted in **Table 18** and with the exception of Tiburon Boulevard, the predicted 60 dBA CNEL/L_{dn} noise contours for area roadways would not extend beyond local roadway rights-of-way. The predicted 60 dBA CNEL/L_{dn} noise contour of Tiburon Boulevard would range from a distance of approximately 180 feet from the roadway centerline, west of San Rafael Boulevard, to approximately 76 feet from the roadway centerline, east of Beach Road. The projected 70 dBA CNEL/L_{dn} noise contour for major roadways is not predicted to extend beyond the roadway right-of-way. Development of noise-sensitive land uses could, however, potentially occur within the projected "normally acceptable" noise contours of major roadways (i.e., 60 dBA CNEL/L_{dn}), particularly along Tiburon Boulevard. For this reason, implementation of the General Plan Update could result in exposure of persons to or generation of noise levels in excess of standards established in the City's General Plan or Noise Control Ordinance or of applicable standards of other agencies as a result of increased traffic noise levels. As a result, exposure to vehicular traffic noise on area roadways could be significant.

TABLE 17
TRAFFIC NOISE LEVELS – EXISTING CONDITIONS

Roadway Segment	ADT	CNEL/L_{dn} at 50 Feet from Near Travel-lane Centerline	Distance (feet) from Roadway Centerline to CNEL/L_{dn} Contour		
			70	65	60
Tiburon Blvd., west of San Rafael Ave.	16,750	66.43	--	70	150
Tiburon Blvd., San Rafael Ave. to Mar West Ave.	13,650	65.54	--	61	131
Tiburon Blvd., Mar West Ave. to Beach Road	10,470	61.71	--	--	87
Tiburon Blvd., east of Beach Road	5,850	59.18	--	--	61
Mar West Ave., north of Tiburon Blvd.	1,810	51.72	--	--	--
San Rafael Ave., south of Tiburon Blvd.	3,600	54.71	--	--	--
Beach Road, Tiburon Blvd. to Main Street	4,900	56.05	--	--	--
Beach Road, south of Main Street	3,100	54.06	--	--	--

Notes: Traffic noise levels were estimated using the FHWA Highway Traffic Noise Prediction model (FHWA-RD-77-108). Traffic volumes were derived from the traffic analysis prepared for this project and assume that p.m. peak-hour volumes constitute approximately 10 percent of average-daily volumes. Roadway data and vehicle distribution percentages were based on traffic data obtained during the site reconnaissance conducted for this project, as well as heavy-duty truck distribution percentages obtained from the California Department of Transportation (Caltrans).

Source: AMBIENT 2010

TABLE 18
PREDICTED TRAFFIC NOISE LEVELS – FUTURE GENERAL PLAN BUILDOUT (YEAR 2020) CONDITIONS

Roadway Segment	ADT	CNEL/L_{dn} at 50 Feet from Near Travel-lane Centerline	Distance (feet) from Roadway Centerline to CNEL/L_{dn} Contour		
			70	65	60
Tiburon Blvd., west of San Rafael Ave.	22,080	67.63	--	84	180
Tiburon Blvd., San Rafael Ave. to Mar West Ave.	18,720	66.92	--	75	161
Tiburon Blvd., Mar West Ave. to Beach Road	13,760	62.90	--	--	104
Tiburon Blvd., east of Beach Road	8,360	60.73	--	--	76
Mar West Ave., north of Tiburon Blvd.	3,400	54.46	--	--	--
San Rafael Ave., south of Tiburon Blvd.	3,860	55.01	--	--	--
Beach Road, Tiburon Blvd. to Main Street	5,180	56.29	--	--	--
Beach Road, south of Main Street	3,830	54.98	--	--	--

Notes: Traffic noise levels were estimated using the FHWA Highway Traffic Noise Prediction model (FHWA-RD-77-108) Traffic volumes were derived from the traffic analysis prepared for this project and assume that p.m. peak-hour volumes constitute approximately 10 percent of average-daily volumes. Roadway data and vehicle distribution percentages were based on traffic data obtained during the site reconnaissance conducted for this project, as well as heavy-duty truck distribution percentages obtained from the California Department of Transportation (Caltrans).

Source: AMBIENT 2010

TABLE 19
PREDICTED CHANGES IN TRAFFIC NOISE LEVELS
FUTURE GENERAL PLAN BUILDOUT (YEAR 2020) CONDITIONS AS COMPARED TO EXISTING CONDITIONS

Roadway Segment	CNEL/L_{dn} at 50 Feet from Near Travel-lane Centerline		Predicted Change in Noise Levels (CNEL/L_{dn})
	Existing	Future Cumulative (Year 2020)	
Tiburon Blvd., west of San Rafael Ave.	66.43	67.63	1.20
Tiburon Blvd., San Rafael Ave. to Mar West Ave.	65.54	66.92	1.38
Tiburon Blvd., Mar West Ave. to Beach Road	61.71	62.90	1.19
Tiburon Blvd., east of Beach Road	59.18	60.73	1.55
Mar West Ave., north of Tiburon Blvd.	51.72	54.46	2.74
San Rafael Ave., south of Tiburon Blvd.	54.71	55.01	0.30
Beach Road, Tiburon Blvd. to Main Street	56.05	56.29	0.24
Beach Road, south of Main Street	54.06	54.98	0.92

Notes: Traffic noise levels were estimated using the FHWA Highway Traffic Noise Prediction model (FHWA-RD-77-108) Traffic volumes were derived from the traffic analysis prepared for this project and assume that p.m. peak-hour volumes constitute approximately 10 percent of average-daily volumes. Roadway data and vehicle distribution percentages were based on traffic data obtained during the site reconnaissance conducted for this project, as well as heavy-duty truck distribution percentages obtained from the California Department of Transportation (Caltrans).

Source: AMBIENT 2010

Implementation of the proposed General Plan Update Policy N-1, Action N-1.1, Policy N-2, Action N-2.1, and Action N-2.2 would reduce potential transportation noise impacts. Future development projects would be required to analyze project-related noise impacts and incorporate necessary noise-reduction measures sufficient to achieve the applicable noise standards of the City's General Plan Noise Element. Implementation of these policies and actions will help to reduce impacts associated with proposed development. Noise-reduction measures typically implemented to reduce traffic noise include increased insulation, setbacks, and construction of sound barriers. With implementation of the proposed General Plan Update policies, this impact would be considered **less than significant.**

Mitigation Measures

None required.

d) less than significant with mitigation incorporated

Implementation of the proposed General Plan Update could result in the future development of land uses that generate noise levels in excess of applicable city noise standards. Such land uses may include commercial, industrial, institutional (public schools), and recreational. In addition, new noise-sensitive land uses could be located in areas of existing stationary noise sources. Exposure of noise-sensitive land uses to non-transportation noise levels could result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project and could result in exposure of persons to or generation of noise levels in excess of standards established in the City's General Plan or Noise Control Ordinance or of applicable standards of other agencies.

Implementation of the following General Plan Update policies and action items would reduce noise associated with new stationary noise sources and the placement of new noise-sensitive land uses over which the City has jurisdiction (e.g., commercial and industrial sites, residential uses): Policy N-1; Action N-1.1; Policy N-3; Action N-3.1; Policy N-4; Action N-4.1; Action N-4.2, Action N-4.3; Action N-4.4; Action N-4.5; Action N-4.6. However, some existing stationary-source noise impacts cannot be mitigated to a less than significant level due to a lack of quantitative noise standards within the City's existing Municipal Code. Of particular concern would be existing sources located in proximity to noise-sensitive land uses (e.g., residential), such as activities conducted at commercial uses located near the harbor. To reduce stationary-source noise impacts associated with existing uses to a less than significant level, the following mitigation measure is required.

Mitigation Measures

Add the following General Plan policy:

MM N1 The City shall adopt and apply quantitative noise standards for stationary noise sources, to be incorporated into the City of Belvedere Municipal Code (Title 8, Health & Safety, Chapter 8.10, Noise) for the resolution of noise complaints associated with existing sources.

Implementation of the proposed General Plan policies and actions as well as mitigation measure MM N1 would reduce noise associated with new stationary noise sources and the placement of new noise-sensitive land uses over which the City has jurisdiction to a level that is **less than significant**.

e–f) no impact

The proposed project is not located near any airports, private airstrips, or within an airport land use plan. Existing city residents are not exposed to excessive noise levels from airports. Therefore **no impact** would occur.

Mitigation Measures

None required.

	Potentially Significant Impact	Less Than Significant with the Incorporated Mitigation	Less Than Significant Impact	No Impact
13. POPULATION AND HOUSING. Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

EXISTING SETTING

REGIONAL SETTING

Regionally, the population of Marin County continues to grow, yet the rate of growth is slowing. In 2008, the population was 252,413 countywide, up from the year 2000 number of 247,289 (City of Belvedere, 2009a and 2009b). It is projected that the growth rate will fall over the next decade and continue to do so until 2025.

Table 20 displays housing production in Belvedere compared to neighboring cities and Marin County as a whole. During the 19 years between 1990 and 2009, Belvedere's housing stock grew very slightly (2 percent). This growth is well below the 9 percent housing growth experienced countywide. While housing growth in neighboring Tiburon (15 percent) was well above that in Marin County, Sausalito and Mill Valley experienced growth levels lower than the county and closer to the rate of Belvedere.

TABLE 20
REGIONAL HOUSING GROWTH TRENDS (1990 TO 2009)

Jurisdiction	Number of Housing Units			Change 1990–2009	Percentage Change
	1990[1]	2000[1]	2009[2]		
Belvedere	1,037	2,000	1,060	23	2.2%
Tiburon	3,433	3,893	3,960	527	15%
Sausalito	4,378	4,500	4,570	192	4.3%
Mill Valley	6,139	6,286	6,383	244	3.9%
Corte Madera	3,717	3,850	4,062	345	9.2%
Marin County	99,757	104,990	108,673	8,916	8.9%

Source: [1] U.S. Census 1990 and 2000; [2] DOF, 2009

LOCAL SETTING – CITY OF BELVEDERE

Population

The City of Belvedere has a total area of 2.42 square miles, containing 0.54 square miles of land and 1.89 square miles of water. The City of Belvedere is the smallest incorporated city in Marin County with an estimated population of 2,158 persons in 2009 (DOF, 2009). Belvedere is primarily a residential community with just a small fraction of the land devoted to commercial uses, including offices and a handful of retail establishments.

The City of Belvedere has experienced many fluctuations in population throughout its history. **Table 21** presents population growth trends in Belvedere and illustrates the slight decrease in population experienced in Belvedere between the 1990s and 2000s due to smaller household sizes.

Demographic Trends

In terms of future trends, the population is expected to stay steady due to the built-out characteristic of the community and the limited amount of new residential development that is possible. The Association of Bay Area Governments (ABAG), which is the official comprehensive planning agency for the San Francisco Bay region, projects very limited growth in Belvedere though the year 2035. ABAG serves as the regional Census Data Center and publishes its own forecasts. ABAG's population projections provide long-term forecasts through a series of computer models that have been widely recognized in academic literature. Model results are relied on by transportation and air quality agencies, local government, and private industry.

TABLE 21
HISTORIC POPULATION GROWTH

Year	Population	Numerical Change	Percentage Change	Average Annual Growth Rate
1990	2,147	--	--	--
2000	2,125	-22	-1%	-0.1%
2005	2,100	-25	-1%	-0.2%
2010	2,150	50	2%	0.5%

Source: City of Belvedere, 2009a and 2009b

According to ABAG projections, the city population will increase very slightly through 2015 by 50 persons, and then will level off, with an expected 0 percent growth rate in the years 2020 through 2035. **Table 22** presents population growth projections in Belvedere.

TABLE 22
PROJECTED POPULATION GROWTH

Year	Population	Numerical Change	Percentage Change	Average Annual Growth Rate
2015	2,200	50	2%	0.5%
2020	2,200	0	0%	0.0%
2025	2,200	0	0%	0.0%
2030	2,200	0	0%	0.0%
2035	2,200	0	0%	0.0%

Source: City of Belvedere, 2009a and 2009b

Housing Units

Historically, there has not been much of an increase in the total number of housing units over the past decade. According to the Department of Finance, there were 1,059 housing units in the city in 2000 compared with 1,060 units in 2009.

REGULATORY FRAMEWORK

The following federal, state, and local regulations, plans, programs, and guidelines are applicable to the proposed City of Belvedere Housing Element Update and General Plan Update:

- **Federal Laws and Regulations** – Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970
- **State Laws and Regulations** – Housing Element Law – Article 10.6 of the Government Code (Sections 65580–65589.8)
- **Local Laws, Regulations, and Policies** – Regional Housing Needs Plan

PROJECT IMPACTS AND MITIGATION MEASURES

a) less than significant

The implementation of the proposed Housing Element Update and General Plan Update would increase the population and housing in the City of Belvedere over a planning horizon of 20 years. Given that Belvedere is largely built out, substantial changes in land use and development, and therefore population, are unlikely over the course of the proposed General Plan Update planning horizon. With most of the land area devoted to residential use, the majority of development will be renovation and replacement of existing homes. However, there are a small number of infill and redevelopment opportunities, primarily in the commercial and multi-family residential districts. The City's Housing Element includes policies to incentivize multiple-family housing, second dwelling units, single-room occupancy units, and supportive and transitional housing. Therefore, implementation of the proposed Belvedere Housing Element

Update and General Plan Update would not exceed ABAG regional population and growth projections. This impact is therefore considered **less than significant**.

Mitigation Measures

None required.

b–c) no impact

While implementation of the proposed Housing Element Update and General Plan Update does not directly result in the construction of any new development, the proposed General Plan Update would change land use regulations, allowing for increase density.

Section 104(d) of the Housing and Community Development Act provides minimum requirements for federally funded programs or projects. Section 104(d) requirements include the replacement, on a one-for-one basis, of all occupied and vacant occupiable low- or moderate-income housing units that are demolished or converted to a use other than low- or moderate-income housing in connection with an activity assisted under the Housing and Community Development Act. Furthermore, the California Relocation Statute is a California law that establishes minimum standards for state-funded programs and projects that displace persons from their homes, businesses, or farms. The statute's protections and assistance apply to the acquisition, rehabilitation, or demolition of real property for state-funded projects. The statute is intended for the benefit of displaced persons to ensure that such persons receive fair and equitable treatment and do not suffer disproportionate injuries as the result of programs designed for the benefit of the public as a whole.

Implementation of the proposed General Plan Update will not displace substantial numbers of housing units or people. No demolition or substantial change in land use designation that would result in the displacement of residents is proposed in the Housing Element Update and/or General Plan Update. Therefore, there would be **no impact** associated with implementation of the proposed General Plan Update or Housing Element relative to displacement of a substantial number of persons or housing.

Mitigation Measures

None required.

Issues	Potentially Significant Impact	Less Than Significant with the Incorporated Mitigation	Less Than Significant Impact	No Impact
14. PUBLIC SERVICES. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
a) Fire protection?	☐	☐	☒	☐
b) Police protection?	☐	☐	☒	☐
c) Schools?	☐	☐	☒	☐
d) Parks?*	☐	☐	☒	☐
e) Other public facilities?	☐	☐	☒	☐

** Fire hazards in the City of Belvedere are discussed under the Hazards and Hazardous Materials subsection. Parks are discussed under the Recreation subsection.*

EXISTING SETTING

LOCAL SETTING – CITY OF BELVEDERE

Fire Protection

The City of Belvedere receives its fire protection services from the Tiburon Fire Protection District (TFPD), which provides a full range of services to the community, including:

- Fire Prevention Bureau – Code enforcement, plan reviews, annual business inspections, and summer defensible space program for homeowners
- Public Education – Fire and burn prevention programs in schools, CPR, first aid, and community disaster preparedness classes
- Emergency Medical Services – Tiburon Fire District staffs one of three paramedic ambulances operated by Southern Marin Emergency Medical Paramedic System, a seven-agency joint powers authority
- Fire Protection
- Hazardous Materials Response
- Fire Investigation
- Participation in Marin County and California Mutual Aid System

TFPD is a combination department with 20 career safety employees, one clerical and one finance officer, 18 volunteer firefighters, and six trainee firefighters.

Construction of a 13,000 square foot headquarters fire station was completed on Tiburon Avenue in the Town of Tiburon in January 1994. The headquarters, Station 11, is staffed on a 24-hour basis by the battalion chief, driver-operator, and two firefighters. The 18-member Tiburon Volunteer Fire Department is available by alphanumeric pagers for station cover and fire response. This augmentation to the department workforce is especially valuable during natural disasters involving earthquakes, floods, mud slides, and other storm damage which may block mutual aid access to the Tiburon Peninsula.

In January 2005, the TFPD took delivery of a 2005 Pierce Dash 2000 type-I fire engine. The custom engine has a 156-inch wheel base to maximize access through the narrow residential streets of Tiburon and Belvedere. Additional equipment housed in the headquarters fire station includes:

- 2005 Pierce Dash 2000 type-I engine
- 1989 Pierce Dash type-I – reserve
- 2005 Pierce Hawk type-3 wildland fire engine
- 2004 Ford F-350 utility vehicle
- 2000 Ford Expedition command vehicle
- 2005 Chevy Tahoe chief's car
- USAR medium heavy rescue trailer
- 2004 Ford Explorer prevention vehicle

A substation is maintained in the unincorporated area of the TFPD at the corner of Trestle Glen and Paradise Drive. A captain and paramedic firefighter cross-staff the paramedic ambulance and a 1999 Pierce type-I fire engine. The station was built in 1960 with two bays housing an engine and water tender for use of the volunteer firefighters. Living quarters and a small office were added in 1962 to accommodate career firefighters assigned to the station. The 3,200 square foot building underwent renovation and seismic upgrading in 1999 (TFPD, 2010).

The TFPD has an adopted goal of responding to 90 percent of calls within 5 minutes. This goal is currently being met (E. Lynch, 2010).

Police Protection

Law enforcement services in the City of Belvedere are provided by the City of Belvedere Police Department (BPD). The BPD, which provides patrol service 24 hours a day, is currently staffed by one police secretary, six officers, one sergeant, and a police chief. The City of Belvedere has a low crime rate, with only 26 arrests in 2009, most of which were for minor misdemeanors (City of Belvedere, 2010a). The BPD currently has adequate staff and facilities to serve the City and does not have an adopted goal for response times (Pool, 2010). The officer-to-population ratio in Belvedere is currently one officer to every 358 residents.

SCHOOLS

Reed Union School District

The Reed Union School District (RUSD) is an elementary district serving the southern Marin communities of Belvedere, Tiburon, and a portion of east Corte Madera. Its three school sites are located in Tiburon: Reed School – kindergarten through second grade; Bel Aire School – grades 3, 4, and 5; and Del Mar Middle School – grades 6, 7, and 8. District enrollment is around 1,250 students, with class size averaging approximately 22 students. RUSD students attend high school in the Tamalpais Union High School District, as well as in private schools in Marin County and San Francisco (RUSD, 2010). Currently, none of the schools in the RUSD are at or exceeding capacity (Frick, 2010). RUSD schools share the services of a psychologist, a speech and language therapist, an information services coordinator and assistant, part-time aides for limited English-speaking students, a school nurse, and a district health specialist. Instructional aides provide assistance in the elementary classrooms at Reed and Bel Aire schools. Each school is assigned a special education resource specialist and art, music, and P.E. teachers, as well as a technology facilitator. Bel Aire and Reed schools have reading specialists to oversee intervention literacy programs and work collaboratively with the resource teachers in the learning center to provide services for all students in need. Spanish is taught in Grades 3 through 8. Parent-paid school bus transportation is available to and from all three sites (RUSD, 2010).

Tamalpais Union High School District

The Tamalpais Union High School District (TUHSD) serves the entire City of Belvedere and includes Redwood High School in Larkspur, Sir Francis Drake High School in San Anselmo, Tamalpais High School in Mill Valley, San Andreas High School in Larkspur, and Tamiscal High School in Larkspur. Currently, none of the schools in the TUHSD are at or exceeding capacity (Parrish, 2010).

OTHER PUBLIC FACILITIES

Libraries

The communities of Belvedere and Tiburon have had seven libraries since 1895. The last facility (in 1966) was in the Boardwalk Shopping Center. Over time the small, underfunded, and underequipped county library became inadequate for the community. The land where the current community library sits at 1501 Tiburon Boulevard was donated by the Zelinsky family. The money was raised, a bond measure passed, and construction began in 1996. The Belvedere-Tiburon Library opened in April of 1997 and in 2007 had over 63,000 items in its collection.

The Belvedere-Tiburon Library Agency (BTLA) was formed in July 1995 as the legal governing body of the new independent community library. Its seven-person board has three trustees appointed by the City of Belvedere, three appointed by the Town of Tiburon, and one by the Reed Union School District. The BTLA is charged with all the responsibilities of personnel, collection of tax moneys, budget development, operation and expenditure of money for the library's development, operation and maintenance.

REGULATORY FRAMEWORK

The following state and local regulations, plans, programs, and guidelines are applicable to the proposed City of Belvedere Housing Element Update and General Plan Update:

- **Federal Laws and Regulations** – There are no applicable federal regulations or programs for the General Plan Planning Area.

- **State Laws and Regulations** – Kindergarten-University Public Education Facilities Bond Act of 2002 (Prop. 47), California Department of Education

- **Local Laws, Regulations, and Policies** – Leroy F. Greene School Facilities Act

PROJECT IMPACTS AND MITIGATION MEASURES

a) less than significant

Given that the City of Belvedere is largely built out, the proposed Housing Element Update and General Plan Update would not result in substantial amounts of new development in the city. A small number of infill and redevelopment opportunities, primarily in the commercial and multi-family residential districts, are expected to result in a maximum population increase of only 50 persons by 2030. The increase in population would cause an increase in demand for fire protection services provided by the TFPD. However, the minimal amount of growth anticipated in the city would not result in the need for additional fire stations, equipment, or personnel (E. Lynch, 2010). Furthermore, the TFPD is currently meeting its adopted goal of responding to 90 percent of calls within 5 minutes, and future development resulting from the proposed Housing Element Update and General Plan Update would not be expected to impact those response times (E. Lynch, 2010). Therefore, impacts associated with increased demand for fire protection services would be considered **less than significant**.

Mitigation Measures

None required.

b) less than significant

Given that the City of Belvedere is largely built out, the proposed Housing Element Update and General Plan Update would not result in substantial amounts of new development or major changes in land uses in the city. A small number of infill and redevelopment opportunities, primarily in the commercial and multi-family residential districts, are expected to result in a maximum population increase of only 50 persons by 2030. The increase in population would slightly increase demand for law enforcement services provided by the BPD. Given the low level of development that is expected to take place in Belvedere over the course of the Housing Element Update and General Plan Update planning horizon, in combination with the low rate of crime in the city, the City of Belvedere Police Department would not be expected to require additional facilities, equipment, or personnel (Pool, 2010). In fact, the officer-to-population ratio in Belvedere is currently one of the highest in the county (Pool, 2010) at one officer to every 358 residents. This would not be expected to substantially change as a result of the addition of 50 persons in the city. Therefore, impacts associated with the provision of additional law enforcement services are considered **less than significant**.

Mitigation Measures

None required.

c) less than significant

The City of Belvedere is served by the Reed Union School District and Tamalpais Union High School District. Implementation of the proposed Housing Element Update and General Plan Update would involve redevelopment/infill development within the city, which could result in a

maximum population increase of approximately 50 persons. This increase could potentially generate up to 12 students to the RUSD and TUHSD (17 housing units x 0.7 students per household), based on student generation rates contained in the California State Allocation Board Office of Public School Construction reports, which use a student generation rate of 0.7 school-aged children per household as an assumed worst-case scenario.

This slight increase in students is not expected to create an additional need for school facilities, including new schools or expansion of existing schools, as both the RUSD and the TUHSD have capacity to accommodate additional students (Frick, 2010; Parrish, 2010). Additionally, the RUSD and the TUHSD have recently completed or are in the process of upgrading and expanding their school facilities. Also, if school districts require new school facilities in the future, all new public school facilities must undergo rigorous site-specific CEQA and California Board of Education evaluation prior to construction to identify and lessen environmental-related impacts.

In addition, Government Code Section 65995(h) states that the payment or satisfaction of a fee, charge, or other requirement levied or imposed pursuant to Section 17620 of the Education Code is deemed to be full and complete mitigation of the impacts for the planning, use, development, or provision of adequate school facilities, and Section 65996(b) states that the provisions of the Government Code provide full and complete school facilities mitigation. The RUSD requires the payment of an impact fee of $1.40 per square foot for new residential construction over 500 square feet and $0.30 per square foot for commercial development. The TUHSD does not require the payment of an impact fee. Thus, this impact would be **less than significant**.

Mitigation Measures

None required.

d) less than significant

The reader is directed to discussion of impacts under issue a–b) in Section 15 (Recreation) of this IS/MND.

e) less than significant

Given that the City of Belvedere is largely built out, the proposed Housing Element Update and General Plan Update would not result in substantial amounts of new development in the city. A small number of infill and redevelopment opportunities, primarily in the commercial and multi-family residential districts, are expected to result in a population increase of only 50 persons by 2030. The increase in population would cause a slight increase in demand for services provided by the Belvedere-Tiburon Library.

The current library is too small to meet the needs of the community. The primary constraints include an undersized children's room, lack of space for teens to study together and for resources relevant to that age group, lack of meeting rooms and quiet work areas for adults, limited spaces for programs and technology training, and inadequate space for expanding the library collection and for storage. The library is currently in the first (conceptual) planning phase of an expansion of the library to meet the needs of Belvedere and Tiburon residents for at least the next 20 years. The Town of Tiburon is preparing an EIR, which is expected to be completed by early this year. In the next design phases, the architecture, size, footprint, and aesthetics of the building will be elaborated upon. The projected timeline is to break ground on the expansion project in three to five years (Belvedere-Tiburon Library, 2009).

After the current expansion of the library is complete, adequate library facilities will be available to serve growth resulting from the proposed City of Belvedere Housing Element Update and

General Plan Update, and that growth would not necessitate the expansion of library facilities beyond the currently planned expansion. The proposed General Plan contains a policy requiring the City to support the library. Therefore, impacts associated with library facilities would be **less than significant**.

Mitigation Measures

None required.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
15. RECREATION. Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities, such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b) Include recreational facilities or require the Construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	☐	☐	☒	☐

EXISTING SETTING

REGIONAL SETTING

Recreation in Marin County is identified by a number of factors, including the presence of extensive federal, state and locally-owned open space; the wide range of size, function, and level of development that exists among county and local parks; and the effect of unique jurisdictional and topographic conditions on the level of service provided within each incorporated and unincorporated community. Notable recreation facilities in Marin County include Point Reyes National Seashore, Mt. Tamalpais State Park, Tomales Bay State Park, Stafford Lake Park, and Paradise Beach Park on the east shore of the Tiburon Peninsula.

LOCAL SETTING – CITY OF BELVEDERE

In comparison to other cities in Marin County, Belvedere has a relatively small amount of public open space such as parks. This is largely due to the development history of Belvedere, which has emphasized privacy by specifying predominantly single-family homes on relatively large lots. The city is effectively built out, so there is a limited amount of land available for additional public open space. The open spaces that do exist in Belvedere are generally highly valued by residents.

Belvedere's recreation areas include properties that contain any public or private recreational use, including any beach, park, playground, boardwalk, esplanade, open walk, path, pier, wharf, or other facilities for boats.

Belvedere's public parks consist of:

- Community Park, the 1.57-acre park next to Belvedere City Hall and Community Center
- Tom Price Park, the 1-acre park between Lagoon Road and Tiburon Boulevard
- Centennial Park, the 5,265 square foot public open space along lower Hawthorne Lane
- Oak Mini-Park, the 1,162 square foot public space at Oak Avenue and Buckeye Road

- Land Company Park, the 8,600 square foot park in the traffic island at the intersection of Beach Road and San Rafael Avenue

Recreation areas in Belvedere include Belvedere Lagoon; beaches and tide lots, including parts of Belvedere Cove; the China Cabin; Corinthian Island overlook at the southeast end of Corinthian Island; and Golden Gate Avenue cul-de-sac at the southeast end of Golden Gate Avenue.

In addition to the public park facilities and the parks associated with public schools, Belvedere is home to three other recreation facilities: two major yacht clubs and the Belvedere Lagoon. These are private facilities and require membership for access and use. Neither the City of Belvedere nor the Recreation Department has any role in influencing the recreational amenities or programs offered by these private facilities; however the City regulates the yacht clubs' activities through use permits.

Recreational programs for the Tiburon and Belvedere communities are provided by the Belvedere- Tiburon Joint Recreation Department (BTJRD), an agency that is independent of the City of Belvedere and the Town of Tiburon. The BTJRD runs programs for youths and adults, and summer camps for children between the ages of 3 and 12, and manages six tennis courts at three locations. The most popular programs are sports classes for children between the ages of 3 and 10 and cotillion classes for middle school youth. Yoga, bridge, and tennis classes are the most popular adult programs.

The BTJRD serves 4,800 participants with over 500 programs each year. The Recreation Committee was established as a joint powers agreement between Tiburon and Belvedere in 1975. It is governed by a seven-member governing committee, with three members appointed by the Town of Tiburon, three by the City of Belvedere, and one by the Reed Union School District. The purpose of establishing a separate public entity was to ensure that recreation services would be supported by participant fees rather than tax dollars (Belvedere-Tiburon Recreation District, 2010).

The BTJRD does not own any facilities and runs its programs at a variety of locations, including the Tiburon Community Room at Town Hall, the Belvedere Community Center, Bel Aire and Reed schools, and other locations. Approximately 70 percent of the programs are currently conducted at Reed School. Most of the time this arrangement is satisfactory, but occasionally scheduling conflicts require recreation planners to find alternative sites. This has been particularly challenging recently, when the school district informed the Recreation Department that fewer school facilities would be available for recreation programming in 2010. The BTJRD has essentially exhausted the existing capacity for recreation facilities on the Peninsula.

REGULATORY FRAMEWORK

The following local regulations, plans, programs, and guidelines are applicable to the proposed City of Belvedere Housing Element Update and General Plan Update:

- **Federal Laws and Regulations** – There are no applicable federal regulations or programs for the General Plan Planning Area.

- **State Laws and Regulations** – There are no applicable state regulations or programs for the General Plan Planning Area.

- **Local Law, Regulations, and Policies** – City of Belvedere Parks and Open Space Committee

PROJECT IMPACTS AND MITIGATION MEASURES

a–b) less than significant

Given that the City of Belvedere is largely built out, the proposed Housing Element Update and General Plan Update would not result in substantial amounts of new development in the city. A small number of infill and redevelopment opportunities, primarily in the commercial and multi-family residential districts, are expected to result in a population increase of 50 persons by 2030. The increase in population would cause a slight increase in the use of existing park and recreation services, but is not expected to result in the need for new or expanded park facilities. Furthermore, a limited amount of land is available for additional public open space or parks in the city. As such, the maintenance of existing parks will be required to ensure adequate park and recreation services to new development under the proposed Housing Element Update and General Plan Update.

The following proposed General Plan Update policies and action items would ensure that the City would maintain and enhance existing facilities and coordinate with the Belvedere-Tiburon Recreation District to provide locations for existing recreation programs: Policy Rec-1.3; Policy Rec-2.4; Policy Rec-3.1; Action Rec-3.1.1; Action Rec-3.1.2; Action Rec-3.1.3; Action Rec-3.1.4. In particular, Action Rec-3.1.2 would require that the City consider the construction of additional facilities in the Town of Tiburon. The exact location and timing of such facilities are currently unknown. Future park and recreation projects in the Town of Tiburon would be reviewed for compliance with CEQA at a project level at the time they are considered for approval. Environmental impacts of a specific park or recreation facility project would be analyzed in more detail, and mitigation measures identified if necessary. Therefore, park and recreation impacts associated with implementation of the proposed Housing Element Update and General Plan Update are considered to be **less than significant**.

Mitigation Measures

None required.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
16. TRANSPORTATION/TRAFFIC. Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
e) Result in inadequate emergency access?	☐	☐	☒	☐
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☒	☐

EXISTING SETTING

REGIONAL SETTING

Regional access to the Tiburon-Belvedere area is provided by U.S. Highway 101 (U.S. 101), a major north-south freeway linking Marin County with Sonoma County (north) and San Francisco (south).

LOCAL SETTING – CITY OF BELVEDERE

The entire circulation system in the City of Belvedere consists of roads, trails, and bicycle, pedestrian, bus, and ferry facilities. Belvedere is a small community that is surrounded by water on three sides and the Town of Tiburon on the fourth, and all roadway access in and out of

Belvedere is through Tiburon. Many of the roadway facilities that serve Belvedere are outside of the City's jurisdiction, as described in many of the sections below.

Automobile Circulation

The automobile circulation system in Belvedere consists of 10.5 miles of roads and represents "full development" of the city's simple road system. Most roads are two-way, and the posted speed of collector roads is a maximum speed of 25 miles per hour. Other roads have a posted maximum speed of 15 miles per hour. Roads serving Belvedere connect to the larger roadway network in the Town of Tiburon.

Belvedere has a street system that shows singular regard for topographic and environmental conditions, often at the expense of easy vehicular movement. Most of the city's streets are narrow and curving. Many of the streets also have substantial grades. Interestingly, most of Belvedere's streets were located on the steep terrain of Belvedere and Corinthian islands, leaving the more level ground for home sites. Road widening now is not only infeasible, but nearly impossible. However, the narrow, curving streets serve a public benefit by reducing the amount and speed of traffic, reducing noise and pollution, and making Belvedere a desirable place to walk, though the streets function at a minimal level for vehicular traffic. The streets provide safe access to and from homes for residents, service vehicles, and emergency vehicles as needed.

Belvedere's Roadway Network

There are two main gateways into the City of Belvedere: San Rafael Avenue at Tiburon Boulevard and Beach Road at Tiburon Boulevard. There is an additional point of entry to Belvedere at Lagoon Road.

Tiburon Boulevard provides access from U.S. Highway 101 through Tiburon and unincorporated Marin County to the Belvedere street system. Tiburon Boulevard (State Route 131) is a two- to four-lane arterial roadway that extends from its interchange with U.S. 101, east through downtown Tiburon, to Belvedere, and terminates at its connection to Paradise Drive.

Tiburon Boulevard has four through traffic lanes at its interchange with U.S. 101 which continue east as far as Trestle Glen Boulevard. East of Trestle Glen Boulevard, the roadway narrows to two through lanes with turn lanes at intersections. It has paved and unpaved shoulders varying from 0 to 5 feet wide. At its intersection with San Rafael Avenue, the westernmost gateway to Belvedere, Tiburon Boulevard has one through lane in each direction and exclusive left and right turn lanes to San Rafael Avenue. This intersection is signalized and has crosswalks on the south and east approaches, with pedestrian signal controls. Farther east, as Tiburon Boulevard nears downtown Tiburon at Mar West Street, the two-lane roadway has been improved to accommodate on-street parking and Class II bicycle lanes. The Mar West Street intersection is stop-sign-controlled on the Mar West Street approaches, and there are pedestrian crosswalks on the north, east, and south intersection approaches. On the Tiburon Boulevard approach to Beach Road, the boulevard has been widened to accommodate a central landscaped median. At its intersection with Beach Road, the easternmost gateway to Belvedere, Tiburon Boulevard has one through lane in each direction and exclusive left and right turn lanes to Beach Road. This intersection is signalized and has crosswalks and pedestrian signal controls on all approaches.

In addition to San Rafael Avenue and Beach Road, Tiburon Boulevard has signalized intersections at the U.S. 101 north- and southbound on- and off-ramps, and at Strawberry Drive, Blackfield Drive, Trestle Glen Boulevard, Avenida Miraflores, Rock Hill Drive, and Lyford Drive. Just

east of Main Street, Tiburon Boulevard narrows, the Class II bicycle lanes are discontinued, and farther east, the roadway changes name to Paradise Drive.

San Rafael Avenue is a major, two-lane road providing access to the Belvedere Lagoon neighborhood, Belvedere Island (via Golden Gate Avenue), and the City of Belvedere City Hall and community facilities. It has intermittent sidewalks on one or both sides, and a portion of the roadway is bordered by a multi-use path fronting Richardson Bay. South of Tiburon Boulevard, San Rafael Avenue has five pedestrian crosswalks, located at its intersections with Lagoon Road, Windward Road, Edgewater Road, West Shore Road, and just northwest of Laurel Avenue where there is a crosswalk serving pedestrian access to community recreational facilities. San Rafael Avenue has been recently resurfaced, and pavement paint markings are fresh and highly visible. Crosswalks consist of two white lines and have ADA (wheelchair accessible) curb ramps.

Lagoon Road and Cove Road are two-lane residential streets serving the northern portion of the Belvedere Lagoon neighborhood; the name change occurs at the Mar West Street/Tiburon Boulevard intersection. Lagoon Road serves primarily residential uses and has few sidewalks; Cove Road also serves residential uses and has intermittent sidewalks. The two roads converge to form the stop-sign-controlled south leg of the Mar West Street/Tiburon Boulevard intersection, where turns from westbound Tiburon Boulevard are restricted, directing traffic to westbound Lagoon Road only. This turn restriction serves as a traffic control measure through the residential area.

Beach Road between San Rafael Avenue and Tiburon Boulevard has two lanes and side streets are stop-sign-controlled. Beach Road provides access to the southern portion of the Belvedere Lagoon neighborhood, Belvedere Island, a major yacht club, and other facilities fronting Belvedere Cove. Beach Road extends south from a signalized intersection with Tiburon Boulevard and has intersections with Juanita Lane and Main Street in Tiburon, Cove Road, Peninsula Road, Teal Road (private roadway), and San Rafael Avenue, with crosswalks at each intersection consistent with the design of those along San Rafael Avenue, and sidewalks along both sides of the road. Between San Rafael Avenue and Cove Road, Beach Road has a central, landscaped median. South of San Rafael Avenue, Beach Road narrows, has no sidewalks, and climbs up the eastern side of the Belvedere Island neighborhood, serving parcels oriented to Belvedere Cove.

Bicycle Facilities and Bicycle Use of Belvedere Streets

For the traffic analysis conducted for the City's General Plan Update, vehicle, bicycle, and pedestrian activity were counted at three intersections along Tiburon Boulevard: at San Rafael Avenue, at the intersection of Lagoon/Cove/Mar West Street, and at Beach Road. Counts were also taken at the Beach Road/Main Street intersection. The counts were taken during the typical weekday AM peak (7:45 – 8:45 a.m.) and PM peak (4:30 – 5:30 p.m.) traffic periods and Saturday peak period for motor vehicle traffic (3:15 – 4:15 p.m.). The counts were taken in September 2008 after the start of the school year. Figures 1, 2, and 3 of the Transportation and Circulation Analysis (see **Appendix B**) show existing bicycle and pedestrian volumes. The results gathered indicate that bicycle volumes were greatest during the weekday at the Tiburon Boulevard/San Rafael Avenue intersection, with a total of 40 (two-way) bicyclists on Tiburon Boulevard. The greatest Saturday peak hour counts occurred at the Tiburon Boulevard/Beach Road intersection, with a total of 91 (two-way) bicyclists on Tiburon Boulevard and 21 (two-way) bicyclists on Beach Road.

The scenic qualities of Belvedere's roadways make the city's streets popular routes for bicyclists. One bicycle-related concern in Belvedere is the summer influx of bicycle tourism, and friction between bicycles and vehicles sharing the road is reported to be particularly evident on San Rafael Avenue. Traffic calming measures can control fast bicycle speeds. "Share the Road" strategies of signage and education materials can assist in bicycle etiquette.

Caltrans standards provide for three types of bikeway facilities, as described below:

- Class I Bikeway (bicycle path) – Provides a completely separate right-of-way and is designated for the exclusive use of bicycles and pedestrians with vehicle and pedestrian cross-flow minimized.

- Class II Bikeway (bicycle lane) – Provides a restricted right-of-way and is designated for the use of bicycles with a striped lane on a street or highway. Bicycle lanes are generally 5 feet wide. Adjacent vehicle parking and vehicle/pedestrian cross-flow are permitted.

- Class III Bikeway (bicycle route) – Provides for a right-of-way designated by signs or pavement markings for shared use with motor vehicles.

Existing Bikeways

The existing bikeways that provide access to the City of Belvedere are actually within the jurisdiction of the Town of Tiburon:

- Class I bicycle path (Richardson Bay Linear Park Multi-Use Path) from Blackie's Pasture to Mar West Street

- Class II bicycle lanes on Tiburon Boulevard (east of Mar West Street) and Paradise Drive (west of Mar West Street)

Proposed Bikeways

There are several planned bikeways that will provide access to the City of Belvedere that will be within the jurisdiction of the Town of Tiburon:[14]

- Class II bicycle lanes on Trestle Glen Boulevard (from Tiburon Boulevard to Paradise Drive)[15]

- Class III bicycle routes on Tiburon Boulevard (from U.S. 101 to Greenwood Cove Road) Greenwood Cove Road and Greenwood Back Road (to Blackie's Pasture)

- Class III bicycle route on Paradise Drive (from Mar West Street to Corte Madera) that forms a portion of the San Francisco Bay Trail

Pedestrian Facilities

Several public lanes and paths exist to serve pedestrians in Belvedere. The lanes connect narrow roadways which follow the contours of Belvedere and Corinthian islands as they ascend or descend the topography. Many of the lanes are remnants of a time when walking was a more popular activity in Belvedere, and in many cases, it was the only way to get around. Some of the lanes are heavily used and others less so. The lanes are all very important as alternatives to auto use in emergencies. The lanes that are being utilized and maintained in Belvedere are listed

14 Tiburon 2020 General Plan Draft EIR.

15 A portion of Trestle Glen Boulevard currently features a 5-foot path separated from the roadway by a raised curb. Although this facility may be utilized by bicyclists, inclusion of the raised curb would not be consistent with Class I or II facilities.

below, and they are also discussed in the Parks, Recreation, and Open Space Element of the proposed General Plan Update.

1. Lower Cedar Lane
2. Upper Cedar Lane
3. Albert's Alley (also sometimes referred to as Hawthorne Lane)
4. Lower Hawthorne Lane
5. Upper Hawthorne Lane
6. Lower McLean Lane
7. Upper McLean Lane
8. Pagoda Lane
9. Pomander Walk
10. Lower Woodwardia Lane
11. Middle Woodwardia Lane
12. Upper Woodwardia Lane
13. Lower Woodland Lane
14. Upper Woodland Lane
15. Transpac Lane
16. Cliff Lane
17. Park Lane
18. Corinthian Stairs
19. Holly Lane
20. Eucalyptus Lane
21. Belvedere Way
22. Harry B. Allen Stairs

Generally, there are two types of pedestrian facilities: those intended for exclusive use by pedestrians, such as sidewalks, and those shared with other users (i.e., Class I multi-use pathways). Pedestrian facilities at intersections can include crosswalks, pedestrian crosswalk signals, warning signage, curb ramps, and other treatments to promote safety and accessibility for disabled users.

California Vehicle Code Section 275 defines a crosswalk as either:

- That portion of a roadway included within the prolongation or connection of the boundary lines of sidewalks at intersections where the intersecting roadways meet at approximately right angles, except the prolongation of such lines from an alley across a street.

- Any portion of a roadway distinctly indicated for pedestrian crossing by lines or other markings on the surface. At intersections, a crosswalk is effectively a legal extension of the sidewalk across the roadway. Crosswalks are present at all intersections, whether marked or unmarked, unless the pedestrian crossing is specifically prohibited by the local jurisdiction. At mid-block locations, crosswalks only exist if they are marked. Sidewalks and curb cuts must comply with guidelines for implementing the Americans with Disabilities Act (ADA).

Pedestrian Facilities and Pedestrian Use of Belvedere Streets

Pedestrian facilities on streets in the Belvedere study area — San Rafael Avenue and Beach Road — are included (above) as part of the roadway descriptions. While sidewalks and pedestrian paths are provided on many streets in the Belvedere Lagoon neighborhood, including the San Rafael Avenue multi-use path, many streets in Belvedere do not have sidewalks. The majority of pedestrian crossing locations are not signalized, including most crossings on San Rafael Avenue and Beach Road; however they are prominently marked and

signed. Other streets with sidewalks include Britton Avenue, Edgewater Road, Peninsula Road, Windward Road, Leeward Road, Lagoon Road, and Cove Road.

The results gathered for the traffic analysis conducted for the proposed General Plan Update indicate that pedestrian volumes were greatest during the weekday at the Tiburon Boulevard/Beach Road intersection, with a total of 92 (two-way) pedestrians on Tiburon Boulevard and 30 (two-way) pedestrians on Beach Road; the greatest Saturday peak hour counts occurred at the same location, with a total of 98 (two-way) pedestrians on Tiburon Boulevard and 41 (two-way) pedestrians on Beach Road.

The narrow, curving nature of many of Belvedere's roads can make sharing the road difficult. Speeding and ignoring traffic controls are cited as major threats for pedestrians. Sight distance at curves can be limited and present pedestrian safety issues.

Although recently the City updated roadway crosswalk signage to improve visibility and help with pedestrian safety at crosswalks, there is need for additional traffic calming measures. None of the streets in Belvedere warrant high traffic speeds, so the need for traffic calming would not be disputed as much as the means to achieve it. Old-fashioned speed bumps can be annoying, but more sophisticated choices such as speed tables, traffic islands and circles, varied paving, and deliberate street narrowing can be functional and aesthetic.

Maintaining sight lines is important, and the City has addressed concerns by allowing parking only in certain areas, away from critical sightlines. In addition, the City maintains a 10-foot clearance minimum for emergency vehicles, and development projects are subject to sight-line review by a Public Works Engineer. These practices should be continued.

Safe Routes to School

The Marin County Bicycle Coalition has been a leader in the Safe Routes to Schools movement. Safe Routes to Schools is designed to increase the number of children walking and biking to school. A "SR2S" program integrates health, fitness, traffic relief, environmental awareness, and safety under one program. It is an opportunity to work closely with schools, communities, and local government to create a healthy lifestyle for children and a safer and cleaner environment for everyone.

The program has four components:

- **Encouragement** – Events, contests, and promotional materials are incentives that encourage children and parents to try walking and biking.

- **Education** – Classroom lessons teach children the skills necessary to navigate through busy streets and persuade them to be active participants in the program.

- **Engineering** – Examine the physical barriers that prohibit children from safely navigating the routes to schools.

- **Enforcement** – Partner with law enforcement to increase the police presence around schools. Driver's education is even more effective in changing the behavior of harried parents and commuters who are not paying attention to the children on the roads.

Marin County adopted the Safe Routes to Schools program in 2003, and the Marin Congestion Management Agency funded the program with federal funding through the enhancements

program and through the Bay Area Air Quality Management District's Transportation for Clean Air Funding award. In November 2004, the voters of Marin passed a ½ cent transportation sales tax, which provides 11 percent of its funding for Safe Routes to Schools including program, crossing guards, and infrastructure. Safe Routes to School is now a program of the Transportation Authority of Marin and continues to be implemented by the Marin County Bicycle Coalition.

A successful Safe Routes to Schools program improves the health and safety of pupils and the surrounding neighborhood. Students increase their physical activity, potentially improving their alertness and behavior. California studies have shown that children who are physically active perform better academically (Crane Transportation Group, 2009). Safe Routes to Schools can also satisfy the physical activity component of a school's wellness policy. For example, in January 2001 the Town of Tiburon joined the Reed Union School District (RUSD) and Saint Hilary School in forming the Tiburon Peninsula Traffic Committee, which aimed to increase carpooling, walking, and biking to schools and to improve traffic flow around school neighborhoods. From that process, the Town of Tiburon approved a traffic safety improvement plan for areas around the schools. The improvements, including the installation of sidewalks funded by Safe Routes to Schools grants, are under way and ongoing. For example, Appendix C of the Town of Tiburon Bicycle and Pedestrian Master Plan, 2008 Update, provides Safe Routes to Schools Project Details for Del Mar School.

Cities with existing programs have experienced reduced traffic congestion, reduced collisions in and around schools, and decreased speed in residential neighborhoods. Children learn valuable traffic safety skills and responsibility, and more people of all ages are able to walk and bike in the neighborhood as a result of improved access.

The goals, policies, and actions section of the Transportation and Circulation Element of Belvedere's proposed General Plan Update contains policies and actions designed to support the Tiburon Peninsula's Safe Routes to School programs.

Bus Service

Bus service to the Tiburon Peninsula is provided by Golden Gate Transit, which is operated by the Golden Gate Bridge, Highway, and Transportation District. Service reductions in 2003 resulted in a 30 percent decrease in bus service by the district.

There is very limited bus service into Belvedere, with one stop in front of Belvedere Land Company Park on Beach Road. Two bus routes serve the Tiburon and Belvedere communities via Tiburon Boulevard:

- Route 8 (to and from San Francisco during commute hours, every 30 minutes)
- Route 19 (hourly service throughout the day between Marin City and Tiburon)

Public transit on Tiburon Boulevard from the U.S. 101 freeway is limited, although large numbers of people come to Belvedere to work in its businesses and homes each day. Belvedere employers report that their employees find the bus service inadequate and unreliable and prefer to drive or carpool. While carpooling has some advantages, finding parking in Belvedere can be a challenge. In other jurisdictions where it has been difficult for public transit agencies to effectively provide transit service, such as parts of the East Bay and South Bay, employers have formed collectives that run private shuttles to connect to main line transit.

There are no known shuttles operating in the Belvedere/Tiburon area; however, provision of shuttle service should be explored to and from Belvedere and the Ferry Terminal, to park-and-ride lots and bus stops along the U.S. 101 freeway. Stops could include the Strawberry Village Shopping Center, Cove Shopping Center (Blackfield Drive), Blackie's Pasture and Richardson Bay Park, Landmarks Art and Garden Center, Boardwalk Shopping Center, Ark Row Shopping Center, Shore Line Park, and the Ferry Terminal. A shuttle could serve employees and visitors, as well as specific arts and civic groups, desiring access to Belvedere and Tiburon. Additionally, shuttles could be equipped with bicycle racks to accommodate the many two-wheeled visitors to the Tiburon Peninsula who arrive by ferry. Significant grant funding from public and private sources may be available for development of a shuttle service.

The Transportation and Circulation Element of the proposed Belvedere General Plan Update contains several policies and actions designed to support studying the feasibility of collaboration with a public/private shuttle collective.

Ferry Service

The Tiburon-Belvedere area has the highest percentage of ferry commuters among Bay Area cities with ferry service. The privately funded Blue and Gold Fleet provides four morning commute trips from Tiburon to the San Francisco Ferry Building and four return trips serving the afternoon commute. In addition, several trips each day serve the reverse commute direction, and an additional five daily trips connect with Sausalito and San Francisco's Pier 41.

REGULATORY FRAMEWORK

The following federal, state, and local regulations, plans, programs, and guidelines are applicable to the proposed City of Belvedere Housing Element Update and General Plan Update. There are several regional agencies that administer federal and state programs in regard to traffic and transportation issues in the Tiburon-Belvedere Planning Area. Below is a summary of the agencies, as well as recent planning initiatives that have been taken to improve regional transportation networks.

- **Federal Laws and Regulations** – Complete Streets (pending federal legislation)
- **State Laws and Regulations** – There are no applicable state regulations or programs for the General Plan Planning Area.
- **Local Laws, Regulations, and Policies** –Transportation Sales Tax Expenditure Plan, Water Emergency Transportation Authority, Marin Countywide Plan, Town of Tiburon Circulation Improvements

PROJECT IMPACTS AND MITIGATION MEASURES

a) less than significant

Bicycle and pedestrian facilities, and transit and ferry service are essential components of the existing and future alternatives to vehicular transportation. The existing adopted plans, policies, and programs for all modes of transportation provide for the protection and improvement of the region's and City of Belvedere's transportation network. The Transportation and Circulation Element of the proposed General Plan Update also provides a number of policies that would ensure adequate and safe vehicular, transit, bicycle, and pedestrian traffic in the city. As such, this impact is considered **less than significant**.

Mitigation Measures

None required.

b) less than significant

The traffic analysis conducted for the General Plan Update determined current traffic volumes for the city by conducting weekday AM and PM commute peak traffic period and Saturday peak period intersection turning movement counts at four intersections in September 2008 once school was in session. Intersections analyzed were determined in consultation with Plan B Municipal Consulting and City staff, and were conducted at the request of the City of Belvedere.

Volumes were updated in May 2009 while schools were still in session as part of the system of counts performed for the Easton Point Development in the Tiburon planning area of Marin County. The May 2009 count data were found to have slightly higher overall volumes and thus were used to establish current AM and PM peak hour traffic volumes. The system of Saturday traffic count volumes utilized the September 2008 count data prepared for the City of Belvedere. The weekday peak hours generally were found to occur between 7:45 and 8:45 a.m. and 4:30 and 5:30 p.m., while the Saturday peak hour was found to occur between 3:15 and 4:15 p.m.

Future (year 2030) Tiburon-Belvedere planning area volumes were determined based upon the Town of Tiburon traffic model, updated to 2009 conditions as part of the Easton Point Development EIR traffic analysis, and including projected buildout of second units in Belvedere, as envisioned in the Housing Element Update.

The intersections in Belvedere were found to be operating at a satisfactory level both now and into the planning horizon of the General Plan (year 2030). Therefore, no street or intersection improvements are planned to accommodate additional traffic volume or to facilitate traffic flow, and this impact is considered less than significant (Crane Transportation Group, 2009).

The following proposed General Plan policies and associated actions also help reduce existing traffic congestion and help to limit increases in future traffic congestion: Policy TRANS-4.1; Action TRANS-4.1.1; Policy TRANS-4.2; Action TRANS-4.2.1; Policy TRANS-4.3; Action TRANS-4.3.1; Policy TRANS-4.4; Action TRANS-4.1.1; Action TRANS-4.4.2; Action TRANS-4.4.3; Action TRANS-4.4.4; Action TRANS-4.4.5. This impact is considered to be **less than significant.**

Mitigation Measures

None required.

c) no impact

The Housing Element Update and General Plan Update would result in no component of growth or change that would impact air traffic patterns, levels of air traffic use, or a change in existing access to air traffic. There would be no increased or decreased safety risk related to air traffic due to the updates and **no impact** would result.

Mitigation Measures

None required.

d) less than significant

The vision of the Transportation and Circulation Element of the proposed General Plan, established early on in the General Plan community outreach process, is for Belvedere to have "a balanced and well integrated circulation system that is safe and efficient and connects neighborhoods to jobs, schools, local amenities and recreational areas." In order to further this mission, the following Guiding Principles were developed:

- Develop a strong multimodal circulation system that provides a range of transportation choices;
- Promote alternatives to the automobile by providing safe streets, trails, sidewalks, and bike paths;
- Plan for future growth at the city's desired level of service by providing mobility and connectivity options to the city's residential, commercial, and office areas; and
- Promote accessible paths of travel.

Belvedere Island's and Corinthian Island's narrow streets and steep hillsides contribute to a severe parking problem. Most of the remaining undeveloped sites are very steep, and providing the required two off-street parking spaces per unit is difficult. Many of Belvedere's older houses do not have any off- street parking. On-street parking on the islands is very limited, and road widths do not allow any additional on-street parking in most places. There are designated parking zones in several locations on Belvedere Island. The City should make every effort to require parking for all new homes, as well as to require upgrading parking facilities when remodeling is approved. Belvedere's Zoning Ordinance requires conformance with parking requirements as a condition of Design Review approval when an addition of more than 100 square feet is proposed. Wherever possible, additional on-street parking areas should be created.

In the Belvedere Lagoon area, the streets are wide enough to provide sufficient on-street parking, and virtually all of the houses have garages or carports. However, commuter parking by ferry riders and car-pool can be a nuisance in the lagoon neighborhoods. On Cove and Beach roads, some parking regulations such as preferential parking decals and limited time parking have been implemented to alleviate these problems.

In addition, the following proposed General Plan policies and associated actions would help reduce the potential effects of impacts due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (sharing narrow roads with on-street parking): Action TRANS-1.1.1; Action TRANS-1.1.2; Policy TRANS-1.2; Action TRANS-1.2.1; Action TRANS-1.2.2; Action TRANS-1.2.3; Action TRANS-1.2.4; Action TRANS-1.2.5; Action TRANS-1.2.6; Action TRANS-1.2.7; Action TRANS-1.2.8; Action TRANS-2.1.3; Action TRANS-2.1.4. This impact is therefore considered to be **less than significant.**

Mitigation Measures

None required.

e) less than significant

Access to the city is currently provided via San Rafael Avenue at Tiburon Boulevard and Beach Road at Tiburon Boulevard. Both San Rafael Avenue and Tiburon Boulevard are classified as arterial roads with adequate access and lane configurations. In addition, there is a third access point at Lagoon Road from San Rafael Avenue. The Transportation and Circulation Analysis

conducted for the City's General Plan Update has found that these intersections currently operate at a satisfactory level and will continue to do so under the General Plan planning horizon of 20 years.

In addition, the following proposed General Plan policies and associated actions would reduce the potential impacts to emergency access: Policy TRANS-1.1; Action TRANS-1.1.1; Action TRANS-1.1.2; Policy TRANS-1.2; Action TRANS-1.2.1; Action TRANS-1.2.2. This impact is therefore considered to be **less than significant.**

Mitigation Measures

None required.

f) less than significant

See response to 16 a) above.

In addition, the following proposed General Plan policies and actions would further assist in mitigating impacts from conflicts with adopted plans, policies, or programs for transit, bicycle, or pedestrian facilities: Policy TRANS-3.1; Action TRANS-3.1.1; Action trans-3.1.2; Policy TRANS-3.2; Action TRANS-3.2.1; Action TRANS-3.2.2; Action TRANS-3.2.3; Policy TRANS-4.1; Action TRANS-4.1.1; Policy TRANS-4.2; Action TRANS-4.2.1; Policy TRANS-4.3; Action TRANS-4.3.1; Policy TRANS-4.4; Action TRANS-4.1.1; Action TRANS-4.4.2; Action TRANS-4.4.3; Action TRANS-4.4.4; Action TRANS-4.4.5. Therefore this impact would be considered **less than significant**.

Mitigation Measures

None required.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
17. UTILITIES AND SERVICE SYSTEMS. Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?*	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources or are new or expanded entitlements needed?	☐	☐	☒	☐
e) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

**Stormwater drainage facilities are discussed under the Hydrology and Water Quality subsection.*

EXISTING SETTING

LOCAL SETTING – CITY OF BELVEDERE

Wastewater

In July 2005, the Belvedere sewer system was annexed to Sanitary District No.5 of Marin County (SD-5), which provides collection and treatment of wastewater to parts of the Tiburon Peninsula and the City of Belvedere. SD-5 serves over 3,500 households and has been servicing the area since the early 1940s. Wastewater collection and conveyance pipes range from 6 to 15 inches for trunk sewers, with the vast majority being 6 inches (R. Lynch, 2010).

SD-5 owns and operates the Tiburon Wastewater Treatment Plant (TWWTP), located at 2001 Paradise Drive in Tiburon. The TWWTP provides secondary treatment of wastewater from domestic and, to a lesser extent, commercial sources in the Town of Tiburon, City of Belvedere, and other unincorporated areas. The plant has a dry weather design capacity of 0.98 million

gallons per day (mgd). Currently, average dry weather flow is 0.75 mgd (R. Lynch, 2010). Treated, disinfected, and dechlorinated secondary effluent from the TWWTP is combined with treated, disinfected, and dechlorinated effluent from the Sewerage Agency of Southern Marin's wastewater treatment plant, and the combined effluent is discharged through a pipe in central San Francisco Bay to Raccoon Strait.

Water

Potable water services are provided to the City of Belvedere by the Marin Municipal Water District (MMWD). The MMWD serves the eastern corridor of Marin County from the Golden Gate Bridge northward up to, but not including, Novato, an area covering approximately 147 square miles.

Water Supplies

MMWD water supply consists primarily of runoff rainfall water collected in seven reservoirs, as well as imported water from the Russian River in Sonoma County.

The seven MMWD-owned reservoirs supply 75 percent of the MMWD's yearly supply. Five of the reservoirs are located on the Mt. Tamalpais watershed (Phoenix, Lagunitas, Bon Tempe, Alpine, and Kent) and the other two (Nicasio and Soulajule) are located in West Marin. Total reservoir storage operated by MMWD is currently 25.9 billion gallons, or 79,566 acre-feet (AF). The average yearly runoff less losses due to evaporation is 61,415 AF.

The MMWD has a contract with the Sonoma County Water Agency (SCWA) for the remaining 25 percent of its water supply. Since 1975, the MMWD has contracted with the SCWA for a supplemental supply of water, primarily from the Russian River. The contract, known as the Supplemental Water Supply Agreement, allows the MMWD to take deliveries of up to 14,300 acre-feet per year from SCWA and places seasonal limitations on water delivery rates. In winter, maximum delivery rate is 23 million gallons per day and in summer total deliveries are limited to 12.8 mgd. The contract will remain in force until June 30, 2034, which is also the expiration date of the current Russian River water supply master agreement between SCWA and its eight prime contractors other than MMWD. However, it can be extended at the request of MMWD for a term not to exceed the term of any renewal of the SCWA master water supply agreement. Despite being contracted to receive up to 14,300 acre-feet per year, the average amount of water imported from the Russian River is currently only 7,300 acre-feet per year due to capacity limitations in the delivery system owned and operated by SCWA and the North Marin Water District (MMWD, 2010).

Table 23 below compares the MMWD's current and projected water supply and demand. The demand projections conform to the MMWD's 2007 Water Conservation Master Plan, which includes current Plumbing Code revisions. As discussed below, the MMWD is currently in a water supply deficit that is projected to grow over time. This increase in the water supply deficit will be due in part to increased water demand but will primarily be caused by a decrease in available pipeline capacity in the facilities that deliver Russian River water to the MMWD.

TABLE 23
MMWD SUPPLY AND DEMAND PROJECTIONS (IN AF)

	2005	2010	2015	2020	2025
Supply Availability (AF)	28,400	27,900	27,400	26,900	26,400
Demand Projections (AF)	31,700	32,100	32,800	33,000	33,100
Difference (AF)	-3,300	-4,200	-5,400	-6,100	-6,700

Source: MMWD, 2006a

Table 24 below shows MMWD's water supply reliability, with the water supply shown based on the MMWD's operational yield of 28,400 AF in 2005. During a single-year drought, the MMWD would have 90 percent of its water supply available, with only 75 and 50 percent, respectively, available in the second and third years of a multiple-year drought. MMWD has a rationing plan to reduce water demand consistent with reduced water supplies during drought years. To assess the need for rationing, the MMWD developed trigger points based on reservoir storage levels on April 1 for each year. The trigger point for the "alert stage" (voluntary) rationing is set at total reservoir storage of less than 50,000 acre-feet on April 1, and the trigger for the mandatory rationing plan is reservoir storage below 40,000 acre-feet on April 1 (MMWD, 2006a).

TABLE 24
ESTIMATE OF MINIMUM WATER SUPPLY AVAILABLE DURING MULTIPLE DRY WATER YEARS (IN AF)[A]

Average/Normal Water Year (AF)	Dry Water Years		
	Year 1	Year 2	Year 3
28,400[b]	25,560	21,300	14,200
Percentage of Normal Supply	90%	75%	50%

Notes: [a] *Three-year minimum water supply (Water Code Section 10632 (b)).*
[b] *Reliable system operational yield in 2005.*
Source: *MMWD, 2006a*

MMWD is pursuing a number of alternatives to balance supply and demand, including reservoir improvements, expansion of the recycled water system, conservation, increased diversion from the Russian River, and desalination. These include the measures discussed below (MMWD, 2010).

Reservoir Improvements – Some operational improvements can be made to augment water supplies by 1,000 AF, including reconfiguration of a water intake pump at Alpine Lake to allow MMWD to tap currently inaccessible water, the construction of an additional untreated water pipeline and inlet structure at Kent Lake, and the installation of a larger pump station in Corte Madera to optimize the distribution of water.

Recycled Water – MMWD's existing recycled water plant, operated in conjunction with the Las Gallinas Valley Sanitary District, is limited by a lack of customers along the plant's distribution system. The most promising potential new customer is the Peacock Gap Golf Course in San Rafael. The supply could be increased by 300 acre-feet per year, and existing distribution could be expanded to add this customer and others along the route.

Conservation – In addition to the conservation program MMWD already has in place, the district is investigating other measures to achieve an additional 3,300 acre-feet per year in reductions in commercial and residential water demand. These measures include making it easier for customers to participate in plumbing retrofit and incentive programs, increasing training and certification courses, and improving codes and enforcement procedures related to water conservation.

Additional Russian River Supply – There are two phases to this option: one is the construction of a new pipeline in Novato to allow MMWD to receive an additional 2,300 acre-feet per year from the Russian River, and the other is for SCWA to make improvements to its infrastructure to increase water delivery capacity by 1,000 acre-feet per year for Marin.

Desalination – Desalination converts raw bay water into drinking water by removing the salt and other impurities. MMWD has been investigating desalination as a potential water source for

Marin since 1990. In 2001, the MMWD initiated work on an environmental impact report and established a temporary pilot desalination plant in 2005. The pilot plant demonstrated that bay water could be purified to levels that exceed state drinking water standards. At the August 19, 2009, board meeting, the MMWD Board of Directors voted to keep desalination as one of Marin's potential future water supply sources by approving a 5 mgd desalination facility, expandable to 15 mgd.

Water Facilities

As previously discussed, the MMWD owns and operates seven reservoirs with a total capacity of 79,566 AF. The capacity and age of each reservoir is shown in **Table 25** below.

TABLE 25
MMWD RESERVOIRS

Reservoir	Capacity in Acre-Feet (AF)	Percentage of Total Capacity	Year Built
Lagunitas	350	0.4	1872
Phoenix	411	0.5	1905
Alpine	8,891	11.2	1918a
Bon Tempe	4,017	5.1	1948
Kent	32,895	41.3	1953b
Nicasio	22,430	28.2	1960
Soulajule	10,572	13.3	1979
TOTAL	**79,566**	**100**	**-**

Notes: [a] *Enlarged in 1924 and 1941.*
[b] *Enlarged in 1982.*
Source: MMWD, 2010

In addition to the reservoirs, MMWD potable water facilities include 941 miles of transmission and distribution pipeline, 139 storage tanks with a total capacity of 83 million gallons, 95 pump stations, and 3 potable water treatment plants. The three potable water treatment plants — San Geronimo Treatment Plant, Bon Tempe Treatment Plant, and Ignacio Treatment Plant — have a combined maximum treatment capacity of 59 mgd. Currently the average treatment plant production is 25 mgd (MMWD, 2010). The average age of pipes in the MMWD system is just over 40 years old (MMWD, 2006b). MMWD pipes range in size from 3/4-inch to 42-inch transmission pipes that are made of various materials, depending on when and where they were installed. In the City of Belvedere, there are ongoing problems with the water mains, and it is not uncommon for the aging water mains to rupture.

In addition to MMWD water supply facilities, Russian River deliveries to the MMWD are subject to available pipeline capacity in facilities owned by the SCWA and MMWD. Russian River water is diverted by SCWA at a series of subsurface collectors near Wohler Bridge. SCWA also has backup/supplemental well capacity at Mirabel and Laguna de Santa Rosa that it uses to address operational and maintenance activities of the agency. Water going to the MMWD flows through SCWA pipelines to Petaluma, and then southward in the MMWD's aqueduct to the northern end of the WMWD's pipeline facilities in Novato. As MMWD and SCWA water use increases in the future, there will be less pipeline capacity in their facilities available for water deliveries to MMWD. When these limitations have a significant impact, MMWD has the option to

construct new pipelines to supplement the capacity available in the other agencies' facilities and assure continued delivery of Russian River water to MMWD (MMWD, 2006a).

Solid Waste

The Mill Valley Refuse Service collects residential and commercial garbage, recycling, and yard waste from the City of Belvedere, as well as from the cities of Corte Madera, Mill Valley, Tiburon and surrounding county areas. Residential service includes weekly refuse and recycling collection and biweekly service for green cans (for yard waste). Residential customers must purchase their own 20-, 32-, or 45-gallon garbage can (Lazorone, 2010).

The Marin County Hazardous and Solid Waste Management Authority, which includes the municipalities of Belvedere, Corte Madera, Fairfax, Larkspur, Mill Valley, Novato, Ross, San Anselmo, San Rafael, Sausalito, Tiburon, and unincorporated Marin County, sent a total of 210,849 tons of solid waste to landfills in 2008 (Cal Recycle, 2010). The Waste Management Authority had a diversion rate (percentage of solid waste recycled) of 72 percent in 2006. The diversion rate has exceeded 70 percent since 2000.

Redwood Landfill, a fully permitted Class III disposal site located approximately 3.5 miles north of Novato, is used for more than 95 percent of Marin County's solid waste disposal, including solid waste from the City of Belvedere. In 2000, Redwood Landfill had approximately 12.9 million cubic yards of remaining capacity, or 67.5 percent of total capacity. Redwood Landfill is permitted to accept a maximum of 2,300 tons of solid waste per day (Cal Recycle, 2010).

Redwood Landfill and Recycling Center is currently pursuing an updated permit. Redwood's 1995 Solid Waste Facility permit called for a maximum capacity of 19.1 million cubic yards of disposal, and the approved grading (or fill) plan indicated a total volume of 25 million cubic yards, including disposal and daily cover. In 1998, Redwood's application requested an increase in landfill capacity to 34 million cubic yards (accomplished by flattening the top, not enlarging the landfill footprint or increasing the height). In 2006, at the request of Marin County staff, Redwood committed to implement a mitigated alternative plan that essentially does not increase disposal capacity beyond what was shown in the 1995 grading plan. The mitigated alternative adds approximately nine months of operation time to the 70-year life span of the landfill (Redwood Landfill and Recycling Center, 2010). The permitted capacity for the mitigated alternative includes:

- 19.1 million yards of disposal (continuing the existing Solid Waste Facility Permit);
- 5.9 million yards of daily cover during the life of operation (consistent with the grading plan in the existing permit); and
- 1 million cubic yards of final cover, which will be placed after the landfill is closed to prepare the property for future recreational or other uses.

Under the mitigated alternative, waste received for disposal would not increase over what can be received today. The mitigated alternative includes these ceilings (Redwood Landfill and Recycling Center, 2010):

- 1,290 tons per day of municipal solid waste

- 100 tons per day of Class B biosolids (sludge), which is similar to the amount of wet Class B biosolids that could be disposed under the 1995 Solid Waste Facility Permit (capped at 1 ton of biosolids for every 9.5 tons of solid waste disposed)

REGULATORY FRAMEWORK

The following state and local regulations, plans, programs, and guidelines are applicable to the proposed City of Belvedere Housing Element Update and General Plan Update:

- **Federal Laws and Regulations** – There are no applicable federal regulations or programs for the General Plan Planning Area.

- **State Laws and Regulations** – National Pollution Discharge Elimination System, Urban Water Management Planning Act, Senate Bill 610 (SB 610), Assembly Bill 901 (AB 901), SB 221, California Integrated Waste Management Act, California Public Utilities Commission, California Building Energy Efficiency Standards

- **Local Laws, Regulations, and Policies** – Marin Municipal Water District Urban Water Management Plan, Marin Municipal Water District 2007 Water Conservation Master Plan, Marin County Hazardous and Solid Waste Joint Powers Authority, Marin County Integrated Waste Management Plan, Marin County Construction and Demolition Debris Model Ordinance

PROJECT IMPACTS AND MITIGATION MEASURES

a) less than significant

Given that the City of Belvedere is largely built out, the proposed Housing Element Update and General Plan Update would not result in substantial changes in land use and/or development in the city. A small number of infill and redevelopment opportunities, primarily in the commercial and multi-family residential districts, are expected to result in a maximum population increase of 50 persons by 2030. Any future development would be served by SD-5 and the TWWTP. As the TWWTP is currently operating under capacity, an exceedance of wastewater treatment requirements of the San Francisco Bay Regional Water Quality Control Board is not anticipated.

Mitigation Measures

None required.

b) less than significant

Given that the City of Belvedere is largely built out, the proposed Housing Element Update and General Plan Update would not result in substantial changes in land use and/or development in the city. A small number of infill and redevelopment opportunities, primarily in the commercial and multi-family residential districts, are expected to result in a maximum population increase of 50 persons by 2030. However, as shown in the **Tables 23** and **24** above, both existing and future growth projected in the MMWD service area is anticipated to exceed current and projected water supply sources in both normal and dry years. Due to above-average rainfall during the last 15 years, the MMWD has been able to meet current demands. However, in the event of a sustained drought, MMWD would not have enough water given its current water supply sources and level of demand.

The MMWD is currently considering several options to improve future water supply conditions, which are summarized in more detail above:

- Reservoir improvements
- Recycled water
- Conservation
- Additional Russian River supply desalination

Belvedere falls within MMWD's jurisdiction, and all properties in Belvedere are subject to the agency's water conservation regulations, water service connection fee rates, and water use fee rates set by the MMWD. While Marin County's water use per capita has decreased significantly in the past 35 years, MMWD still suffers from a water supply deficit, as an increased population has resulted in water demand that exceeds the available supply in a single dry year.

As discussed under the Existing Setting subsection, the MMWD acquires 75 percent of its water from seven reservoirs on Mount Tamalpais and west Marin County. MMWD also imports water from the Russian River to supplement their supplies. The MMWD is considering alternative water supply sources, including the desalination plant, increasing the water availability purchased by the Sonoma County Water Agency, and increasing the use of recycled water activities to accommodate a deficit water supply in the case of a drought and/or to meet demands for a projected increase in usage. The possible environmental effects from alternative water supply improvement projects are summarized in **Table 26**.

TABLE 26
TYPES OF POTENTIAL ENVIRONMENTAL IMPACTS THAT COULD BE CAUSED BY NEW WATER SUPPLY PROJECTS AND RELATED INFRASTRUCTURE

Types of Potentially Affected Resources	Related and Potential Impacts
Surface Water Hydrology	Changes in the magnitude and timing of flows in affected streams; changes in the level of affected reservoirs and lakes.
Geology and Soils	Increase in erosion and sedimentation from construction activities; change in sediment transport in streams; geologic hazards could cause problems for new facilities and their operators if they are not sited carefully.
Water Quality	Changes in stream and reservoir/lake temperature, dissolved oxygen, turbidity, total suspended solids, and other water quality parameters of concern during construction and operation of new facilities.
Fishery Resources including Special-Status Species	Change in the amount and quality of fishery habitat and water conditions.
Wetlands and Riparian Habitat	Changes in the amount or functions and values of various types of wetlands from the construction of new facilities, or in riparian areas. Riparian habitat could be affected by hydrology changes or new construction and is especially important habitat for wildlife

Types of Potentially Affected Resources	Related and Potential Impacts
	and botanical species.
Botanical Resources including Special-Status Species	Disturbance to rare plants and their habitat and other types of vegetation from construction activities or changes in hydrology.
Wildlife Resources including Special-Status Species	Changes in the amount and quality of affected wildlife habitat where facilities would be located.
Recreation	Changes in the quantity or quality of recreation opportunities, including fishing, boating, hiking. Some impacts could also occur during construction and operation of new conveyance, treatment, storage, and pumping facilities.
Visual Resources	The addition of new project facilities could affect the visual environment. New pipelines, pumping stations, or transmission lines near or in residential areas or highly visited areas would cause negative impacts.
Agriculture	Some irrigated land or grazing land could be taken out of production where project conveyance facilities need to be located and to accommodate growth. The availability of surface water supplies for agricultural uses could increase.
Cultural Resources	Historic, prehistoric, and ethnographic resources could be affected by hydrology changes or the construction and maintenance of new facilities.
Compatibility with Existing Land Uses and Other Policies and Plans	Some new project facilities may not be compatible with surrounding land uses, or may be inconsistent with related federal, state, tribal, and local plans and policies (including those of the U.S. Forest Service, U.S. Fish and Wildlife Service, and California Department of Fish and Game).
Mineral Resources	New project facilities could interfere with the extraction of minerals at known or yet-to-be-discovered mineral sites.
Public Utilities	The routing and sitting of new project facilities could interfere with the operation or maintenance of existing or planned public utilities, including communication and energy infrastructure.
Socioeconomic Resources	Customers of the water purveyors and other would enjoy the socioeconomic benefits associated with a more reliable water supply and related economic growth. Water rates would likely increase to help pay for new facilities. Facility construction would cause short-term and beneficial employment and income impacts. Energy or mineral impacts would also cause related socioeconomic effects.
Air Quality and Noise	Air emissions from construction equipment and traffic and loud noises could occur during the construction phase of new projects. New pumping stations would likely cause adverse noise impacts for nearby residents and recreationists.
Transportation	Local roads would experience traffic increases during construction.

Types of Potentially Affected Resources	Related and Potential Impacts
Public Health and Safety	Construction activities could create some safety hazards.
Growth-Inducing Effects	New system infrastructure and water supply projects would likely cause growth-inducing impacts.

The MMWD prepared an environmental impact report for the consideration of a desalination project to supplement water supplies for county residents. The EIR identified the following significant and unavoidable impacts for the desalination project:

- Alteration of the visual character of the San Quentin Ridge.
- Project construction would temporarily increase ambient noise levels during the construction period.

As noted above, the MMWD currently has water supply shortages, but has provisions and water supply improvement projects that are expected to ensure adequate water supply.

Implementation of the proposed General Plan Update policies and associated actions would require utilization of conservation measures to reduce water supply impacts: Action SUST-1.1.1; Action SUST-1.2.1; Action SUST-1.2.4; Policy SUST-6.1; Action SUST-6.1.1; Policy SUST-6.2; Action SUST-6.2.1; Action SUST-6.2.2; Policy SUST-6.3; Action SUST-6.3.1; Action SUST-6.3.2; Policy SUST-6.4; Policy SUST-6.5. In addition, the City has an adopted Design Review Ordinance which includes a requirement that landscape plans use drip irrigation systems, encourage drought-tolerant plantings, and minimize turf areas. The City uses well water to irrigate city parks, and low-flow toilets are installed in all city facility bathrooms. Thus, this impact is **less than significant**.

Mitigation Measures

None required.

c) less than significant

The reader is directed to discussion of impacts under issue e section 9 (Hydrology and Water Quality).

d) less than significant

See response to 17b) above.

e) less than significant

Given that the City of Belvedere is largely built out, the proposed Housing Element Update and General Plan Update would not result in substantial changes in land use and/or development in the city. A small number of infill and redevelopment opportunities, primarily in the commercial and multi-family residential districts, are expected to result in a maximum population increase of 50 persons by 2030. Any future development would be served by SD-5 and the TWWTP. As the TWWTP is currently operating under capacity, SD-5 anticipates that the growth in the City of Belvedere will not significantly impact treatment capacity or operations at the TWWTP (R. Lynch,

2005). Furthermore, SD-5 has indicated that sewer collection and conveyance pipes are adequately sized to accommodate increased flows associated with potential growth in Belvedere (R. Lynch, 2005).

As identified above, SD-5 has indicated that adequate wastewater treatment and conveyance capacity is available to accommodate anticipated wastewater service demands of the proposed Housing Element Update and General Plan Update. Thus, this impact is **less than significant**.

Mitigation Measures

None required.

f–g) less than significant

The implementation of the proposed Housing Element Update and General Plan Update would result in a maximum population increase of approximately 50 people in the city by 2030, as well as a corresponding increase in solid waste generation over existing levels. The increase in solid waste generation would increase the demand for waste collecting and recycling services from the Mill Valley Refuse Service, as well as the amount of solid waste being sent to the Redwood Landfill.

The Mill Valley Refuse Service has indicated that there would not be a need for additional facilities, equipment, and/or personnel necessary to adequately serve growth accommodated under the proposed Housing Element Update and General Plan Update (Lazarone, 2010).

The Redwood Landfill has a permitted capacity of 19,100,000 cubic yards. As of 2000, the remaining capacity of the landfill was 12,900,000 cubic yards. In addition, there is currently landfill capacity available in other parts of the state and in the state of Nevada.

The City, as part of the Marin County Hazardous and Solid Waste Management Authority, has had a diversion rate of over 70 percent since 2000. The City would continue to implement the Source Reduction and Recycling Element (SRRE) that is included in Marin County's Integrated Waste Management Plan, which would ensure continued compliance with AB 939 under the proposed General Plan Update.

As identified above, there is adequate capacity to provide solid waste service to the City of Belvedere under the proposed Housing Element Update and General Plan Update. In addition, the following policy and action items would encourage further recycling efforts in the community, particularly reducing construction waste via a Construction and Demolition Recycling Ordinance: Policy SUST-5.1; PolicySUST-5.2; Action SUST-5.2.1; Action SUST-5.2.2; Action SUST-5.2.3. Therefore, this impact would be **less than significant**.

Mitigation Measures

None required.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
18. MANDATORY FINDINGS OF SIGNIFICANCE. Would the project:				
a) Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐
b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☐	☒	☐
c) Have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

DISCUSSION

The following are Mandatory Findings of Significance in accordance with Section 15065 of the CEQA Guidelines.

a) Less Than Significant Impact

The reader is directed to section 4 of this IS/MND for a detailed discussion on potential project impacts to biological resources. The reader is also referred to section 5 for a detailed discussion of potential project impacts on cultural and historical resources. Based on evaluations and discussions contained in this Initial Study/Mitigated Negative Declaration, the proposed project has a very limited potential to incrementally degrade the quality of the environment because the site is not in an environmentally sensitive location. As a result, the proposed project would not significantly affect the environment.

b) Less Than Significant Impact

The proposed project would have impacts that are individually limited to a less than significant level with mitigation measures but that are not cumulatively considerable. No cumulative environmental impacts have been identified in association with the proposed project that cannot be mitigated to a less than significant impact level or that were not identified through the City of Belvedere's General Plan. Given that the project's impacts are less than significant with mitigation measures identified, cumulative impacts are also not foreseen to be significant.

c) Less Than Significant Impact with Mitigation Incorporated

As determined in the various sections of this Initial Study/Mitigated Negative Declaration, with implementation of the mitigation measures provided, the proposed project would not result in any significant environmental effects and would adversely affect human beings, either directly or indirectly. Therefore, with mitigation, this impact is considered to be less than significant with mitigation incorporated.

5.0 REFERENCES

Ambient Air Quality and Noise Consulting. 2010. *Noise Impact Analysis for City of Belvedere General Plan Update*. February 2010.

Association of Bay Area Governments (ABAG). 2006. *Association of Bay Area Governments Local Hazard Mitigation Plan, City of Belvedere Annex*.

Association of Bay Area Governments (ABAG). 2007. *Projections 2007, Forecasts for the San Francisco Bay Area to the Year 2035.*

Bay Area Air Quality Management District (BAAQMD). 2009. *Bay Area Air Quality Management District Draft CEQA Air Quality Guidelines*.

Bay Area Air Quality Management District (BAAQMD). 2010. http://www.baaqmd.gov/ (accessed February 7, 2010).

Belvedere-Tiburon Library. September 2009. *Answers to Questions About the Library Expansion*.

Belvedere-Tiburon Recreation District. 2010. http://www.btrecreation.com/ (accessed February 10, 2010).

California Air Resources Board (CARB). 2000. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. http://www.arb.ca.gov/diesel/documents/rrpFinal.pdf

California Air Resources Board (CARB). 2006. *The 2006 California Almanac of Emissions and Air Quality*. Sacramento, CA.

California Air Resources Board (CARB). 2009a. *AB 32 Climate Change Scoping Plan*.

California Air Resources Board (CARB). 2009b. *Air Quality Data Statistics.* http://www.arb.ca.gov/adam/ welcome.html (accessed January 29, 2009).

California Building Standards Commission (CBSC). 2007. Published July 2007; effective January 1, 2008. *California Fire Code, California Code of Regulations, Title 24, Part 9, California Building Standards Commission*. Sacramento, California.

California Climate Action Registry (CCAR). 2008. *General Reporting Protocol*.

California Climate Action Team (CAT). 2009. *Climate Action Team Biennial Report to the Governor and Legislator.*

California Department of Conservation (DOC), Division of Land Resource Protection. 2004. *A Guide to the Farmland Mapping and Monitoring Program*. Sacramento, California.

California Department of Conservation (DOC), Division of Land Resource Protection, Farmland Mapping and Monitoring Program. 2008. *Table A-15, Marin County 2006–08 Land Use Conversion*. Sacramento, California.

California Department of Conservation (DOC). 2010. http://www.conservation.ca.gov/ (accessed January 29, 2010).

5.0 REFERENCES

California Department of Finance (DOF). 2009. *E-5 Population and Housing Estimates for Cities, Counties and the State, 2001–2009, with 2000 Benchmark*. Sacramento, California.

California Department of Forestry and Fire Protection (Cal Fire). 2002. *Table G-29, Area of Timberland and Ownerships in California, 2002*.

California Department of Justice, Office of California Attorney General. 2008. Brown, Edward G., Jr., Attorney General. *The California Environmental Quality Act, Addressing Global Warming Impacts at the Local Agency Level*.

California Department of Resources Recycling and Recovery (Cal Recycle). 2010. http://www.calrecycle.ca.gov/ (accessed February 1, 2010).

California Department of Toxic Substances Control (DTSC). 2010a. http://www.dtsc.ca.gov/ (accessed February 4, 2010.

California Department of Toxic Substances Control (DTSC), Envirostor. 2010b. http://www.envirostor.dtsc.ca.gov/public/ (accessed February 4, 2010).

California Department of Transportation (Caltrans). 2010. http://www.dot.ca.gov/ (accessed February 3, 2010).

California Department of Water Resources (DWR). 2006. *Progress on Incorporating Climate Change Into Management of California Water Resources.*

California Energy Commission (CEC). 2006a. *Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004*. Publication CEC-600-2006-013-D. http://www.energy.ca.gov/ 2006publications/CEC-600-2006-013/CEC-600-2006-013-SF.PDF (accessed June 2007).

California Energy Commission (CEC). 2006b. *Climate Change Portal*. Last update December 22, 2006. http://www.climatechange.ca.gov (accessed January 2010).

California Energy Commission (CEC). 2006c. *Our Changing Climate: Assessing the Risks to California.* Publication CEC-500-2006-077.

California Energy Commission (CEC). 2007. *Revisions to the 1990 to 2004 Greenhouse Gas Emissions Inventory Report, Published in December 2006 (CEC-600-2006-013)*.

California Energy Commission (CEC). 2008. *Update to the Greenhouse Gas Inventory*. http://www.climatechange.ca.gov/policies/greenhouse_gas_inventory/index.html (accessed January 18, 2008).

California Energy Commission (CEC). 2010. http://www.energy.ca.gov/ (accessed February 3, 2010).

California Environmental Protection Agency (Cal/EPA). 2007a. *2006 State Area Designation Maps*. Effective as of July 26, 2008. http://www.arb.ca.gov/desig/adm/adm.htm (accessed July 31, 2008).

California Environmental Protection Agency (Cal/EPA). 2007b. *FAQS Frequently Asked Questions About Global Climate Change*. http://www.climatechange.ca.gov/background/ faqs.html.

California Governor's Office of Planning and Research. 2008. *OPR Technical Advisory on CEQA and Climate Change.*

California Regional Water Quality Control Board (CRWQCB), San Francisco Bay Region. 2009. *Staff Report, Evaluation of Water Quality Conditions For the San Francisco Bay Region, Proposed Revisions to Section 303(d) List*.

California Regional Water Quality Control Board (CRWQCB), San Francisco Bay Region. *San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan)*. Oakland, California.

California State Water Resources Control Board (SWRCB). 2007. *2006 CWA 303(d) List of Water Quality Limited Segments*.

California State Water Resources Control Board (SWRCB). 2010a. http://www.waterboards.ca.gov/ (accessed February 7, 2010).

California State Water Resources Control Board (SWRCB), Geotracker. 2010b. http://geotracker.swrcb.ca.gov/ (accessed February 4, 2010).

City of Belvedere. 2009a. *City of Belvedere Draft Housing Element.*

City of Belvedere. 2009b. *City of Belvedere Snapshot Workbook.*

City of Belvedere. 2009c. *Sustainable Belvedere, Greenhouse Gas Emissions Inventory, Municipal and Community Scale Analysis, Baseline Year 2005*.

City of Belvedere. 2010a. *City of Belvedere City Stats.*

City of Belvedere. 2010b. *City of Belvedere General Plan Update, Land Use Element.*

City of Belvedere. 2010c. *City of Belvedere General Plan Update, Community Design Element.*

County of Marin. Snyder and Wilson Engineering, Inc. Nichols Berman Environmental Planning. 2005a. *Marin Countywide Plan Geology, Mineral Resources and Hazardous Materials Technical Background Report*. San Rafael, California.

County of Marin. Clearwater Hydrology. Nichols Berman Environmental Planning. 2005b. *Marin Countywide Plan Hydrology and Water Quality Technical Background Report*. San Rafael, California.

County of Marin, Community Development Agency. Nichols Berman Environmental Planning. 2007. *Marin Countywide Plan Update Draft Environmental Impact Report, SC No. 2004022076*.

County of Marin, Department of Public Works, Waste Management Division. 2008. *County of Marin Hazardous Materials Area Plan*.

County of Marin. 2010. http://www.CD.marin.ca.us/ (accessed February 7, 2010).

Crane Transportation Group. 2009. *Crane Transportation Group Input to Belvedere Circulation Element.*

ENGEO Incorporated. 2009. *Geologic Hazards and Mitigation Measures: General Plan Update Belvedere, California.*

EOA, Inc. 2005. Prepared for Marin County Stormwater Pollution Prevention Program, Marin County Department of Public Works. *Marin County Stormwater Pollution Prevention Program, Action Plan 2010, Stormwater Management Plan*. Oakland, California.

Frick, John. Business Manager, Reed Union School District. February 10, 2010. Personal Communication (Phone Conversation) with Melanie Ware, Environmental Planner, PMC.

Gleick, Peter. 1997. American Water Works Association (AWWA). Climate change and water resources. *Journal of the American Water Works Association*, Vol. 89, No. 11, pp. 107–110.

Intergovernmental Panel of Climate Change (IPCC). 2007. *National Greenhouse Gas Inventories Programme*. http://www.ipcc-nggip.iges.or.jp/ (accessed June 2007).

Kiparsky, M. and P. H. Gleick. 2003. *Climate Change and California Water Resources: A Survey and Summary of the Literature*. Oakland, CA: Pacific Institute for Studies in Development.

Kiparsky, 2003. op. cit; DWR, 2005. op. cit.; Cayan, D., et al, 2006. Scenarios of Climate Change in California: An Overview (White Paper, CEC-500-2005-203-SF), Sacramento, CA. February.

Lazarone, Jim. Mill Valley Refuse Service. 2010. Personal Communication (Phone Conversation) with Melanie Ware, Environmental Planner, PMC, on February 16.

Lynch, Ed. Battalion Chief of Operations, Tiburon Fire Protection District. 2010. Personal Communication (Phone Conversation) with Melanie Ware, Environmental Planner, PMC, on February 10.

Lynch, Robert. District Manager, Sanitary District No. 5 of Marin County. 2010. Personal Communication (Phone Conversation) with Melanie Ware, Environmental Planner, PMC, on February 11.

Marin Hazardous and Solid Waste Joint Powers Authority (JPA). 2010. http://www.marinrecycles.org/ (accessed February 7, 2010).

Marin Municipal Water District (MMWD). 2006a. *Marin Municipal Water District, Urban Water Management Plan 2005*.

Marin Municipal Water District (MMWD). 2006b. *Marin Municipal Water District, Long Range Capital Program (2006–2015) Summary*.

Marin Municipal Water District (MMWD). 2010. http://www.marinwater.org/ (accessed February 1, 2010).

Miller, Tyler G. 2000. *Living In the Environment, 11th Edition*. Thomson Learning.

National Aeronautical and Space Administration (NASA). 2007. *NASA Facts Online*. http://www.gsfc.nasa.gov/gsfc/service/gallery/fact_sheets/earthsci/green.htm (accessed June 2007).

Parrish, Lori. Assistant Superintendent, Tamalpais Union High School District. 2010. Personal Communication (Phone Conversation) with Melanie Ware, Environmental Planner, PMC, on February 16.

Pool, Chris. Police Sergeant, City of Belvedere Police Department. 2010. Personal Communication (Phone Conversation) with Melanie Ware, Environmental Planner, PMC, on February 10.

Redwood Landfill and Recycling Center. 2010. http://www.redwoodlandfill.com/ (accessed February 11, 2010)

Reed Union School District (RUSD). 2010. http://www.reedschools.org/ (accessed February 10, 2010).

San Francisco Bay Conservation and Development Commission (BCDC). 2009a. (April) Draft Staff Report. *Living with a Rising Bay: Vulnerability and Adaptation in San Francisco Bay and on its Shoreline*. http://www.bcdc.ca.gov/proposed_bay_plan/bp_1-08_cc_draft.pdf (accessed June 5, 2009).

San Francisco Bay Conservation Development Commission (BCDC). 2009b. *Sea Level Rise 2050 and 2099 Inundation Forecast Maps for the Central Bay Area.*

Tiburon Fire Protection District (TFPD). 2010. http://www.tiburonfire.org/default.aspx (accessed February 10, 2010).

Town of Tiburon 2020 General Plan Draft EIR, Tiburon September 2005.

Tholen, Greg. Bay Area Air Quality Management District. 2010. Personal Communication (phone conversation) with Seth Myers, Environmental Planner, PMC, on January 28.

Transportation Authority of Marin. 2009. *Marin Congestion Management Program*.

U.S. Environmental Protection Agency (USEPA). 2009. Waste Reduction Model (WARM), http://www.epa.gov/climatechange/wycd/waste/calculators/Warm_home.html (accessed April 7, 2009).

United States Environmental Protection Agency (USEPA). 2010. http://www.epa.gov (accessed February 7, 2010).

William Roop and Sally Evans Archeaological Resource Service (Roop & Evans). 2009. *An Evaluation of Cultural Resources and a Legislative Overview for the City of Belvedere, Marin County, California.*

WRA Environmental Consultants. 2008. *Biological Technical Report: City of Belvedere General Plan Update*. San Rafael, California.

APPENDICES

APPENDIX A – AIR QUALITY MODELING

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\smyers\Application Data\Urbemis\Version9a\Projects\Belvedere General Plan - 2010 Conditions.urb924

Project Name: City of Belvedere General Plan Update - 2010 Conditions

Project Location: Bay Area Air District

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.17	0.09	1.59	0.00	0.01	0.01	84.69

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	14.57	19.36	170.78	0.14	28.01	5.33	15,003.38

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	14.74	19.45	172.37	0.14	28.02	5.34	15,088.07

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.00	0.07	0.06	0.00	0.00	0.00	81.91
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscape	0.12	0.02	1.53	0.00	0.01	0.01	2.78
Consumer Products	0.00						
Architectural Coatings	0.05						
TOTALS (tons/year, unmitigated)	0.17	0.09	1.59	0.00	0.01	0.01	84.69

Area Source Changes to Defaults

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Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Regnl shop. center	0.29	0.41	3.64	0.00	0.60	0.11	320.00
Hardware/paint store	0.34	0.49	4.35	0.00	0.71	0.14	382.22
Supermarket	0.68	0.98	8.67	0.01	1.42	0.27	761.91
Bank (with drive-through)	1.62	2.37	20.90	0.02	3.43	0.65	1,836.89
General office building	0.17	0.23	2.09	0.00	0.34	0.06	180.99
Office park	0.19	0.25	2.25	0.00	0.36	0.07	194.63
Very Low Density Single Family Residential	5.18	6.80	59.91	0.05	9.83	1.87	5,265.59
Low Density Single Family Residential	3.86	5.07	44.63	0.04	7.32	1.40	3,922.45
Low Density Multi-Family Residential	0.64	0.81	7.12	0.01	1.17	0.22	625.61
Medium Density Multi-Family Residential	1.39	1.70	14.98	0.01	2.46	0.47	1,316.35
High Density Multi-Family Residential	0.21	0.25	2.24	0.00	0.37	0.07	196.74
TOTALS (tons/year, unmitigated)	14.57	19.36	170.78	0.14	28.01	5.33	15,003.38

Operational Settings:

Does not Include correction for passby trips

Does not Include double counting adjustment for internal trips

Analysis Year: 2011 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Regnl shop. center		42.94	1000 sq ft	6.00	257.64	1,904.73
Hardware/paint store		51.29	1000 sq ft	6.00	307.74	2,275.12
Supermarket		102.24	1000 sq ft	6.00	613.44	4,535.16
Bank (with drive-through)		246.49	1000 sq ft	6.00	1,478.94	10,933.80
General office building		11.01	1000 sq ft	12.00	132.12	1,070.50
Office park		11.42	1000 sq ft	12.00	137.04	1,148.67
Very Low Density Single Family Residential		9.57	unknown	443.00	4,239.51	31,342.70
Low Density Single Family Residential		9.57	unknown	330.00	3,158.10	23,347.83
Low Density Multi-Family Residential		6.90	unknown	73.00	503.70	3,723.85
Medium Density Multi-Family Residential		5.76	unknown	184.00	1,059.84	7,835.40
High Density Multi-Family Residential		5.28	unknown	30.00	158.40	1,171.05
					12,046.47	89,288.81

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	53.8	0.9	98.7	0.4
Light Truck < 3750 lbs	12.8	1.6	95.3	3.1
Light Truck 3751-5750 lbs	19.8	0.5	99.5	0.0
Med Truck 5751-8500 lbs	6.6	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.9	0.0	77.8	22.2
Lite-Heavy Truck 10,001-14,000 lbs	0.6	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Heavy-Heavy Truck 33,001-60,000 lbs	0.4	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	3.2	62.5	37.5	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.6	0.0	83.3	16.7

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Regnl shop. center				2.0	1.0	97.0
Hardware/paint store				2.0	1.0	97.0
Supermarket				2.0	1.0	97.0
Bank (with drive-through)				2.0	1.0	97.0
General office building				35.0	17.5	47.5
Office park				48.0	24.0	28.0

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Very Low Density Single Family Residential				2.0	1.0	97.0
Low Density Single Family Residential				2.0	1.0	97.0
Low Density Multi-Family Residential				2.0	1.0	97.0
Medium Density Multi-Family Residential				2.0	1.0	97.0
High Density Multi-Family Residential				2.0	1.0	97.0

2/2/2010 8:48:53 AM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\smyers\Application Data\Urbemis\Version9a\Projects\Belvedere General Plan - 2010 Conditions.urb924

Project Name: City of Belvedere General Plan Update - 2010 Conditions

Project Location: Bay Area Air District

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	1.66	0.60	17.31	0.00	0.06	0.06	479.70

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	77.48	91.36	909.07	0.85	153.41	29.26	86,103.21

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	79.14	91.96	926.38	0.85	153.47	29.32	86,582.91

2/2/2010 8:48:53 AM

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.03	0.37	0.31	0.00	0.00	0.00	448.80
Hearth - No Summer Emissions							
Landscape	1.35	0.23	17.00	0.00	0.06	0.06	30.90
Consumer Products	0.00						
Architectural Coatings	0.28						
TOTALS (lbs/day, unmitigated)	1.66	0.60	17.31	0.00	0.06	0.06	479.70

Area Source Changes to Defaults

2/2/2010 8:48:53 AM

Operational Unmitigated Detail Report

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Regnl shop. center	1.47	1.95	19.38	0.02	3.27	0.62	1,836.45
Hardware/paint store	1.75	2.33	23.14	0.02	3.91	0.75	2,193.56
Supermarket	3.42	4.64	46.14	0.04	7.79	1.49	4,372.58
Bank (with drive-through)	8.17	11.19	111.23	0.10	18.79	3.58	10,541.83
General office building	0.92	1.09	11.19	0.01	1.84	0.35	1,038.40
Office park	0.99	1.17	12.12	0.01	1.97	0.38	1,116.56
Very Low Density Single Family Residential	27.74	32.07	318.85	0.30	53.85	10.27	30,219.08
Low Density Single Family Residential	20.67	23.89	237.52	0.22	40.12	7.65	22,510.82
Low Density Multi-Family Residential	3.50	3.81	37.88	0.04	6.40	1.22	3,590.36
Medium Density Multi-Family Residential	7.68	8.02	79.71	0.08	13.46	2.57	7,554.50
High Density Multi-Family Residential	1.17	1.20	11.91	0.01	2.01	0.38	1,129.07
TOTALS (lbs/day, unmitigated)	77.48	91.36	909.07	0.85	153.41	29.26	86,103.21

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2011 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Regnl shop. center		42.94	1000 sq ft	6.00	257.64	1,904.73
Hardware/paint store		51.29	1000 sq ft	6.00	307.74	2,275.12
Supermarket		102.24	1000 sq ft	6.00	613.44	4,535.16
Bank (with drive-through)		246.49	1000 sq ft	6.00	1,478.94	10,933.80
General office building		11.01	1000 sq ft	12.00	132.12	1,070.50
Office park		11.42	1000 sq ft	12.00	137.04	1,148.67
Very Low Density Single Family Residential		9.57	unknown	443.00	4,239.51	31,342.70
Low Density Single Family Residential		9.57	unknown	330.00	3,158.10	23,347.83
Low Density Multi-Family Residential		6.90	unknown	73.00	503.70	3,723.85
Medium Density Multi-Family Residential		5.76	unknown	184.00	1,059.84	7,835.40
High Density Multi-Family Residential		5.28	unknown	30.00	158.40	1,171.05
					12,046.47	89,288.81

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	53.8	0.9	98.7	0.4
Light Truck < 3750 lbs	12.8	1.6	95.3	3.1
Light Truck 3751-5750 lbs	19.8	0.5	99.5	0.0
Med Truck 5751-8500 lbs	6.6	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.9	0.0	77.8	22.2
Lite-Heavy Truck 10,001-14,000 lbs	0.6	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Heavy-Heavy Truck 33,001-60,000 lbs	0.4	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	3.2	62.5	37.5	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.6	0.0	83.3	16.7

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Regnl shop. center				2.0	1.0	97.0
Hardware/paint store				2.0	1.0	97.0
Supermarket				2.0	1.0	97.0
Bank (with drive-through)				2.0	1.0	97.0
General office building				35.0	17.5	47.5
Office park				48.0	24.0	28.0

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Very Low Density Single Family Residential				2.0	1.0	97.0
Low Density Single Family Residential				2.0	1.0	97.0
Low Density Multi-Family Residential				2.0	1.0	97.0
Medium Density Multi-Family Residential				2.0	1.0	97.0
High Density Multi-Family Residential				2.0	1.0	97.0

2/2/2010 8:53:50 AM

Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\smyers\Application Data\Urbemis\Version9a\Projects\Belvedere General Plan - 2010 Conditions.urb924

Project Name: City of Belvedere General Plan Update - 2010 Conditions

Project Location: Bay Area Air District

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.31	0.37	0.31	0.00	0.00	0.00	448.80

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	84.66	135.83	989.00	0.75	153.41	29.26	74,424.51

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	84.97	136.20	989.31	0.75	153.41	29.26	74,873.31

2/2/2010 8:53:50 AM

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.03	0.37	0.31	0.00	0.00	0.00	448.80
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping - No Winter Emissions							
Consumer Products	0.00						
Architectural Coatings	0.28						
TOTALS (lbs/day, unmitigated)	0.31	0.37	0.31	0.00	0.00	0.00	448.80

Area Source Changes to Defaults

2/2/2010 8:53:50 AM

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Regnl shop. center	1.81	2.90	21.10	0.02	3.27	0.62	1,587.32
Hardware/paint store	2.16	3.46	25.20	0.02	3.91	0.75	1,895.98
Supermarket	4.30	6.90	50.23	0.04	7.79	1.49	3,779.39
Bank (with drive-through)	10.37	16.63	121.09	0.09	18.79	3.58	9,111.72
General office building	1.00	1.63	11.90	0.01	1.84	0.35	898.38
Office park	1.07	1.74	12.78	0.01	1.97	0.38	966.32
Very Low Density Single Family Residential	29.73	47.68	347.13	0.26	53.85	10.27	26,119.55
Low Density Single Family Residential	22.15	35.52	258.58	0.19	40.12	7.65	19,457.00
Low Density Multi-Family Residential	3.53	5.67	41.24	0.03	6.40	1.22	3,103.29
Medium Density Multi-Family Residential	7.43	11.92	86.78	0.07	13.46	2.57	6,529.66
High Density Multi-Family Residential	1.11	1.78	12.97	0.01	2.01	0.38	975.90
TOTALS (lbs/day, unmitigated)	84.66	135.83	989.00	0.75	153.41	29.26	74,424.51

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2011 Temperature (F): 40 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Regnl shop. center		42.94	1000 sq ft	6.00	257.64	1,904.73
Hardware/paint store		51.29	1000 sq ft	6.00	307.74	2,275.12
Supermarket		102.24	1000 sq ft	6.00	613.44	4,535.16
Bank (with drive-through)		246.49	1000 sq ft	6.00	1,478.94	10,933.80
General office building		11.01	1000 sq ft	12.00	132.12	1,070.50
Office park		11.42	1000 sq ft	12.00	137.04	1,146.67
Very Low Density Single Family Residential		9.57	unknown	443.00	4,239.51	31,342.70
Low Density Single Family Residential		9.57	unknown	330.00	3,158.10	23,347.83
Low Density Multi-Family Residential		6.90	unknown	73.00	503.70	3,723.85
Medium Density Multi-Family Residential		5.76	unknown	184.00	1,059.84	7,835.40
High Density Multi-Family Residential		5.28	unknown	30.00	158.40	1,171.05
					12,046.47	89,288.81

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	53.8	0.9	98.7	0.4
Light Truck < 3750 lbs	12.8	1.6	95.3	3.1
Light Truck 3751-5750 lbs	19.8	0.5	99.5	0.0
Med Truck 5751-8500 lbs	6.6	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.9	0.0	77.8	22.2
Lite-Heavy Truck 10,001-14,000 lbs	0.6	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Heavy-Heavy Truck 33,001-60,000 lbs	0.4	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	3.2	62.5	37.5	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.6	0.0	83.3	16.7

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Regnl shop. center				2.0	1.0	97.0
Hardware/paint store				2.0	1.0	97.0
Supermarket				2.0	1.0	97.0
Bank (with drive-through)				2.0	1.0	97.0
General office building				35.0	17.5	47.5
Office park				48.0	24.0	28.0

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Very Low Density Single Family Residential				2.0	1.0	97.0
Low Density Single Family Residential				2.0	1.0	97.0
Low Density Multi-Family Residential				2.0	1.0	97.0
Medium Density Multi-Family Residential				2.0	1.0	97.0
High Density Multi-Family Residential				2.0	1.0	97.0

2/2/2010 8:50:03 AM

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\smyers\Application Data\Urbemis\Version9a\Projects\Belvedere General Plan - 2020 Conditions.urb924

Project Name: City of Belvedere General Plan Update - 2020 Conditions

Project Location: Bay Area Air District

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.17	0.09	1.59	0.00	0.01	0.01	84.69

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	8.67	9.74	94.73	0.15	30.47	5.75	16,280.91

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	8.84	9.83	96.32	0.15	30.48	5.76	16,365.60

2/2/2010 8:50:03 AM

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.00	0.07	0.06	0.00	0.00	0.00	81.91
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscape	0.12	0.02	1.53	0.00	0.01	0.01	2.78
Consumer Products	0.00						
Architectural Coatings	0.05						
TOTALS (tons/year, unmitigated)	0.17	0.09	1.59	0.00	0.01	0.01	84.69

Area Source Changes to Defaults

2/2/2010 8:50:04 AM

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Regnl shop. center	0.15	0.19	1.85	0.00	0.60	0.11	318.27
Hardware/paint store	0.18	0.23	2.21	0.00	0.71	0.13	380.16
Supermarket	0.36	0.45	4.41	0.01	1.42	0.27	757.79
Bank (with drive-through)	0.86	1.09	10.63	0.02	3.42	0.65	1,826.95
General office building	0.09	0.11	1.06	0.00	0.33	0.06	180.02
Office park	0.10	0.11	1.15	0.00	0.36	0.07	193.59
Low Density Single Family Residential	3.22	3.56	34.58	0.06	11.13	2.10	5,946.44
Medium Density Single Family Residential	2.28	2.53	24.55	0.04	7.90	1.49	4,220.43
High Density Single Family Residential	0.19	0.21	2.06	0.00	0.66	0.13	354.66
Medium Density Multi-Family Residential	1.12	1.14	11.09	0.02	3.57	0.67	1,906.93
High Density Multi-Family Residential	0.12	0.12	1.14	0.00	0.37	0.07	195.67
TOTALS (tons/year, unmitigated)	8.67	9.74	94.73	0.15	30.47	5.75	16,280.91

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2020 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Regnl shop. center		42.94	1000 sq ft	6.00	257.64	1,904.73
Hardware/paint store		51.29	1000 sq ft	6.00	307.74	2,275.12
Supermarket		102.24	1000 sq ft	6.00	613.44	4,535.16
Bank (with drive-through)		246.49	1000 sq ft	6.00	1,478.94	10,933.80
General office building		11.01	1000 sq ft	12.00	132.12	1,070.50
Office park		11.42	1000 sq ft	12.00	137.04	1,148.67
Low Density Single Family Residential		9.57	unknown	503.00	4,813.71	35,587.76
Medium Density Single Family Residential		9.57	unknown	357.00	3,416.49	25,258.11
High Density Single Family Residential		9.57	unknown	30.00	287.10	2,122.53
Medium Density Multi-Family Residential		5.76	unknown	268.00	1,543.68	11,412.43
High Density Multi-Family Residential		5.28	unknown	30.00	158.40	1,171.05
					13,146.30	97,419.86

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.0	0.0	100.0	0.0
Light Truck < 3750 lbs	12.6	0.0	98.4	1.6
Light Truck 3751-5750 lbs	19.9	0.0	100.0	0.0
Med Truck 5751-8500 lbs	6.6	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.9	0.0	77.8	22.2
Lite-Heavy Truck 10,001-14,000 lbs	0.6	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Heavy-Heavy Truck 33,001-60,000 lbs	0.3	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	3.2	40.6	59.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.6	0.0	83.3	16.7

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Regnl shop. center				2.0	1.0	97.0
Hardware/paint store				2.0	1.0	97.0
Supermarket				2.0	1.0	97.0
Bank (with drive-through)				2.0	1.0	97.0
General office building				35.0	17.5	47.5
Office park				48.0	24.0	28.0

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Low Density Single Family Residential				2.0	1.0	97.0
Medium Density Single Family Residential				2.0	1.0	97.0
High Density Single Family Residential				2.0	1.0	97.0
Medium Density Multi-Family Residential				2.0	1.0	97.0
High Density Multi-Family Residential				2.0	1.0	97.0

2/2/2010 8:49:47 AM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\smyers\Application Data\Urbemis\Version9a\Projects\Belvedere General Plan - 2020 Conditions.urb924

Project Name: City of Belvedere General Plan Update - 2020 Conditions

Project Location: Bay Area Air District

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	1.66	0.60	17.31	0.00	0.06	0.06	479.70

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	47.38	45.93	510.28	0.92	166.97	31.57	93,588.85

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	49.04	46.53	527.59	0.92	167.03	31.63	94,068.55

2/2/2010 8:49:47 AM

Area Source Unmitigated Detail Report

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.03	0.37	0.31	0.00	0.00	0.00	448.80
Hearth - No Summer Emissions							
Landscape	1.35	0.23	17.00	0.00	0.06	0.06	30.90
Consumer Products	0.00						
Architectural Coatings	0.28						
TOTALS (lbs/day, unmitigated)	1.66	0.60	17.31	0.00	0.06	0.06	479.70

Area Source Changes to Defaults

2/2/2010 8:49:47 AM

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Regnl shop. center	0.80	0.90	9.97	0.02	3.26	0.62	1,829.53
Hardware/paint store	0.95	1.07	11.91	0.02	3.90	0.74	2,185.29
Supermarket	1.85	2.14	23.74	0.04	7.77	1.47	4,356.10
Bank (with drive-through)	4.41	5.16	57.23	0.10	18.74	3.54	10,502.11
General office building	0.51	0.50	5.76	0.01	1.84	0.35	1,034.51
Office park	0.54	0.54	6.24	0.01	1.97	0.37	1,112.39
Low Density Single Family Residential	17.67	16.78	186.26	0.34	60.99	11.53	34,182.67
Medium Density Single Family Residential	12.54	11.91	132.20	0.24	43.29	8.18	24,260.86
High Density Single Family Residential	1.05	1.00	11.11	0.02	3.64	0.69	2,038.73
Medium Density Multi-Family Residential	6.39	5.38	59.73	0.11	19.56	3.70	10,961.84
High Density Multi-Family Residential	0.67	0.55	6.13	0.01	2.01	0.38	1,124.82
TOTALS (lbs/day, unmitigated)	47.38	45.93	510.28	0.92	166.97	31.57	93,588.85

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2020 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Regnl shop. center		42.94	1000 sq ft	6.00	257.64	1,904.73
Hardware/paint store		51.29	1000 sq ft	6.00	307.74	2,275.12
Supermarket		102.24	1000 sq ft	6.00	613.44	4,535.16
Bank (with drive-through)		246.49	1000 sq ft	6.00	1,478.94	10,933.80
General office building		11.01	1000 sq ft	12.00	132.12	1,070.50
Office park		11.42	1000 sq ft	12.00	137.04	1,148.67
Low Density Single Family Residential		9.57	unknown	503.00	4,813.71	35,587.76
Medium Density Single Family Residential		9.57	unknown	357.00	3,416.49	25,258.11
High Density Single Family Residential		9.57	unknown	30.00	287.10	2,122.53
Medium Density Multi-Family Residential		5.76	unknown	268.00	1,543.68	11,412.43
High Density Multi-Family Residential		5.28	unknown	30.00	158.40	1,171.05
					13,146.30	97,419.86

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.0	0.0	100.0	0.0
Light Truck < 3750 lbs	12.6	0.0	98.4	1.6
Light Truck 3751-5750 lbs	19.9	0.0	100.0	0.0
Med Truck 5751-8500 lbs	6.6	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.9	0.0	77.8	22.2
Lite-Heavy Truck 10,001-14,000 lbs	0.6	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Heavy-Heavy Truck 33,001-60,000 lbs	0.3	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	3.2	40.6	59.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.6	0.0	83.3	16.7

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Regnl shop. center				2.0	1.0	97.0
Hardware/paint store				2.0	1.0	97.0
Supermarket				2.0	1.0	97.0
Bank (with drive-through)				2.0	1.0	97.0
General office building				35.0	17.5	47.5
Office park				48.0	24.0	28.0

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Low Density Single Family Residential				2.0	1.0	97.0
Medium Density Single Family Residential				2.0	1.0	97.0
High Density Single Family Residential				2.0	1.0	97.0
Medium Density Multi-Family Residential				2.0	1.0	97.0
High Density Multi-Family Residential				2.0	1.0	97.0

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\smyers\Application Data\Urbemis\Version9a\Projects\Belvedere General Plan - 2020 Conditions.urb924

Project Name: City of Belvedere General Plan Update - 2020 Conditions

Project Location: Bay Area Air District

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.31	0.37	0.31	0.00	0.00	0.00	448.80

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	48.03	68.44	536.53	0.81	166.97	31.57	80,453.48

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	48.34	68.81	536.84	0.81	166.97	31.57	80,902.28

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.03	0.37	0.31	0.00	0.00	0.00	448.80
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping - No Winter Emissions							
Consumer Products	0.00						
Architectural Coatings	0.28						
TOTALS (lbs/day, unmitigated)	0.31	0.37	0.31	0.00	0.00	0.00	448.80

Area Source Changes to Defaults

2/2/2010 8:53:18 AM

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Regnl shop. center	0.94	1.34	10.49	0.02	3.28	0.62	1,572.71
Hardware/paint store	1.12	1.60	12.53	0.02	3.90	0.74	1,878.53
Supermarket	2.24	3.19	24.97	0.04	7.77	1.47	3,744.62
Bank (with drive-through)	5.39	7.68	60.21	0.09	18.74	3.54	9,027.88
General office building	0.52	0.75	5.92	0.01	1.84	0.35	890.17
Office park	0.66	0.80	6.37	0.01	1.97	0.37	957.51
Low Density Single Family Residential	17.55	25.00	195.97	0.29	60.99	11.53	29,384.28
Medium Density Single Family Residential	12.45	17.75	139.09	0.21	43.29	8.18	20,855.25
High Density Single Family Residential	1.05	1.49	11.69	0.02	3.64	0.69	1,752.54
Medium Density Multi-Family Residential	5.63	8.02	62.84	0.09	19.56	3.70	9,423.07
High Density Multi-Family Residential	0.58	0.82	6.45	0.01	2.01	0.38	966.92
TOTALS (lbs/day, unmitigated)	48.03	68.44	536.53	0.81	166.97	31.57	80,453.48

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2020 Temperature (F): 40 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Regnl shop. center		42.94	1000 sq ft	6.00	257.64	1,904.73
Hardware/paint store		51.29	1000 sq ft	6.00	307.74	2,275.12
Supermarket		102.24	1000 sq ft	6.00	613.44	4,535.16
Bank (with drive-through)		246.49	1000 sq ft	6.00	1,478.94	10,933.80
General office building		11.01	1000 sq ft	12.00	132.12	1,070.50
Office park		11.42	1000 sq ft	12.00	137.04	1,148.67
Low Density Single Family Residential		9.57	unknown	503.00	4,813.71	35,587.76
Medium Density Single Family Residential		9.57	unknown	357.00	3,416.49	25,258.11
High Density Single Family Residential		9.57	unknown	30.00	287.10	2,122.53
Medium Density Multi-Family Residential		5.76	unknown	268.00	1,543.68	11,412.43
High Density Multi-Family Residential		5.28	unknown	30.00	158.40	1,171.05
					13,146.30	97,419.86

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.0	0.0	100.0	0.0
Light Truck < 3750 lbs	12.6	0.0	98.4	1.6
Light Truck 3751-5750 lbs	19.9	0.0	100.0	0.0
Med Truck 5751-8500 lbs	6.6	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.9	0.0	77.8	22.2
Lite-Heavy Truck 10,001-14,000 lbs	0.6	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Heavy-Heavy Truck 33,001-60,000 lbs	0.3	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	3.2	40.6	59.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.6	0.0	83.3	16.7

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Regnl shop. center				2.0	1.0	97.0
Hardware/paint store				2.0	1.0	97.0
Supermarket				2.0	1.0	97.0
Bank (with drive-through)				2.0	1.0	97.0
General office building				35.0	17.5	47.5
Office park				48.0	24.0	28.0

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Low Density Single Family Residential				2.0	1.0	97.0
Medium Density Single Family Residential				2.0	1.0	97.0
High Density Single Family Residential				2.0	1.0	97.0
Medium Density Multi-Family Residential				2.0	1.0	97.0
High Density Multi-Family Residential				2.0	1.0	97.0

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\smyers\Application Data\Urbemis\Version9a\Projects\Belvedere - Typical One Acre Res Project.urb924

Project Name: Belvedere General Plan Update - Typical One Acre Project

Project Location: Bay Area Air District

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010 TOTALS (tons/year unmitigated)	0.04	0.33	0.18	0.00	0.06	0.02	0.08	0.01	0.02	0.03	30.56
2010 TOTALS (tons/year mitigated)	0.04	0.33	0.18	0.00	0.01	0.02	0.03	0.00	0.02	0.02	30.56
Percent Reduction	0.00	0.00	0.00	0.00	77.22	0.00	60.12	77.15	0.00	34.26	0.00
2011 TOTALS (tons/year unmitigated)	0.19	0.81	0.49	0.00	0.02	0.05	0.07	0.00	0.05	0.05	88.35
2011 TOTALS (tons/year mitigated)	0.19	0.81	0.49	0.00	0.00	0.05	0.06	0.00	0.05	0.05	88.35
Percent Reduction	0.00	0.00	0.00	0.00	76.19	0.00	19.61	75.40	0.00	5.55	0.00

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

2010	0.04	0.33	0.18	0.00	0.06	0.02	0.08	0.01	0.02	0.03	30.56
Fine Grading 11/30/2010-01/11/2011	0.04	0.30	0.16	0.00	0.06	0.02	0.08	0.01	0.01	0.03	28.19
Fine Grading Dust	0.00	0.00	0.00	0.00	0.06	0.00	0.06	0.01	0.00	0.01	0.00
Fine Grading Off Road Diesel	0.04	0.30	0.15	0.00	0.00	0.01	0.01	0.00	0.01	0.01	26.97
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.22
Asphalt 12/28/2010-01/11/2011	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.37
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.96
Paving On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
Paving Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36

2011	0.19	0.81	0.49	0.00	0.02	0.05	0.07	0.00	0.05	0.05	88.35
Asphalt 12/28/2010-01/11/2011	0.01	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.15
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.43
Paving On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62
Fine Grading 11/30/2010-01/11/2011	0.01	0.08	0.05	0.00	0.02	0.00	0.02	0.00	0.00	0.01	8.22
Fine Grading Dust	0.00	0.00	0.00	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.01	0.08	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.87
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36
Building 01/11/2011-08/22/2011	0.09	0.69	0.41	0.00	0.00	0.04	0.04	0.00	0.04	0.04	75.88
Building Off Road Diesel	0.09	0.68	0.37	0.00	0.00	0.04	0.04	0.00	0.04	0.04	71.47
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.89
Building Worker Trips	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.52
Coating 08/08/2011-09/05/2011	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
Architectural Coating	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09

Phase Assumptions

Phase: Fine Grading 11/30/2010 - 1/11/2011 - Default Fine Site Grading Description

Total Acres Disturbed: 1

Maximum Daily Acreage Disturbed: 0.25

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

3/9/2010 11:17:58 AM

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 12/28/2010 - 1/11/2011 - Default Paving Description

Acres to be Paved: 0.25

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 1/11/2011 - 8/22/2011 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 8/8/2011 - 9/5/2011 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

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CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010	0.04	0.33	0.18	0.00	0.01	0.02	0.03	0.00	0.02	0.02	30.56
Fine Grading 11/30/2010-01/11/2011	0.04	0.30	0.16	0.00	0.01	0.02	0.03	0.00	0.01	0.02	28.19
Fine Grading Dust	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.04	0.30	0.15	0.00	0.00	0.01	0.01	0.00	0.01	0.01	26.97
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.22
Asphalt 12/28/2010-01/11/2011	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.37
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.96
Paving On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
Paving Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36

2011	0.19	0.81	0.49	0.00	0.00	0.05	0.06	0.00	0.05	0.05	88.35
Asphalt 12/28/2010-01/11/2011	0.01	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.15
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.43
Paving On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62
Fine Grading 11/30/2010-01/11/2011	0.01	0.08	0.05	0.00	0.00	0.00	0.01	0.00	0.00	0.00	8.22
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.01	0.08	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.87
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36
Building 01/11/2011-08/22/2011	0.09	0.69	0.41	0.00	0.00	0.04	0.04	0.00	0.04	0.04	75.88
Building Off Road Diesel	0.09	0.68	0.37	0.00	0.00	0.04	0.04	0.00	0.04	0.04	71.47
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.89
Building Worker Trips	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.52
Coating 08/08/2011-09/05/2011	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
Architectural Coating	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 11/30/2010 - 1/11/2011 - Default Fine Site Grading Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

3/9/2010 11:17:58 AM

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

3/9/2010 11:17:25 AM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\smyers\Application Data\Urbemis\Version9a\Projects\Belvedere - Typical One Acre Res Project.urb924

Project Name: Belvedere General Plan Update - Typical One Acre Project

Project Location: Bay Area Air District

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010 TOTALS (lbs/day unmitigated)	5.13	37.25	22.69	0.00	5.01	2.29	7.30	1.05	2.11	3.15	3,533.93
2010 TOTALS (lbs/day mitigated)	5.13	37.25	22.69	0.00	1.15	2.29	3.44	0.24	2.11	2.35	3,533.93
2011 TOTALS (lbs/day unmitigated)	8.57	43.61	27.04	0.00	5.02	2.71	7.72	1.05	2.49	3.54	4,482.65
2011 TOTALS (lbs/day mitigated)	8.57	43.61	27.04	0.00	1.15	2.71	3.86	0.24	2.49	2.73	4,482.65

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

Time Slice 11/30/2010-12/27/2010 Active Days: 20	3.04	25.05	13.62	0.00	5.00	1.25	6.26	1.05	1.15	2.20	2,349.23
Fine Grading 11/30/2010-01/11/2011	3.04	25.05	13.62	0.00	5.00	1.25	6.26	1.05	1.15	2.20	2,349.23
Fine Grading Dust	0.00	0.00	0.00	0.00	5.00	0.00	5.00	1.04	0.00	1.04	0.00
Fine Grading Off Road Diesel	3.00	24.99	12.46	0.00	0.00	1.25	1.25	0.00	1.15	1.15	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.04	0.07	1.16	0.00	0.00	0.00	0.01	0.00	0.00	0.00	101.91
Time Slice 12/28/2010-12/31/2010 Active Days: 4	5.13	37.25	22.69	0.00	5.01	2.29	7.30	1.05	2.11	3.15	3,533.93
Asphalt 12/28/2010-01/11/2011	2.09	12.20	9.07	0.00	0.01	1.04	1.05	0.00	0.95	0.96	1,184.70
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.95	11.89	6.98	0.00	0.00	1.03	1.03	0.00	0.94	0.94	979.23
Paving On Road Diesel	0.01	0.19	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	27.13
Paving Worker Trips	0.07	0.11	2.03	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.35
Fine Grading 11/30/2010-01/11/2011	3.04	25.05	13.62	0.00	5.00	1.25	6.26	1.05	1.15	2.20	2,349.23
Fine Grading Dust	0.00	0.00	0.00	0.00	5.00	0.00	5.00	1.04	0.00	1.04	0.00
Fine Grading Off Road Diesel	3.00	24.99	12.46	0.00	0.00	1.25	1.25	0.00	1.15	1.15	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.04	0.07	1.16	0.00	0.00	0.00	0.01	0.00	0.00	0.00	101.91

Time Slice 1/3/2011-1/10/2011 Active Days: 6	4.82	35.03	21.86	0.00	5.01	2.16	7.18	1.05	1.99	3.04	3,534.10
Asphalt 12/28/2010-01/11/2011	1.96	11.53	8.84	0.00	0.01	0.99	1.00	0.00	0.91	0.91	1,184.81
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.83	11.26	6.91	0.00	0.00	0.98	0.98	0.00	0.90	0.90	979.23
Paving On Road Diesel	0.01	0.17	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	27.13
Paving Worker Trips	0.06	0.10	1.87	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.46
Fine Grading 11/30/2010-01/11/2011	2.86	23.50	13.03	0.00	5.00	1.17	6.18	1.05	1.08	2.13	2,349.29
Fine Grading Dust	0.00	0.00	0.00	0.00	5.00	0.00	5.00	1.04	0.00	1.04	0.00
Fine Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.06	1.07	0.00	0.00	0.00	0.01	0.00	0.00	0.00	101.97

Time Slice 1/11/2011-1/11/2011 Active Days: 1	5.95	43.61	27.04	0.00	5.02	2.71	7.72	1.05	2.49	3.54	4,482.65
Asphalt 12/28/2010-01/11/2011	1.96	11.53	8.84	0.00	0.01	0.99	1.00	0.00	0.91	0.91	1,184.81
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.83	11.26	6.91	0.00	0.00	0.98	0.98	0.00	0.90	0.90	979.23
Paving On Road Diesel	0.01	0.17	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	27.13
Paving Worker Trips	0.06	0.10	1.87	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.46
Building 01/11/2011-08/22/2011	1.13	8.58	5.18	0.00	0.00	0.55	0.55	0.00	0.50	0.50	948.55
Building Off Road Diesel	1.11	8.51	4.68	0.00	0.00	0.54	0.54	0.00	0.50	0.50	893.39
Building Vendor Trips	0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.11
Building Worker Trips	0.01	0.03	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.05
Fine Grading 11/30/2010-01/11/2011	2.86	23.50	13.03	0.00	5.00	1.17	6.18	1.05	1.08	2.13	2,349.29
Fine Grading Dust	0.00	0.00	0.00	0.00	5.00	0.00	5.00	1.04	0.00	1.04	0.00
Fine Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.06	1.07	0.00	0.00	0.00	0.01	0.00	0.00	0.00	101.97
Time Slice 1/12/2011-8/5/2011 Active Days: 148	1.13	8.58	5.18	0.00	0.00	0.55	0.55	0.00	0.50	0.50	948.55
Building 01/11/2011-08/22/2011	1.13	8.58	5.18	0.00	0.00	0.55	0.55	0.00	0.50	0.50	948.55
Building Off Road Diesel	1.11	8.51	4.68	0.00	0.00	0.54	0.54	0.00	0.50	0.50	893.39
Building Vendor Trips	0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.11
Building Worker Trips	0.01	0.03	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.05

Time Slice 8/8/2011-8/22/2011 Active Days: 11	8.57	8.59	5.27	0.00	0.00	0.55	0.55	0.00	0.50	0.50	957.40
Building 01/11/2011-08/22/2011	1.13	8.58	5.18	0.00	0.00	0.55	0.55	0.00	0.50	0.50	948.55
Building Off Road Diesel	1.11	8.51	4.68	0.00	0.00	0.54	0.54	0.00	0.50	0.50	893.39
Building Vendor Trips	0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.11
Building Worker Trips	0.01	0.03	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.05
Coating 08/08/2011-09/05/2011	7.44	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.85
Architectural Coating	7.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.85
Time Slice 8/23/2011-9/5/2011 Active Days: 10	7.44	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.85
Coating 08/08/2011-09/05/2011	7.44	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.85
Architectural Coating	7.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.85

Phase Assumptions

Phase: Fine Grading 11/30/2010 - 1/11/2011 - Default Fine Site Grading Description

Total Acres Disturbed: 1

Maximum Daily Acreage Disturbed: 0.25

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

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Phase: Paving 12/28/2010 - 1/11/2011 - Default Paving Description

Acres to be Paved: 0.25

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 1/11/2011 - 8/22/2011 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 8/8/2011 - 9/5/2011 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

Time Slice 11/30/2010-12/27/2010 Active Days: 20	3.04	25.05	13.62	0.00	1.14	1.25	2.39	0.24	1.15	1.39	2,349.23
Fine Grading 11/30/2010-01/11/2011	3.04	25.05	13.62	0.00	1.14	1.25	2.39	0.24	1.15	1.39	2,349.23
Fine Grading Dust	0.00	0.00	0.00	0.00	1.13	0.00	1.13	0.24	0.00	0.24	0.00
Fine Grading Off Road Diesel	3.00	24.99	12.46	0.00	0.00	1.25	1.25	0.00	1.15	1.15	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.04	0.07	1.16	0.00	0.00	0.00	0.01	0.00	0.00	0.00	101.91
Time Slice 12/28/2010-12/31/2010 Active Days: 4	5.13	37.25	22.69	0.00	1.15	2.29	3.44	0.24	2.11	2.35	3,533.93
Asphalt 12/28/2010-01/11/2011	2.09	12.20	9.07	0.00	0.01	1.04	1.05	0.00	0.95	0.96	1,184.70
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.95	11.89	6.98	0.00	0.00	1.03	1.03	0.00	0.94	0.94	979.23
Paving On Road Diesel	0.01	0.19	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	27.13
Paving Worker Trips	0.07	0.11	2.03	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.35
Fine Grading 11/30/2010-01/11/2011	3.04	25.05	13.62	0.00	1.14	1.25	2.39	0.24	1.15	1.39	2,349.23
Fine Grading Dust	0.00	0.00	0.00	0.00	1.13	0.00	1.13	0.24	0.00	0.24	0.00
Fine Grading Off Road Diesel	3.00	24.99	12.46	0.00	0.00	1.25	1.25	0.00	1.15	1.15	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.04	0.07	1.16	0.00	0.00	0.00	0.01	0.00	0.00	0.00	101.91

Time Slice 1/3/2011-1/10/2011 Active Days: 6	4.82	35.03	21.86	0.00	1.15	2.16	3.31	0.24	1.99	2.23	3,534.10
Asphalt 12/28/2010-01/11/2011	1.96	11.53	8.84	0.00	0.01	0.99	1.00	0.00	0.91	0.91	1,184.81
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.83	11.26	6.91	0.00	0.00	0.98	0.98	0.00	0.90	0.90	979.23
Paving On Road Diesel	0.01	0.17	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	27.13
Paving Worker Trips	0.06	0.10	1.87	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.46
Fine Grading 11/30/2010-01/11/2011	2.86	23.50	13.03	0.00	1.14	1.17	2.31	0.24	1.08	1.32	2,349.29
Fine Grading Dust	0.00	0.00	0.00	0.00	1.13	0.00	1.13	0.24	0.00	0.24	0.00
Fine Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.06	1.07	0.00	0.00	0.00	0.01	0.00	0.00	0.00	101.97

Time Slice 1/11/2011-1/11/2011 Active Days: 1	5.95	43.61	27.04	0.00	1.15	2.71	3.86	0.24	2.49	2.73	4,482.65
Asphalt 12/28/2010-01/11/2011	1.96	11.53	8.84	0.00	0.01	0.99	1.00	0.00	0.91	0.91	1,184.81
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.83	11.26	6.91	0.00	0.00	0.98	0.98	0.00	0.90	0.90	979.23
Paving On Road Diesel	0.01	0.17	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	27.13
Paving Worker Trips	0.06	0.10	1.87	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.46
Building 01/11/2011-08/22/2011	1.13	8.58	5.18	0.00	0.00	0.55	0.55	0.00	0.50	0.50	948.55
Building Off Road Diesel	1.11	8.51	4.68	0.00	0.00	0.54	0.54	0.00	0.50	0.50	893.39
Building Vendor Trips	0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.11
Building Worker Trips	0.01	0.03	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.05
Fine Grading 11/30/2010-01/11/2011	2.86	23.50	13.03	0.00	1.14	1.17	2.31	0.24	1.08	1.32	2,349.29
Fine Grading Dust	0.00	0.00	0.00	0.00	1.13	0.00	1.13	0.24	0.00	0.24	0.00
Fine Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.06	1.07	0.00	0.00	0.00	0.01	0.00	0.00	0.00	101.97
Time Slice 1/12/2011-8/5/2011 Active Days: 148	1.13	8.58	5.18	0.00	0.00	0.55	0.55	0.00	0.50	0.50	948.55
Building 01/11/2011-08/22/2011	1.13	8.58	5.18	0.00	0.00	0.55	0.55	0.00	0.50	0.50	948.55
Building Off Road Diesel	1.11	8.51	4.68	0.00	0.00	0.54	0.54	0.00	0.50	0.50	893.39
Building Vendor Trips	0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.11
Building Worker Trips	0.01	0.03	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.05

Time Slice 8/8/2011-8/22/2011 Active Days: 11	8.57	8.59	5.27	0.00	0.00	0.55	0.55	0.00	0.50	0.50	957.40
Building 01/11/2011-08/22/2011	1.13	8.58	5.18	0.00	0.00	0.55	0.55	0.00	0.50	0.50	948.55
Building Off Road Diesel	1.11	8.51	4.68	0.00	0.00	0.54	0.54	0.00	0.50	0.50	893.39
Building Vendor Trips	0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.11
Building Worker Trips	0.01	0.03	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.05
Coating 08/08/2011-09/05/2011	7.44	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.85
Architectural Coating	7.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.85
Time Slice 8/23/2011-9/5/2011 Active Days: 10	7.44	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.85
Coating 08/08/2011-09/05/2011	7.44	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.85
Architectural Coating	7.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.85

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 11/30/2010 - 1/11/2011 - Default Fine Site Grading Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

3/9/2010 11:18:08 AM

Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\smyers\Application Data\Urbemis\Version9a\Projects\Belvedere - Typical One Acre Res Project.urb924

Project Name: Belvedere General Plan Update - Typical One Acre Project

Project Location: Bay Area Air District

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010 TOTALS (lbs/day unmitigated)	5.13	37.25	22.69	0.00	5.01	2.29	7.30	1.05	2.11	3.15	3,533.93
2010 TOTALS (lbs/day mitigated)	5.13	37.25	22.69	0.00	1.15	2.29	3.44	0.24	2.11	2.35	3,533.93
2011 TOTALS (lbs/day unmitigated)	8.57	43.61	27.04	0.00	5.02	2.71	7.72	1.05	2.49	3.54	4,482.65
2011 TOTALS (lbs/day mitigated)	8.57	43.61	27.04	0.00	1.15	2.71	3.86	0.24	2.49	2.73	4,482.65

3/9/2010 11:17:40 AM

Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\smyers\Application Data\Urbemis\Version9a\Projects\Belvedere - Typical One Acre Res Project.urb924

Project Name: Belvedere General Plan Update - Typical One Acre Project

Project Location: Bay Area Air District

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 11/30/2010-12/27/2010 Active Days: 20	3.04	25.05	13.62	0.00	5.00	1.25	6.26	1.05	1.15	2.20	2,349.23
Fine Grading 11/30/2010-01/11/2011	3.04	25.05	13.62	0.00	5.00	1.25	6.26	1.05	1.15	2.20	2,349.23
Fine Grading Dust	0.00	0.00	0.00	0.00	5.00	0.00	5.00	1.04	0.00	1.04	0.00
Fine Grading Off Road Diesel	3.00	24.99	12.46	0.00	0.00	1.25	1.25	0.00	1.15	1.15	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.04	0.07	1.16	0.00	0.00	0.00	0.01	0.00	0.00	0.00	101.91

Time Slice 12/28/2010-12/31/2010 Active Days: 4	5.13	37.25	22.69	0.00	5.01	2.29	7.30	1.05	2.11	3.15	3,533.93
Asphalt 12/28/2010-01/11/2011	2.09	12.20	9.07	0.00	0.01	1.04	1.05	0.00	0.95	0.96	1,184.70
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.95	11.89	6.98	0.00	0.00	1.03	1.03	0.00	0.94	0.94	979.23
Paving On Road Diesel	0.01	0.19	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	27.13
Paving Worker Trips	0.07	0.11	2.03	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.35
Fine Grading 11/30/2010-01/11/2011	3.04	25.05	13.62	0.00	5.00	1.25	6.26	1.05	1.15	2.20	2,349.23
Fine Grading Dust	0.00	0.00	0.00	0.00	5.00	0.00	5.00	1.04	0.00	1.04	0.00
Fine Grading Off Road Diesel	3.00	24.99	12.46	0.00	0.00	1.25	1.25	0.00	1.15	1.15	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.04	0.07	1.16	0.00	0.00	0.00	0.01	0.00	0.00	0.00	101.91
Time Slice 1/3/2011-1/10/2011 Active Days: 6	4.82	35.03	21.86	0.00	5.01	2.16	7.18	1.05	1.99	3.04	3,534.10
Asphalt 12/28/2010-01/11/2011	1.96	11.53	8.84	0.00	0.01	0.99	1.00	0.00	0.91	0.91	1,184.81
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.83	11.26	6.91	0.00	0.00	0.98	0.98	0.00	0.90	0.90	979.23
Paving On Road Diesel	0.01	0.17	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	27.13
Paving Worker Trips	0.06	0.10	1.87	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.46
Fine Grading 11/30/2010-01/11/2011	2.86	23.50	13.03	0.00	5.00	1.17	6.18	1.05	1.08	2.13	2,349.29
Fine Grading Dust	0.00	0.00	0.00	0.00	5.00	0.00	5.00	1.04	0.00	1.04	0.00
Fine Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.06	1.07	0.00	0.00	0.00	0.01	0.00	0.00	0.00	101.97

Time Slice 1/11/2011-1/11/2011 Active Days: 1	5.95	43.61	27.04	0.00	5.02	2.71	7.72	1.05	2.49	3.54	4,482.65
Asphalt 12/28/2010-01/11/2011	1.96	11.53	8.84	0.00	0.01	0.99	1.00	0.00	0.91	0.91	1,184.81
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.83	11.26	6.91	0.00	0.00	0.98	0.98	0.00	0.90	0.90	979.23
Paving On Road Diesel	0.01	0.17	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	27.13
Paving Worker Trips	0.06	0.10	1.87	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.46
Building 01/11/2011-08/22/2011	1.13	8.58	5.18	0.00	0.00	0.55	0.55	0.00	0.50	0.50	948.55
Building Off Road Diesel	1.11	8.51	4.68	0.00	0.00	0.54	0.54	0.00	0.50	0.50	893.39
Building Vendor Trips	0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.11
Building Worker Trips	0.01	0.03	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.05
Fine Grading 11/30/2010-01/11/2011	2.86	23.50	13.03	0.00	5.00	1.17	6.18	1.05	1.08	2.13	2,349.29
Fine Grading Dust	0.00	0.00	0.00	0.00	5.00	0.00	5.00	1.04	0.00	1.04	0.00
Fine Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.06	1.07	0.00	0.00	0.00	0.01	0.00	0.00	0.00	101.97
Time Slice 1/12/2011-8/5/2011 Active Days: 148	1.13	8.58	5.18	0.00	0.00	0.55	0.55	0.00	0.50	0.50	948.55
Building 01/11/2011-08/22/2011	1.13	8.58	5.18	0.00	0.00	0.55	0.55	0.00	0.50	0.50	948.55
Building Off Road Diesel	1.11	8.51	4.68	0.00	0.00	0.54	0.54	0.00	0.50	0.50	893.39
Building Vendor Trips	0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.11
Building Worker Trips	0.01	0.03	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.05

Time Slice 8/8/2011-8/22/2011 Active Days: 11	8.57	8.59	5.27	0.00	0.00	0.55	0.55	0.00	0.50	0.50	957.40
Building 01/11/2011-08/22/2011	1.13	8.58	5.18	0.00	0.00	0.55	0.55	0.00	0.50	0.50	948.55
Building Off Road Diesel	1.11	8.51	4.68	0.00	0.00	0.54	0.54	0.00	0.50	0.50	893.39
Building Vendor Trips	0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.11
Building Worker Trips	0.01	0.03	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.05
Coating 08/08/2011-09/05/2011	7.44	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.85
Architectural Coating	7.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.85
Time Slice 8/23/2011-9/5/2011 Active Days: 10	7.44	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.85
Coating 08/08/2011-09/05/2011	7.44	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.85
Architectural Coating	7.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.85

Phase Assumptions

Phase: Fine Grading 11/30/2010 - 1/11/2011 - Default Fine Site Grading Description

Total Acres Disturbed: 1

Maximum Daily Acreage Disturbed: 0.25

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

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Phase: Paving 12/28/2010 - 1/11/2011 - Default Paving Description

Acres to be Paved: 0.25

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 1/11/2011 - 8/22/2011 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 8/8/2011 - 9/5/2011 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

Time Slice 11/30/2010-12/27/2010 Active Days: 20	3.04	25.05	13.62	0.00	1.14	1.25	2.39	0.24	1.15	1.39	2,349.23
Fine Grading 11/30/2010-01/11/2011	3.04	25.05	13.62	0.00	1.14	1.25	2.39	0.24	1.15	1.39	2,349.23
Fine Grading Dust	0.00	0.00	0.00	0.00	1.13	0.00	1.13	0.24	0.00	0.24	0.00
Fine Grading Off Road Diesel	3.00	24.99	12.46	0.00	0.00	1.25	1.25	0.00	1.15	1.15	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.04	0.07	1.16	0.00	0.00	0.00	0.01	0.00	0.00	0.00	101.91
Time Slice 12/28/2010-12/31/2010 Active Days: 4	5.13	37.25	22.69	0.00	1.15	2.29	3.44	0.24	2.11	2.35	3,533.93
Asphalt 12/28/2010-01/11/2011	2.09	12.20	9.07	0.00	0.01	1.04	1.05	0.00	0.95	0.96	1,184.70
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.95	11.89	6.98	0.00	0.00	1.03	1.03	0.00	0.94	0.94	979.23
Paving On Road Diesel	0.01	0.19	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	27.13
Paving Worker Trips	0.07	0.11	2.03	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.35
Fine Grading 11/30/2010-01/11/2011	3.04	25.05	13.62	0.00	1.14	1.25	2.39	0.24	1.15	1.39	2,349.23
Fine Grading Dust	0.00	0.00	0.00	0.00	1.13	0.00	1.13	0.24	0.00	0.24	0.00
Fine Grading Off Road Diesel	3.00	24.99	12.46	0.00	0.00	1.25	1.25	0.00	1.15	1.15	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.04	0.07	1.16	0.00	0.00	0.00	0.01	0.00	0.00	0.00	101.91

Time Slice 1/3/2011-1/10/2011 Active Days: 6	4.82	35.03	21.86	0.00	1.15	2.16	3.31	0.24	1.99	2.23	3,534.10
Asphalt 12/28/2010-01/11/2011	1.96	11.53	8.84	0.00	0.01	0.99	1.00	0.00	0.91	0.91	1,184.81
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.83	11.26	6.91	0.00	0.00	0.98	0.98	0.00	0.90	0.90	979.23
Paving On Road Diesel	0.01	0.17	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	27.13
Paving Worker Trips	0.06	0.10	1.87	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.46
Fine Grading 11/30/2010-01/11/2011	2.86	23.50	13.03	0.00	1.14	1.17	2.31	0.24	1.08	1.32	2,349.29
Fine Grading Dust	0.00	0.00	0.00	0.00	1.13	0.00	1.13	0.24	0.00	0.24	0.00
Fine Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.06	1.07	0.00	0.00	0.00	0.01	0.00	0.00	0.00	101.97

Time Slice 1/11/2011-1/11/2011 Active Days: 1	5.95	43.61	27.04	0.00	1.15	2.71	3.86	0.24	2.49	2.73	4,482.65
Asphalt 12/28/2010-01/11/2011	1.96	11.53	8.84	0.00	0.01	0.99	1.00	0.00	0.91	0.91	1,184.81
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.83	11.26	6.91	0.00	0.00	0.98	0.98	0.00	0.90	0.90	979.23
Paving On Road Diesel	0.01	0.17	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	27.13
Paving Worker Trips	0.06	0.10	1.87	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.46
Building 01/11/2011-08/22/2011	1.13	8.58	5.18	0.00	0.00	0.55	0.55	0.00	0.50	0.50	948.55
Building Off Road Diesel	1.11	8.51	4.68	0.00	0.00	0.54	0.54	0.00	0.50	0.50	893.39
Building Vendor Trips	0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.11
Building Worker Trips	0.01	0.03	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.05
Fine Grading 11/30/2010-01/11/2011	2.86	23.50	13.03	0.00	1.14	1.17	2.31	0.24	1.08	1.32	2,349.29
Fine Grading Dust	0.00	0.00	0.00	0.00	1.13	0.00	1.13	0.24	0.00	0.24	0.00
Fine Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.06	1.07	0.00	0.00	0.00	0.01	0.00	0.00	0.00	101.97
Time Slice 1/12/2011-8/5/2011 Active Days: 148	1.13	8.58	5.18	0.00	0.00	0.55	0.55	0.00	0.50	0.50	948.55
Building 01/11/2011-08/22/2011	1.13	8.58	5.18	0.00	0.00	0.55	0.55	0.00	0.50	0.50	948.55
Building Off Road Diesel	1.11	8.51	4.68	0.00	0.00	0.54	0.54	0.00	0.50	0.50	893.39
Building Vendor Trips	0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.11
Building Worker Trips	0.01	0.03	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.05

Time Slice 8/8/2011-8/22/2011 Active Days: 11	**8.57**	8.59	5.27	0.00	0.00	0.55	0.55	0.00	0.50	0.50	957.40
Building 01/11/2011-08/22/2011	1.13	8.58	5.18	0.00	0.00	0.55	0.55	0.00	0.50	0.50	948.55
Building Off Road Diesel	1.11	8.51	4.68	0.00	0.00	0.54	0.54	0.00	0.50	0.50	893.39
Building Vendor Trips	0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.11
Building Worker Trips	0.01	0.03	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.05
Coating 08/08/2011-09/05/2011	7.44	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.85
Architectural Coating	7.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.85
Time Slice 8/23/2011-9/5/2011 Active Days: 10	7.44	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.85
Coating 08/08/2011-09/05/2011	7.44	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.85
Architectural Coating	7.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.85

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 11/30/2010 - 1/11/2011 - Default Fine Site Grading Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

APPENDIX B – TRANSPORTATION AND CIRCULATION ANALYSIS

CRANE TRANSPORTATION GROUP INPUT TO BELVEDERE CIRCULATION ELEMENT

The following text and bulleted items are intended for use in the Belvedere General Plan Circulation Element as background to discussions or to be incorporated in the text of the Circulation Element. They are presented by theme, to be used as deemed appropriate by Plan B Municipal Consulting and the City of Belvedere planning staff. Information provided is in response questions and conversations with Kristi Bascom, of Plan B Municipal Consulting, and Pierce MacDonald, City of Belvedere. For purposes of this report, and to simplify descriptions of roadways, Tiburon Boulevard is referenced as being oriented east-west, although it is actually oriented southeast - northwest.

I. BELVEDERE PLANNING AREA CIRCULATION NETWORK

The City of Belvedere is located on the Tiburon Peninsula, in Marin County, California. It is a residential community, comprised of three main neighborhoods: Belvedere Lagoon, Belvedere Island, and Corinthian Island.

- Belvedere Lagoon neighborhood is the lower elevation, flatter portion of the City, with residential properties surrounding an interior waterway. Residences are served by the encircling roadway system comprised of San Rafael Avenue, Community Road, Beach Road, Cove Road and Lagoon Road. Some Lagoon Road residences back along Tiburon Boulevard.

- Belvedere Island is the largest neighborhood in land area and number of residences, and is the most varied in terms of topography and landforms. It is characterized by winding roads that follow hillside contours, and through some sections, there is room for little off-street parking, and no on-street parking.

- Corinthian Island fronts along Belvedere Cove; the northernmost residential lots border the Town of Tiburon. Roads serving this neighborhood are Main Street, Alcatraz Avenue and Bellevue Avenue.

- There are also smaller neighborhoods associated with specific streets, such as those fronting Richardson Bay, served by San Rafael Avenue and West Shore Road.

The existing circulation network in Belvedere consists of approximately 10 miles of roads, most of which are two-lane, with maximum speed limits of 25 miles per hour. Roads serving Belvedere connect to the roadway network within the Tiburon Planning Area: San Rafael Avenue and Beach Road connect to Tiburon Boulevard, and Cove Road – Lagoon Road connect to Mar West Street just south of its intersection with Tiburon Boulevard. The entire circulation system consists of roads, trails, and bicycle, pedestrian, bus, and ferry facilities. A description of the major transportation facilities are included in this section.

A. ROADS

Regional access to the Tiburon Peninsula is provided by U.S Highway 101 (U.S. 101), a major north-south freeway linking Marin County with Sonoma County (north) and San Francisco (south). There are three gateways into the City of Belvedere, all of which connect to Tiburon Boulevard: San Rafael Avenue, Lagoon Road – Cove Road, and Beach Road.

Tiburon Boulevard provides access from U.S. Highway 101 through Tiburon and Unicorporated Marin County to the Belvedere street system. Tiburon Boulevard (State Route 131), is a two- to four-lane arterial roadway that extends from its interchange with U.S. 101 east, through downtown Tiburon, to Belvedere, and terminates at its connection to Paradise Drive.

Tiburon Boulevard has four through traffic lanes at its interchange with U.S. 101 which continue east as far as Trestle Glen Boulevard. East of Trestle Glen Boulevard, the roadway narrows to two through lanes with turn lanes at intersections. It has paved and unpaved shoulders varying from zero to five feet wide. At its intersection with San Rafael Avenue, the westernmost gateway to Belvedere, Tiburon Boulevard has one through lane in each direction and exclusive left and right turn lanes to San Rafael Avenue. This intersection is signalized, and has crosswalks on the south and east approaches, with pedestrian signal controls. Further east, as Tiburon Boulevard nears downtown Tiburon at Mar West Street, the two-lane roadway has been improved to accommodate on-street parking and Class II bicycle lanes. The Mar West Street intersection is stop sign controlled on the Mar West Street approaches, and there are pedestrian crosswalks on the north, east and south intersection approaches. On the Tiburon Boulevard approach to Beach Road, the boulevard has been widened to accommodate a central landscaped median. At its intersection with Beach Road, the easternmost gateway to Belvedere, Tiburon Boulevard has one through lane in each direction and exclusive left and right turn lanes to Beach Road. This intersection is signalized, and has crosswalks and pedestrian signal controls on all approaches.

In addition to San Rafael Avenue and Beach Road, Tiburon Boulevard has signalized intersections at the U.S. 101 north- and southbound on- and off-ramps, and at Strawberry Drive, Blackfield Drive, Trestle Glen Boulevard, Avenida Miraflores, Rock Hill Drive and Lyford Drive. Just east of Main Street, Tiburon Boulevard narrows, the Class II bicycle lanes are discontinued, and further east, the roadway changes name to Paradise Drive.

San Rafael Avenue is a major, two-lane road providing access to the Belvedere Lagoon neighborhood, and the City of Belvedere City Hall and community facilities. It has intermittent sidewalks on one or both sides, and is bordered by a multi-use path fronting Richardson Bay. South of Tiburon Boulevard, San Rafael Avenue has five pedestrian crosswalks, located at its intersections with Lagoon Road, Windward Road, Edgewater Road, West Shore Road and just northwest of Laurel Road where there is a crosswalk

serving pedestrian access to community recreational facilities. Pedestrian crossing signs are posted in advance of crosswalks, and through the heavily-used pedestrian areas adjacent to Richardson Bay and the multi-use path, yellow pedestrian warning "paddle" signs are positioned in the center of two crosswalks (at Lagoon Road and Edgewater Road) alerting drivers that state law requires vehicles to yield to pedestrians. San Rafael Avenue has been recently resurfaced, and pavement paint markings are fresh and highly visible. Most crosswalks consist of two white lines, and have ADA (wheelchair accessible) curb ramps. At most intersections, side streets are stop sign controlled, however, at its intersection with Laurel Avenue and Acacia Avenue, eastbound San Rafael Avenue as well as Laurel and Acacia avenues are stop sign controlled; this is due to topography and sight lines at this intersection.

Lagoon Road and Cove Road are two-lane, residential streets serving the northern portion of the Belvedere Lagoon neighborhood; the name change occurs at the Mar West Street / Tiburon Boulevard intersection. Lagoon and Cove roads serve primarily residential uses and have intermittent sidewalks. The two roads converge to form the stop sign controlled south leg of the Mar West Street / Tiburon Boulevard intersection, where turns from westbound Tiburon Boulevard are restricted, directing traffic to westbound Lagoon Road, only. This turn restriction serves as a traffic control measure through the residential area.

Beach Road between Community Road and Tiburon Boulevard has two lanes; side streets are stop sign controlled. Beach Road provides access to the southern portion of the Belvedere Lagoon neighborhood, the San Francisco Yacht Club and other facilities fronting Belvedere Cove. Beach Road extends south from a signalized intersection with Tiburon Boulevard, and has intersections with Juanita Lane, Main Street, Cove Road, Peninsula Road, Teal Road (private roadway), and San Rafael Avenue, with crosswalks at each intersection, consistent with the design of those along San Rafael Avenue, and sidewalks along both sides of the road. Between San Rafael Avenue and Cove Road, Beach Road has a central, landscaped median. South of San Rafael Avenue, Beach Road narrows, has no sidewalks, and winds within the Belvedere Island neighborhood, serving parcels oriented to Belvedere Cove.

B. BICYCLE AND PEDESTRIAN FACILITIES & PROGRAMS

1. Definition of Bicycle Facilities

Caltrans standards provide for three types of bikeway facilities, as described below:

- Class I Bikeway (Bicycle Path) - provides a completely separate right-of-way and is designated for the exclusive use of bicycles and pedestrians with vehicle and pedestrian cross-flow minimized.

- Class II Bikeway (Bicycle Lane) - provides a restricted right-of-way and is designated for the use of bicycles with a striped lane on a street or highway. Bicycle lanes are

generally five feet wide. Adjacent vehicle parking and vehicle / pedestrian cross-flow are permitted.

- Class III Bikeway (Bicycle Route) - provides for a right-of-way designated by signs or pavement markings for shared use with motor vehicles.

Existing Bikeways
The existing bikeways within the Tiburon-Belvedere planning area are within the jurisdiction of the Town of Tiburon:

- Class I bicycle path (Richardson Bay Linear Park Multi-Use Path) from Blackie's Pasture to Mar West Street.

- Class II bicycle lanes on Tiburon Boulevard (east of Mar West Street) and Paradise Drive (west of Mar West Street).

Proposed Bikeways
There are several planned bikeways within the Marin County and the Tiburon-Belvedere planning area (within jurisdiction of Tiburon): [1]

- Class II bicycle lanes on Trestle Glen Boulevard (from Tiburon Boulevard to Paradise Drive). [2]

- Class III bicycle routes on Tiburon Boulevard (from U.S. 101 to Greenwood Cove Road), Greenwood Cove Road and Greenwood Back Road (to Blackie's Pasture).

- Class III bicycle route on Paradise Drive (from Mar West Street to Corte Madera) that forms a portion of the San Francisco Bay Trail.

The scenic qualities of Belvedere roadways make the city's streets popular routes for bicyclists.

Bicycle Facilities and Bicycle Use of Belvedere Streets
Crane Transportation Group (the General Plan traffic analyst) counted bicycle activity at three intersections along Tiburon Boulevard: at San Rafael Avenue, Mar West Street and Beach Road, and at the Beach Road/ Main Street intersection. Counts of motor vehicle traffic were conducted during the typical weekday AM (7:00 – 9:00) and PM (4:00 – 6:00) peak traffic periods, as well as the Saturday peak traffic period (11:00 AM – 6:00 PM) in September 2008 after the start of the school year. Volumes were updated based on a system of weekday traffic counts prepared in May, 2009 for the Easton Point

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1 *Tiburon 2020 General Plan Draft EIR*, Page 4.2-2.

2 A portion of Trestle Glen Boulevard currently features a five-foot path separated from the roadway by a raised curb. Although this facility may be utilized by bicyclists, inclusion of the raised curb would not be consistent with Class I or II facilities.

Development project located along Paradise Drive in Marin County. Resulting volumes are shown on **Figures 1, 2 and 3.** As shown, bicycle volumes were greatest during the weekday counts at the Tiburon Boulevard/ San Rafael Avenue intersection, with a total of 40 (two-way) bicyclists on Tiburon Boulevard; the greatest Saturday counts occurred at the Tiburon Boulevard/ Beach Road intersection, with a total 91 (two-way) bicyclists on Tiburon Boulevard and 21 (two-way) bicyclists on Beach Road.

Potential improvements for bicyclists and pedestrians to the Tiburon Boulevard/San Rafael Avenue Intersection

The following improvements could be considered to improve bicycle use of the Tiburon Boulevard/San Rafael Avenue intersection.

Bicycle Loop Detectors (BLD) - installation or calibration of in-pavement induction loops so that they are sensitive to bicycles. BLDs use a unique Caltrans standard stencil to identify the best location for cyclists to position themselves to actuate a traffic signal.

Contrasting pavement texture and color to distinguish between the crosswalk and bikeway and roadway pavement.

Provision of a raised intersection to help slow traffic.

In-pavement lighting of crosswalk to preserve the visual prominence of the crosswalk at night.

2. Definition of Pedestrian Facilities

Generally, there are two types of pedestrian facilities: those intended for exclusive use by pedestrians, such as sidewalks, and those shared with other users (i.e. Class I Multi-use Pathways). In addition, in California sidewalks can be legally used by cyclists under the age of 12 unless otherwise signed or locally regulated. Pedestrian facilities at intersections can include crosswalks, pedestrian crosswalk signals, warning signage, curb ramps and other treatments to promote safety and accessibility for disabled users.

The California Vehicle Code Section 275 defines a crosswalk as either:

• That portion of a roadway included within the prolongation or connection of the boundary lines of sidewalks at intersections where the intersecting roadways meet at approximately right angles, except the prolongation of such lines from an alley across a street.

• Any portion of a roadway distinctly indicated for pedestrian crossing by lines or other markings on the surface. At intersections, a crosswalk is effectively a legal extension of the sidewalk across the roadway. Crosswalks are present at all intersections, whether marked or unmarked, unless the pedestrian crossing is specifically prohibited by the local jurisdiction. At mid-block locations, crosswalks only exist if they are marked. Sidewalks

and curb cuts must comply with guidelines for implementing the federal Americans with Disabilities Act (ADA).

Pedestrian Facilities and Pedestrian Use of Belvedere Streets
Pedestrian facilities on streets in the Belvedere study area - San Rafael Avenue and Beach Road - are described (above) as part of the roadway description. While sidewalks and pedestrian paths are provided on many streets in the Belvedere Lagoon neighborhood, including the San Rafael Avenue multi-use path, many streets in Belvedere do not have sidewalks. The majority of pedestrian crossing locations are not signalized, including most crossings on San Rafael Avenue and Beach Road, however they are prominently marked and signed. Streets in Belvedere with sidewalks or some sidewalk segments include: Britton Avenue, Edgewater Road, Peninsula Road, Windward Road, Leeward Road, Lagoon Road and Cove Road.. It is the city's policy to construct sidewalks in Belvedere "wherever feasible."

Crane Transportation Group (the General Plan traffic analyst) counted pedestrian activity at three intersections along Tiburon Boulevard: at San Rafael Avenue, Mar West Street and Beach Road, and at the Beach Road/ Main Street intersection. Counts of motor vehicle traffic were conducted during the typical weekday AM (7:00 – 9:00) and PM (4:00 – 6:00) peak traffic periods, as well as the Saturday peak traffic period (11:00 AM – 6:00 PM) in September 2008 after the start of the school year. Volumes are shown on **Figures 1, 2 and 3.** As shown, pedestrian volumes were greatest during the weekday at the Tiburon Boulevard/ Beach Road intersection, with a total of 92 (two-way) pedestrians on Tiburon Boulevard and 30 (two-way) pedestrians on Beach Road; the greatest Saturday counts occurred at the same location, with a total 98 (two-way) pedestrians on Tiburon Boulevard and 41 (two-way) pedestrians on Beach Road.

3. Discussion of Safe Routes to School

Tiburon Boulevard provides access to Reed Union School District Schools, including During the school year, it is important to encourage parents to carpool or use alternative modes of transportation to improve traffic flow along Tiburon Boulevard. The following provides current information regarding the Marin County Safe Routes to School program:

The Marin County Bicycle Coalition has been a leader in the Safe Routes to Schools movement. Safe Routes to Schools is designed to increase the number of children walking and biking to school. A "SR2S" program integrates health, fitness, traffic relief, environmental awareness and safety under one program. It is an opportunity to work closely with schools, community and local government to create a healthy lifestyle for children and a safer and cleaner environment for everyone.

The program has four components:

- **Encouragement** - Events, contests and promotional materials are incentives that encourage children and parents to try walking and biking.

- **Education** - Classroom lessons teach children the skills necessary to navigate through busy streets and persuade them to be active participants in the program.
- **Engineering** – Examine the physical barriers that prohibit children from safely navigating the routes to schools.
- **Enforcement** – Partner with law enforcement to increase the police presence around schools. Driver's education is even more effective in changing the behavior of harried parents and commuters who are not paying attention to the children on the roads.

Why Safe Routes is Important

Cities with existing programs have experienced reduced traffic congestion, reduced collision in and around schools, and decreased speed in residential neighborhoods. Children learn valuable traffic safety skills and responsibility and more people of all ages are able to walk and bike in the neighborhood as a result of improved access.

Marin County

Marin County adopted the Safe Routes to Schools program in 2003 and the Marin Congestion Management Agency funded the program through federal funding through the Enhancements program and through the Bay Area Air Quality Management District's Transportation for Clean Air Funding award. Then in November 2004, the voters of Marin passed a ½ cent transportation sales tax which include 11% of its funding for Safe Routes to Schools including program, crossing guards and infrastructure. It is now a program of the Transportation Authority of Marin and continues to be implemented by the Marin County Bicycle Coalition.

Programs for Schoolchildren - Tiburon

In January 2001 the Town of Tiburon joined the Reed Union School District (RUSD) and St. Hilary School in forming the Tiburon Peninsula Traffic Committee, which aimed to increase carpooling, walking, and biking to schools and to improve traffic flow around school neighborhoods. From that process, the Town approved a traffic safety improvement plan for areas around the schools. The improvements, including the installation of sidewalks funded by Safe Routes to Schools grants, are underway and ongoing. For example, Appendix C of the *Town of Tiburon Bicycle and Pedestrian Master Plan, 2008 Update,* provides Safe Routes to Schools Project Details for Del Mar School.

Early in each school year, the Town of Tiburon's Police Department, and the City of Belvedere's Police Department, has officers at the school sites to monitor and educate parents and students about traffic and pedestrian safety. The Reed Union School District also has goals for reducing congestion around the schools. The District and PTA's sponsor "walk-to-school" or "walk 'n roll" days to encourage children to walk, skate or bike to school, and to organize carpools.

C. TRANSIT - BUS AND FERRY

Bus service is provided by Golden Gate Transit, which is operated by the Golden Gate Bridge, Highway, and Transportation District. Service reductions in 2003 resulted in a 30 percent decrease in bus service by the District.

Three bus routes serve Tiburon-Belvedere via Tiburon Boulevard:

- Route 8 (to and from San Francisco during commute hours, every 30 minutes)
- Route 19 (hourly service throughout the day between Marin City and Tiburon).

The Tiburon-Belvedere planning area has the highest percentage of ferry commuters among Bay Area cities with ferry service. The privately funded Blue and Gold Fleet provides four morning commute trips from Tiburon to the San Francisco Ferry Building, and four return trips serving the afternoon commute. In addition, several trips each day serve the reverse commute direction and an additional five daily trips connect with Sausalito and San Francisco's Pier 41.

DISCUSSION OF POTENTIAL FOR SHUTTLE SERVICE TO/FROM THE U.S. 101 FREEWAY, BELVEDERE AND THE FERRY TERMINAL

(This discussion is incorporates concepts and text from Belvedere's Snapshot Workbook, as well as recent grant information from BAAQMD, and other sources.)

Public transit on Tiburon Boulevard from the U.S. 101 freeway is limited, although large numbers of people come to Belvedere to work in its businesses and homes each day. Belvedere employers report that their employees find the bus service inadequate and unreliable and prefer to drive or carpool. While carpooling has some advantages, finding parking in Belvedere can be a challenge. In other jurisdictions where it has been difficult for public transit agencies to effectively provide transit service, such as parts of the East Bay and South Bay, employers have formed collectives that run private shuttles to connect to main line transit.

For example, Oakland has recently secured a $1 million, two-year grant administered by the Bay Area Air Quality Management District to fund initial planning and implementation of Oakland's "Waterfront-Uptown Shuttle." Shuttle service would be provided between downtown Oakland and Jack London Square, two emerging neighborhoods where new restaurants, galleries and offices are opening. The proposed shuttle will run along Broadway from the waterfront to West Grand Avenue and then loop around to the Uptown district along Telegraph Avenue. The concept behind the shuttle is for people who work in Uptown Oakland to visit other neighborhoods and to encourage more people to commute via the ferry at Jack London Square. The shuttle would initially be run with small buses, running from 7 AM to 7 PM every 10 minutes during peak times and every 15 minutes during non-peak times. to be eventually replaced

by a streetcar. It would be operated by AC Transit, and would cost between $700,000.00 and $850,000.00 per year. Other funding sources may include the developers of Jack London Square, city funds and the Downtown District and Lake Merritt-Uptown Community Benefit District. This example has limited applicability to Belvedere, perhaps as a high end example. Include a low end example like employee shuttle also?

Employee shuttles are common in Silicon Valley, Emeryville, and even some areas of San Francisco for bringing employees to outlying employment locations.

There are no known shuttles operating in the Belvedere/Tiburon area, however, provision of shuttle service should be explored to and from Belvedere and the ferry terminal, to park-and-ride lots and bus stops along the U.S. 101 freeway, to include a connection to the State Route 1 exit where connections to the existing park and ride lot and Muir Woods Shuttle buses could be made . Stops in the Tiburon-Belvedere area could include the Strawberry Village Shopping Center, Cove Shopping Center (Blackfield Drive), Blackie's Pasture and Richardson Bay Park, the Landmarks Art and Garden Center, Boardwalk Shopping Center, Ark Row Shopping Center, Shoe Line Park and the Ferry Terminal. The shuttle should serve employees and visitors, as well as specific arts and civic groups, desiring access to Belvedere and Tiburon. Shuttles should be equipped with bicycle racks to accommodate the many two-wheeled visitors to the Tiburon Peninsula who arrive by ferry. This would require application for grant funding to provide initial funds for planning stages and working with Tiburon-Belvedere employers and civic groups to study the feasibility of collaboration with a public/private shuttle collective.

The following are current funding sources that might be considered:

1. Transportation Fund for Clean Air

The Transportation Fund for Clean Air (TFCA) is a grant program funded by a $4 surcharge on motor vehicles registered in the Bay Area. This generates approximately $22 million per year in revenues.

The purpose of the TFCA program is to provide grants to implement the most cost-effective projects in the Bay Area that will decrease motor vehicle emissions, and thereby improve air quality. Projects must be consistent with the 1988 California Clean Air Act and the Bay Area Ozone Strategy.

Funding Process

TFCA funds are available through two main channels: the Regional Fund and the County Program Manager Fund. The Regional Fund receives about 60% of the TFCA revenues and is administered directly by the Air District. The Program Manager Fund receives the other 40% of the TFCA revenues and is administered in coordination with the Bay Area's nine county congestion management agencies (CMAs).

TFCA-funded Programs

The TFCA provides funding for:

- TFCA Regional Fund
- Projects that are awarded grants via the competitive Regional Fund process
- Bicycle Facility Program (a grant program for public agencies)
- Smoking Vehicles Program
- Spare the Air
- Vehicle Buy Back (an incentive program for owners of older light-duty vehicles)
- TFCA County Program Manager Fund

Eligible Project Types

The TFCA program can fund a wide range of project types, including the purchase or lease of clean air vehicles; shuttle and feeder bus service to train stations; ridesharing programs to encourage carpool and transit use; bicycle facility improvements such as bike lanes, bicycle racks, and lockers; arterial management improvements to speed traffic flow on major arterials; smart growth projects; and transit information projects to enhance the availability of transit information.

Who Can Apply?

Public agencies within the Air District's jurisdiction can apply for TFCA funds. Public agencies can apply for funding either directly to the Air District for Regional Funds, or to the County Program Manager Fund via the CMA in the respective county. Non-public entities can apply for TFCA grants, directly or via a public agency, to implement certain clean air vehicle projects only. Non-public entities can apply directly for Regional Funds. In certain cases, non-public agencies also may be able to apply for County Program Manager Funds via the respective CMA.

2. Climate Protection Grant Program

On December 19, 2007, the Bay Area Air Quality Management District Board of Directors awarded $3 million in Climate Protection Grants to Bay Area local governments and nonprofits for implementation of innovative projects to reduce greenhouse gas emissions. Over 80 applications for funding were received, reflecting a tremendous amount of interest in pursuing climate protection and a need for this type of funding. The Air District is impressed by the overwhelming response to this grant program, the high level of creativity and innovation in the applications, and the demonstration of leadership our region is providing for the rest of the country. Award recipients and respective funding amounts are listed in Appendix C.

D. OBSERVED VEHICLE CIRCULATION ISSUES IN BELVEDERE

Belvedere Island and Corinthian Island streets are generally narrow and winding.

Vehicles accessing the homes in Belvedere Island travel a winding roadway system via Belvedere Avenue, Golden Gate Avenue, Bella Vista Avenue, and other Belvedere Island streets. Through many sections the roadways are not wide enough to accommodate on-street parking due to the narrow width of the pavement, lack of shoulders, and close proximity of houses to the pavement edge. The narrow road width and little to no on-street parking is understood as being a trade-off for residents of the neighborhoods, who recognize the high value of views and unique home sites afforded hillside homes along the winding, narrow streets. In the Belvedere Island neighborhoods, most on-street parking is accommodated in "Designated Parking Spaces" on a first come, first served basis. Spaces have been marked with white paint on the two lane roads, with signs posting them as "Designated Spaces." Each designation is approved by the City Council. The spaces result in narrowing the road to a one-way section, thus, these parking areas are spaced to allow room for vehicles to pull over or back up to yield to another vehicle. A minimum of 10 feet of paved way must be left clear and unobstructed for free passage of other vehicles. The 10-foot "clear passage" also applies to construction materials. This is discussed further under "City Ordinances Which Affect Construction."

Corinthian Island allows no on-street parking, and the major streets, Marin Street, Alcatraz Avenue and Bellevue Avenue, are predominantly one-way.

The Tiburon Fire Protection District has recently addressed this issue (access through narrow, winding streets) for the Old Tiburon and Hill Haven neighborhoods – see **Appendix D**.

Locations subject to excessive speed…(to be completed after talk with Public Works week of November 28.) See **Figure 4** – waiting for input from Belvedere Police.

II. TRAFFIC VOLUMES - EXISTING AND FUTURE

The General Plan traffic analyst determined current traffic volumes by conducting weekday AM and PM commute peak traffic period and Saturday peak period intersection turning movement counts at four intersections in September, 2008 once school was in session. Intersections analyzed were determined in consultation with Plan B Municipal Consulting and City staff, and were conducted at the request of the City of Belvedere.

Volumes were updated in May, 2009 while schools were still in session as part of the system of counts performed for the Easton Point Development in the Tiburon planning area of Marin County.[3] The May 2009 count data were found to have slightly higher overall volumes, thus, were used to establish current AM and PM peak hour traffic volumes. The system of Saturday traffic count volumes utilized the September, 2008 count data prepared for the City of Belvedere. The weekday peak hours generally were found to occur between 7:45 and 8:45 AM and 4:30 and 5:30 PM, while the Saturday

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[3] Crane Transportation Group supervised conduct of counts by All Traffic Data.

peak hour was found to occur between 3:15 and 4:15 PM. **Figures 5, 6 and 7** show existing volumes.

Future (year 2020) Tiburon-Belvedere planning area volumes were determined based upon the Town of Tiburon traffic model, updated to 2009 conditions as part of the Easton Point Development EIR traffic analysis. Year 2020 weekday and Saturday volumes are shown in **Figures 8, 9 and 10.**

Intersection Analysis Weekday AM and PM peak commute intersection operation was evaluated at the four study intersections. The level of service methodology used in this report is the current engineering profession standard. [4] Analyzed intersections are as follows:

Signalized Intersections

- Tiburon Boulevard / San Rafael Avenue
- Tiburon Boulevard / Beach Road

Unsignalized Intersections

- Tiburon Boulevard / Mar West Street / Lagoon Road/ Cove Road
- Beach Road / Main Street

Intersection Operation Operations for signalized and unsignalized intersections are described below.

Signalized Intersections Intersections, rather than roadway segments between intersections, are almost always the capacity controlling locations for any circulation system. For signalized intersections, the 2000 *Highway Capacity Manual* (Transportation Research Board, National Research Council) methodology was utilized. With this methodology, operations are defined by the level of service and average control delay per vehicle (measured in seconds) for the entire intersection. For a signalized intersection, control delay is the portion of the total delay attributed to traffic signal operation. This includes delay associated with deceleration, acceleration, stopping, and moving up in the queue. Greater detail regarding the LOS / delay relationship is provided in **Table 1.**

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4 Operations Method, *Highway Capacity Manual (HCM)*, 2000.

Table 1
Signalized Intersection Level of Service Criteria

Level of Service	Description	Average Control Delay* (Seconds Per Vehicle)
A	Operations with very low delay occurring with favorable progression and/or short cycle lengths.	< 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	10.1 to 20.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.1 to 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, and/or high volume-to-capacity (V/C) ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 55.0
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	55.1 to 80.0
F	Operation with delays unacceptable to most drivers occurring due to oversaturation, poor progression, or very long cycle lengths.	> 80.0

* Control delay includes initial deceleration delay, queue move-up time, stopped delay, and acceleration delay.
Source: 2000 Highway Capacity Manual (Transportation Research Board, 2000).

Unsignalized Intersections For unsignalized (all-way stop-controlled and side-street stop-controlled) intersections, the 2000 Highway Capacity Manual (Transportation Research Board, National Research Council) methodology for unsignalized intersections was utilized. For side-street stop-controlled intersections, operations are defined by the level of service and average control delay per vehicle (measured in seconds), with delay typically represented for the stop sign controlled approaches or turn movements. For all-way stop-controlled intersections, operations are defined by the average control delay for the entire intersection (measured in seconds per vehicle). The delay at an unsignalized intersection incorporates delay associated with deceleration, acceleration, stopping, and moving up in the queue. **Table 2** provides greater detail about unsignalized analysis methodologies.

Table 2
Unsignalized Intersection Level of Service Criteria

Level of Service	Description	Average Control Delay* (Seconds Per Vehicle)
A	Little or no delay	< 10.0
B	Short traffic delays	10.1 to 15.0
C	Average traffic delays	15.1 to 25.0
D	Long traffic delays	25.1 to 35.0
E	Very long traffic delays	35.1 to 50.0
F	Extreme traffic delays with intersection capacity exceeded (for an all-way stop), or with approach/turn movement capacity exceeded (for a side street stop controlled intersection)	> 50.0

* Control delay includes initial deceleration delay, queue move-up time, stopped delay, and acceleration delay.
Source: 2000 Highway Capacity Manual (Transportation Research Board, 2000).

Minimum Acceptable Standards
LOS standards for intersections in the Tiburon Planning Area are based on the following:

- The *Marin County Congestion Management Program* (CMP), developed by the Transportation Authority of Marin (TAM) stipulates that urban and suburban arterials within the County should operate at LOS D or better, while highways such as U.S. 101 should operate at LOS E or better. [5]

- The *Tiburon General Plan* stipulates that intersections should operate at LOS C or better, with some exceptions (the intersections analyzed in this report are not listed as exceptions).

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5 *Marin Congestion Management Program, Draft Report Update*, Transportation Authority of Marin, 2007.

Existing and Future Intersection Levels of Service

Tables 3 and 4 show the existing and future levels of service for each of the four intersections analyzed. As shown, the two signalized intersections currently operate acceptably during the weekday AM and PM peak hours, and during the Saturday PM peak hour. The two unsignalized intersections have all but one approach operating acceptably: during the weekday AM and PM peak hours, the Lagoon-Cove Road northbound intersection approach operates at LOS D (existing PM peak hour conditions) and LOS E or F (future AM, PM and Saturday peak hour conditions); the Mar West southbound intersection approach operates at LOS D or F (Saturday and PM peak hour future conditions, respectively). These levels of service are unacceptable according to the standards of the Marin County CMP and Tiburon General Plan. Based on Caltrans criteria, the current volume of side street traffic is not sufficient to warrant signalization. However, future volume projections would result in the peak hour signal warrant being met (see the discussion of signal warrants below). If signalized, the intersection would operate acceptably at LOS B or C for all analyzed conditions.

Table 3

EXISTING INTERSECTION LEVEL OF SERVICE AM, PM AND SATURDAY PEAK HOURS

INTERSECTION	EXISTING		
	AM PEAK HOUR	PM PEAK HOUR	SATURDAY PEAK HOUR
San Rafael Avenue/ Tiburon Boulevard	B-12.3 (1)	B-10.7	A-9.0
Mar West Street/ Lagoon Road - Cove Road/ Tiburon Boulevard	A-8.7/A-8.2/D-21.5/B-15.9 (2)	A-8.6/A-9.1/D-26.8/D-31.0	A-8.9/A-8.4/C-23.7/C-18.7
Beach Road/ Tiburon Boulevard	B-14.5 (1)	B-17.4	B-16.2
Beach Road/ Main Street.	A-9.8/A-7.6 (3)	B-10.5/A-7.7	B-13.7/A-8.1

1. Signalized level of service-average vehicle delay (in seconds).

2 Side street stop sign-controlled level of service-average vehicle delay (in seconds). Eastbound Tiburon Boulevard left turn to Mar West Street/ Westbound Tiburon Boulevard left turn to Mar West Street/ Northbound Lagoon-Cove Road approach to Tiburon Boulevard/ Southbound Mar West Street approach to Tiburon Boulevard.

3 Side street stop sign-controlled level of service-average vehicle delay (in seconds). Westbound Main Street approach to Beach Road/ Southbound left turn from Beach Road to Main Street.

Year 2000 Highway Capacity Manual Analysis Methodology.
Source: Crane Transportation Group

Table 4

YEAR 2020 INTERSECTION LEVEL OF SERVICE AM, PM AND SATURDAY PEAK HOURS

INTERSECTION	Year 2020		
	AM PEAK HOUR	PM PEAK HOUR	SATURDAY PEAK HOUR
San Rafael Avenue/ Tiburon Boulevard	B-19.1 (1)	B-14.6	B-11.9
Mar West Street/ Lagoon Road - Cove Road/ Tiburon Boulevard	A-9.1/A-8.9/ E-44.4/C-21.9 (2) B-16.4 (1)	A-9.1/B-10.3/F-84.9/F-166.1 C-28.3 (1)	A-9.7/A-9.2/F-52.6/D-33.1 B-16.5 (1)
Beach Road/ Tiburon Boulevard	B-14.9 (1)	B-19.9	B-16.6
Beach Road/ Main Street.	A-10.0/A-7.6 (3)	B-11.1/A-7.9	C-15.7/A-8.4

1. Signalized level of service-average vehicle delay (in seconds).

2 Side street stop sign-controlled level of service-average vehicle delay (in seconds). Eastbound Tiburon Boulevard left turn to Mar West Street/ Westbound Tiburon Boulevard left turn to Mar West Street/ Northbound Lagoon-Cove Road approach to Tiburon Boulevard/ Southbound Mar West Street approach to Tiburon Boulevard.

3 Side street stop sign-controlled level of service-average vehicle delay (in seconds). Westbound Main Street approach to Beach Road/ Southbound left turn from Beach Road to Main Street.

Year 2000 Highway Capacity Manual Analysis Methodology.
Source: Crane Transportation Group

Signal Warrants Traffic signals are used to provide an orderly flow of traffic through an intersection. Many times they are needed to offer side street traffic an opportunity to access a major road where high volumes and/or high vehicle speeds block crossing or turn movements. They do not, however, increase the capacity of an intersection (i.e. increase the overall intersection's ability to accommodate additional vehicles) and, in fact, often slightly reduce the number of total vehicles that can pass through an intersection in a given period of time. Signals can also cause an increase in traffic accidents if installed at inappropriate locations.

There are eight possible tests for determining whether a traffic signal should be considered for installation. These tests, called “warrants,” consider criteria such as actual

traffic volume, pedestrian volume, presence of school children, and accident history. Usually, two or more warrants must be met before a signal is installed. For this analysis, the test for Peak Hour Volumes (Warrant #3) has been applied. When Warrant #3 is met, there is a strong indication that a detailed signal warrant analysis covering all possible warrants is appropriate. These rigorous analyses are described in Chapter 4 of the *2003 Manual on Uniform Traffic Control Devices (MUTCD)*, [6] while Warrant #3 is presented in **Appendix B.**

It is possible that an unsignalized intersection will not meet signal warrants, but will have one or more movements that experience LOS F operations. LOS F can be indicated for a very low volume of vehicles at a stop sign. Although these stopped vehicles may experience long delays of one minute or more, there would not be an overall benefit if the higher numbers of vehicles on the major street are stopped in favor of the few vehicles on the minor street. The signal warrant considers a balance between major street and minor street delays, and may indicate that there is overall benefit if drivers for some turn movements from the minor street continue to experience long (LOS E or F) delays. For purposes of this analysis, Warrant #3 has been checked for the unsignalized intersection of Tiburon Boulevard with Mar West Street/ Lagoon Road/ Cove Road where lower volume side street turning movements experience lower levels of service and delay. As volumes increase at this intersection, service levels may deteriorate below acceptable levels, and provision of a signal, when warranted, would implement the Marin Countywide Plan policy TR-1.2 requiring maintenance of service standards, and the Town of Tiburon plan to signalize this intersection when warranted. **Table 5** and the warrant chart in **Appendix B** show that future volumes at this unsignalized study intersection meet peak hour signal warrant criteria levels during the year 2020 weekday PM peak hour.

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6 *2003 Manual on Uniform Traffic Control Devices*, Federal Highway Administration.

Table 5
Signal Warrants
Is Signal Warrant #3 Met at the Tiburon Boulevard/ Mar West Street/Lagoon Road/Cove Road Intersection?

Location	***Existing***		
	AM Peak Hour	***PM Peak Hour***	***Saturday Peak Hour***
Tiburon Boulevard/ Mar West Street/ Lagoon Road/ Cove Road	No	No	No

Location	***Year 2020***		
	AM Peak Hour	***PM Peak Hour***	***Saturday Peak Hour***
Tiburon Boulevard/ Mar West Street/ Lagoon Road/ Cove Road	No	**Yes**	No

Source: Crane Transportation Group

III. REGULATORY FRAMEWORK

There are several regional agencies that have jurisdiction in regard to traffic and transportation issues in the Tiburon-Belvedere Planning Area. Below is a summary of the agencies as well as recent planning initiatives that have been taken to improve regional transportation networks.

Metropolitan Transportation Commission

The majority of federal, state, and local financing available for transportation projects is allocated at the regional level by the Metropolitan Transportation Commission (MTC), the transportation planning, coordinating, and financing agency for the nine-county Bay Area. The current regional transportation plan, *Transportation 2030*, [7] specifies a detailed set of investments and strategies throughout the region from 2005 through 2030 to maintain, manage, and improve the surface transportation system. The plan specifies how anticipated federal, State, and local transportation funds will be spent in the Bay Area during the next 25 years. Most of this "committed funding" will go toward protecting the region's existing transportation infrastructure. The Golden Gate Bridge seismic retrofit project, the Golden Gate Bridge moveable median barrier project, improvements to Sir Francis Drake Boulevard, and acquisition and upgrade of Sonoma-Marin Rail station sites are projects with committed funding. Interchange improvements at U.S. 101 and Tiburon Boulevard are included in the list of priority projects in Marin County, which is intended to be partially funded with developers' fees.

Bay Area Air Quality Management District

The Bay Area Air Quality Management District (BAAQMD) is the regional agency with the authority to develop and enforce regulations for the control of air pollution

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7 *Transportation 2030 Plan for the San Francisco Bay Area*, Metropolitan Transportation Commission, February 2005.

throughout the Bay Area. The Clean Air Plan is BAAQMD's plan for reducing the emissions of air pollutants that lead to ozone. BAAQMD has also published CEQA Guidelines for the purpose of evaluating the air quality impact of projects and plans. One of the criteria that the Guidelines describe is that plans, including General Plans, must demonstrate reasonable efforts to implement transportation control measures included in the Clean Air Plan that identify local governments as the implementing agencies.

Transportation Authority of Marin

The Transportation Authority of Marin (TAM) is a 12-member board comprised of representatives from the Marin County Board of Supervisors and the City or Town Council of each local government in Marin County. Formerly known as the Marin County Congestion Management Agency, TAM is required to prepare, update, and monitor a Congestion Management Program (CMP) that does the following:

- Identifies a network of transportation facilities, maintains level of service standards for highways and roadways, and monitors congestion levels periodically.

- Establishes performance measures to evaluate current and future multi-modal system performance for the movement of people and goods.

- Identifies and encourages alternatives to the single occupant vehicle through the use of Transportation Demand Management (TDM) techniques.

- Develops a process to determine the impacts of local development decisions on the regional transportation network, facilitating integration of decisions about land development, transportation investment and air quality.

- Develops a computer travel model and database to be used for estimating future transportation needs and impacts.

- Develops and updates a seven year capital improvement program to promote the goals of the CMP.

The *2007 Marin County Congestion Management Program* (CMP) was designed to address the existing and future transportation congestion in Marin County and its cities and towns. Roads in the Planning Area which are part of the CMP network are Tiburon Boulevard and U.S. 101. TAM is required by state law to biannually determine whether the County and its cities and towns conform to the requirements of the CMP. For a local jurisdiction to conform to the CMP, the following requirements must be met:

- Maintaining the highway LOS standards.

- Participating in a program to analyze the impact of land-use decisions, including the estimated costs associated with mitigating these impacts.

- Participating in adoption and implementation of a Deficiency Plan when highway and roadway LOS standards are not maintained on portions of the designated system.

Nonconformance with the CMP could result in the loss of an increment of gasoline tax subvention funds and not having projects programmed in the Regional Transportation Improvement Program (RTIP).

Transportation Vision for Marin County

In addition to the CMP, in 2003, TAM produced *Moving Forward, A 25-Year Transportation Vision for Marin County*, the purpose of which "is to act as a blueprint that will guide development of a detailed implementation or expenditure plan that establishes priorities against a framework of financial opportunities and constraints". *Moving Forward* provides a framework for an integrated multi-modal transportation system that would reduce congestion by increasing transportation choices for all people in Marin County. Among the benefits highlighted for the Tiburon-Belvedere Planning Area include congestion relief at the Tiburon Boulevard / U.S. 101 interchange, expanded ferry service to San Francisco, and late night subsidized taxi service. [8]

Transportation Sales Tax Expenditure Plan

In November 2004, Marin County voters approved Measure A, the Traffic Relief and Better Transportation Act. Measure A is expected to generate $331.6 million over 20 years, and the money will be used to implement the Transportation Vision through the Transportation Sales Tax Expenditure Plan developed by TAM, the Marin County Board of Supervisors, and the Marin County Transit District. The goals of the Expenditure Plan are to sustain and enhance local bus services, maintain and improve the existing roadway infrastructure, and directly address current and emerging local congestion problems. [9]

Water Emergency Transportation Authority

The Water Emergency Transportation Authority (WETA) was established by SB 976, and replaces the WTA (Water Transit Authority). The intention of SB 976 is to improve the ability of ferries to respond in an emergency, specifically, to:

- Create and adopt an Emergency Water Transportation System Management Plan for the Bay Area on or before July 1, 2009.
- Create and adopt, on or before July 1, 2009, a transition plan to facilitate the transfer of existing public transportation ferry services within the Bay Area region to WETA (with the exception of services operated by the Golden Gate Bridge, Highway and Transportation District). In the preparation of the transition plan, priority shall be given to ensuring continuity in the programs, services, and activities of existing public transportation ferry services.
- Continue to deliver the Ferry Implementation and Operations Plan (WTA, July 2003) with a focus on building and operating a comprehensive and environmental

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8 *Moving Forward, a 25-Year Transportation Vision for Marin County*, Marin County Congestion Management Agency, Marin County Board of Supervisors, and Marin County Transit District, February 2003.

9 Marin County Transportation Sales Tax Expenditure Plan, County of Marin, May 6, 2004.

friendly public water transit system of ferries, feeder buses and terminals to increase regional mobility in the Bay Area.

WETA will continue the WTA's purpose as a focused regional agency dedicated to safe, cost effective and environmentally responsible water transit. It will continue to invest in clean-marine technology, advanced vessel design, systems planning, safety and disaster response planning, ridership forecasting, terminal design and developing good connections with landside transit, and it will be a resource to cities and private businesses in developing water transit oriented developments.

WETA operates a high speed biodiesel ferry out of Tiburon.

Marin Countywide Plan Built Environment Element, 3.9 Transportation

Marin County recognizes in its Countywide Plan that transportation systems and land use patterns are inextricably linked, and any major change to one triggers the need to modify the other. The plan calls for both circulation improvements and new development to enhance the travel experience for pedestrians, cyclists, and transit users so that alternative modes are successful in reducing car traffic and accommodating demand. Marin County has a **Roadway Impact Fee Ordinance** which provides for the repair and maintenance of County streets and roads resulting from construction activity. Also, Sub-regional Transportation Improvement Fees are assessed for new developments to pay their fair share for transportation facilities fees in specific study areas.

Policy TR-1.4 requires that new development pay its fair share of the transportation system impacts, and Policy TR-1.5 requires necessary transportation improvements to be in place, or to otherwise guarantee their timely installation, before or concurrent with new developments.

Implementing Program TR-1.g "Determine Appropriate Mitigation" specifies "require the preparation of a traffic impact analysis report to identify impacts and mitigation measures for projects that may result in significant traffic impacts." TR-1.g lists the fully funded and constructed southbound U.S. 101 off-ramp at Tiburon Boulevard/East Blithedale Avenue widening at the ramp terminus with East Blithedale Avenue. The Countywide Plan lists the following improvement which is not fully funded but listed as needing further evaluation before implementation:

- Improve Tiburon Boulevard overcrossing with additional lanes (particularly in the eastbound direction from southbound U.S. 101 to Strawberry Drive), more offramp and onramp capacity, accommodation of bicyclists and pedestrians, and better access to bus transit stops in the interchange.

Implementing Program TR-1.j "Install Highway Improvements," states "work with the Transportation Authority of Marin and Caltrans to carry out physical and operational improvements, such as completion of the High Occupancy Vehicle lane and ramp metering projects on Highway 101.

Implementing Program TR-1.s "VMT Reduction Monitoring and Implementation and Transportation Demand Management Program" specifies:

- All new residential projects consisting of 25 units or more should be located within ½-mile of a transit node, shuttle service, or bus route with regularly scheduled, daily service.

- Safe, convenient connections should be provided to existing pedestrian and bicycle facilities.

Consistent with Countywide Plan policies TR-1.4 and TR-1.5, the Town of Tiburon's Traffic Mitigation Fee (TMF) Program was searched to determine any relevant planned projects that would respond to the Countywide policies and implementing programs, specifically, to "identify impacts and mitigation measures for projects that may result in significant traffic impacts," then "require that new development pay its fair share of the transportation system impacts" and "guarantee their timely installation."

I. TRAFFIC MITIGATION FEES

The City of Belvedere should consider a policy for Belvedere that would require that new development pay its fair share of the transportation system impacts and help to guarantee their timely installation.

J. SIGHT LINE ISSUES

Site access to and from residences would be provided by existing roads. The posted speeds throughout Belvedere are maximum 25 miles per hour.

Per Caltrans standards, sight lines can be field measured from the position of car at a 3.5-foot eye height (i.e., driver's eye height) exiting a driveway intersection on a major roadway, to a 4.25-foot object height on the major roadway.

Based upon the American Association of State Highway and Transportation Officials (AASHTO) standards, acceptable sight lines (i.e., corner sight distance) should, at a minimum, be based upon a stopping sight distance for vehicles traveling at 25 mph northbound, and 25 mph southbound, on wet pavement.[10] This standard indicates that minimally adequate sight lines for a driver stopped at a driveway would be at least 155 feet in each direction.

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[10] *A Policy on Geometric Design of Highways and Streets*, Chapter III Sight Distance, Stopping Sight Distance-Wet Conditions, American Association of State Highway and Transportation Officials (AASHTO), 2004.

Town of Tiburon Traffic Mitigation Fee Program & Planned Improvements
The Town of Tiburon first established a Traffic Mitigation Fee (TMF) Program in 1980 that was later updated in 1995. Following an update to the *Tiburon General Plan* in 2005, it was necessary to update the fee program again, since the updated General Plan identifies new future development and circulation improvements that were not contained in the 1995 fee program. The TMF fee is based on the number of PM peak hour trips generated by each new project, and the fee varies between designated areas of Town (known as "traffic analysis zones"). The updated fee program was adopted by the Town Council in January 2007. The *Tiburon General Plan* calls for the following improvements that are incorporated into the TMF program:

- Add a second westbound lane on Tiburon Boulevard approaching the intersection with Trestle Glen Boulevard.

- Add a merge/acceleration lane for traffic turning left from Reed Ranch Road onto Tiburon Boulevard. (This proposed improvement has been completed.)

- Consider applying to Caltrans for installation of a traffic signal at Stewart Drive/Tiburon Boulevard to improve safety.

- Consider adding a merge/acceleration lane for traffic turning left from Gilmartin Drive onto Tiburon Boulevard, and/or a dedicated right turn only lane from southbound Gilmartin Drive to westbound Tiburon Boulevard.

- Signalize Mar West Street and Tiburon Boulevard intersection when signal warrants are met.

- Where Tiburon Boulevard intersects the Frontage Road immediately east of U.S. 101: Add a third northbound Frontage Road lane, resulting in one left turn lane, a combined left/through lane, and one right turn lane; or add a third westbound Tiburon Boulevard through lane; or add a third northbound Frontage Road lane and a third westbound Tiburon Boulevard through lane.

- Add a merge/acceleration lane for traffic turning left from Cecilia Way onto Tiburon Boulevard.

IV. OBSERVED OPERATIONAL AND SAFETY CONCERNS – TIBURON BOULEVARD

As a part of the preparation of this report, Crane Transportation Group (the General Plan traffic analyst) conducted observations of existing conditions at intersections along Tiburon Boulevard. These observations are provided below.

Tiburon Boulevard / Redwood Highway Frontage Road This signalized intersection is observed to have lengthy back-ups on the north, east, and west approaches to the intersection.

- Because of the close spacing of off-ramp intersections, the four-lane capacity of the U.S. 101 over-crossing, insufficient turn lanes for some intersection approaches, and overall traffic volume, peak hour traffic results in congestion and back-ups on Tiburon Boulevard through the interchange from the U.S. 101 Southbound Off-Ramp intersection east to the Redwood Highway Frontage Road intersection. The Tiburon General Plan Circulation Element's planned roadway improvements (cited above and included in the TMF program) would address these operational issues. In addition, the overall Tiburon Boulevard interchange design requires all eastbound or westbound traffic approaching the interchange which is destined to the north or south on the freeway to use the curb travel lanes. Eastbound traffic destined for the Redwood Highway Frontage Road also must use the curb travel lane. Thus, many periods occur when there are extended eastbound and westbound vehicle queues in the curb travel lanes on both approaches to the interchange while the median travel lanes have much shorter back-ups. The Marin Countywide Plan implementing program's measure (cited above) to "improve the Tiburon Boulevard overcrossing with additional lanes" would support the purpose of the Tiburon General Plan's TMF program measure to "add a third westbound Tiburon Boulevard through lane; or add a third northbound Frontage Road lane and a third westbound Tiburon Boulevard through lane."

Trestle Glen Boulevard / Tiburon Boulevard This signalized intersection, currently operating at LOS B during the AM and PM peak hours, is observed to have lengthy back-ups on both Tiburon Boulevard intersection approaches. The Tiburon General Plan Circulation Element's planned roadway improvement cited above (add a westbound through lane on Tiburon Boulevard) would address the back-up issue, and support Marin Countywide Plan's policy TR-1.2 requiring maintenance of service standards, TR-1.5 requiring necessary transportation improvements, and implementing programs requiring identification of "impacts and mitigation measures for projects that may result in significant traffic impacts," "require that new development pay its fair share of the transportation system impacts" and "guarantee their timely installation."

V. RESPONSES TO SPECIFIC ISSUES RAISED BY PLAN B MUNICIPAL CONSULTING AND THE CITY OF BELVEDERE

• TRAFFIC CALMING MEASURES

Traffic calming (slowing of speeds) can be achieved for neighborhood streets such as the San Rafael Avenue - Beach Road corridor, the Cove Road - Lagoon Road corridor and other locations identified by Belvedere Police and Public Works departments to be prone to use by vehicles exceeding the speed limit. There are many sources available through the Institute of Transportation Engineers that detail such measures. The following table

lists measures often used to slow traffic speeds in neighborhoods. Any measure would require the participation of the City Engineer and neighborhood consensus.

Desired Goal: • Slow Existing Travel Speeds

Potential Measures
On-Street Parking
Speed Humps/Undulations
Raised Intersections
Variety in Pavement Surface Textures and Colors (can include Intersections/Crosswalks/Bike Lanes/Parking Lanes)
Lateral Shift in Travel Lanes (Chicanes)*
Narrow Travel Lanes (Medians/Edge Treatments)
Constrictions (Landscape Chokers/Neckdowns/Bulbouts) Can be used at intersections to reduce the street width to be crossed by pedestrians
Turn Restrictions
Traffic Circles**
Street Trees and Furniture

*Requires sufficient street width to accommodate both on-street parking and Chicanes and/or medians.

**Traffic circles can potentially eliminate too much on-street parking (if large enough to produce significant speed reductions)

Source: excerpt from *Traffic Calming Measure*s, Institute of Transportation Engineers (ITE) Traffic Calming Definition, ITE Journal, July 1997.

Figure 4 shows locations where specific measures could be considered.

• PROJECT TRAFFIC GENERATION

During the public scoping process for a current project in the planning area, the *2008 Easton Point Residential Project EIR*, several comments were made that standard trip generation rates prepared by the Institute of Transportation Engineers were not representative of residential projects in the Tiburon area. In response to these comments

and in order to determine trip generation rates to be used for the *2008 Easton Point Residential Development EIR*, five days of 24-hour counts were conducted at two Tiburon neighborhoods with characteristics similar to those proposed for the Easton Point residential units:

- large lots (over ½ acre) with landscaped areas,
- homes of 6,000 square feet or more in size, and
- homes valued at $5,000,000 or more

The neighborhoods located on the upper reaches of Reed Ranch Road and the upper reaches of Gilmartin Drive were determined to be the most representative of these characteristics. Count data was determined for the AM and PM peak hours, then averaged for the five count days for each neighborhood. Finally, data for the two locations was averaged, resulting in the following trip generation rate (see Table 6**)**.

Table 6
Trip Generation Rate Results from Two Tiburon Neighborhoods

Location	***AM Peak Hour***			***PM Peak Hour***		
	In	***Out***	***Total***	***In***	***Out***	***Total***
Upper Gilmartin Drive	0.73	0.50	1.22	0.42	0.87	1.29
Upper Reed Ranch Rd	0.42	0.58	1.00	0.50	0.53	1.03
AVERAGE OF BOTH	0.58	0.54	1.12	0.46	0.70	1.16

It was found that the normal pattern of inbound / outbound trips (normally higher outbound in the morning, and higher inbound in the evening) does not hold true for either neighborhood. This is due to the number workers traveling to these homes in the morning and leaving in the afternoon and evening. The neighborhoods are a "work destination" for a large number of workers. This is in contrast to standard rates in common use per the Institute of Transportation Engineers, 8th edition (see **Table 7)**.

Table 7
Trip Generation Rate per ITE 8th Edition (Peak Hour of Adjacent Street Traffic)

Land Use	***ITE Land Use Code***	***AM Peak Hour***			***PM Peak Hour***		
		In	***Out***	***Total***	***In***	***Out***	***Total***
Single-Family	210	0.19	0.56	0.75	0.64	0.37	1.01

Residential							

However, the total two-way trip rate (1.12 for the AM peak hour, and 1.16 for the PM peak hour, is not greatly different than the trip rate documented for Tiburon in its Traffic Fee Program update (see **Table** 8**)**.

Table 8
PM Peak Hour Trip Generation Rate per Tiburon Traffic Mitigation Fee Program Update, November 2006

Land Use	*PM Peak Hour*		
	In	*Out*	*Total*
Single-Family Residential	0.70	0.44	1.14

- **PARKING AND ROADWAYS – RECENT IMPROVEMENTS**

The City has recently (December 2008) prepared a crosswalk evaluation study. The study makes several recommendations to improve signage or pavement striping at specific crosswalk locations.

The City has recently provided effective roadway striping and signage improvements, including improvements at select crosswalks, such as pedestrian warning “paddle” signs.

The City employs a “decoy police officer” to assist in traffic calming. This, along with speed signs, radar by officers, use of a radar trailer, has been an effective set of tools for slowing speeds.

- **COMPLETE STREETS**

Fourteen states, including California, have adopted legislation, resolutions or internal policies that apply Complete Streets principles to state highways. Only California has enacted Complete Streets legislation for all local streets and roads.

The new law requires cities and counties, when updating their general plans, to ensure that local streets and roads meet the needs of all users. The law takes effect in January 2011, when the Governor's Office of Planning and Research issues new general plan update guidelines that reflect Complete Streets planning principles. According to the National Complete Street Coalition, an ideal complete streets policy:

- Includes a vision for how and why the community wants to complete its streets
- Specifies that ‘all users’ includes pedestrians, bicyclists and transit passengers of all ages and abilities, as well as trucks, buses and automobiles.
- Encourages street connectivity and aims to create a comprehensive, integrated, connected network for all modes.

- Is adoptable by all agencies to cover all roads.
- Applies to both new and retrofit projects, including design, planning, maintenance, and operations, for the entire right of way.
- Makes any exceptions specific and sets a clear procedure that requires high-level approval of exceptions.
- Directs the use of the latest and best design standards while recognizing the need for flexibility in balancing user needs.
- Directs that complete streets solutions will complement the context of the community.
- Establishes performance standards with measurable outcomes.
- Includes specific next steps for implementation of the policy.

Performance Measures: The traditional performance measure for transportation planning has been vehicular Level of Service (LOS) – a measure of automobile congestion. Complete streets planning requires taking a broader look at how the system is serving all users. Communities with complete streets policies can measure success through a number of ways: the miles of on-street bicycle routes created; new linear feet of pedestrian accommodation; changes in the number of people using public transportation, bicycling, or walking (mode shift); number of new street trees; and/or the creation or adoption of a new multi-modal Level of Service standard that better measures the quality of travel experience. The fifth edition of Highway Capacity Manual, due out in 2010, will include this new way of measuring LOS.

Implementation: Taking a complete streets policy from paper into practice is not easy, but providing some momentum with specific implementation steps can help. Policies can guide communities to adopt complete streets principles in plans, develop new design guides, institute better ways to measure performance, or offer workshops and other training opportunities to planners and engineers. Some policies establish a task force or commission to work toward policy implementation.

- **CITY OF BELVEDERE TRAFFIC SAFETY COMMITTEE**

The Traffic and Safety Committee is comprised of the City Manager, the City Engineer, the Police Chief, the Public Works Director, members of the public, and one member of the City Council, This committee reviews and decides on all traffic control issues that arise from time-to-time in the community. It meets periodically whenever it has sufficient business to consider. For example, a recent agenda considered a request to mark the upper entry to Belvedere Way with a red curb, and the committee offered feedback on a draft crosswalk study for the City.

Please discuss policies for appropriate use of the public right-of-way for safety and circulation, i.e. don't install any improvement that obstructs the minimum roadway dimension of 20 feet? Nothing that obstructs minimum sidewalk width of 48"? Consider the removal of such obstructions as part of the review for new development.

Belvedere's Policies for Use of the Public Right-of-Way

- **SELECT BUILDING PERMIT APPLICATION REQUIREMENTS IN BELVEDERE**

Staging Plans are required for all but the smallest jobs. They must be in writing and explain how materials will be delivered without closing the road. They must specify where employees will park. Staging Plans are subject to review and discussion in a preconstruction meeting involving the Building Official, Public Works Superintendent, representatives from Police, Fire, Planning, the general contractor, job foreman, and the owner, when requested.

A maximum of three vehicles per project on City streets is allowed. In some cases, the construction of off-street staging areas is required. Barging of materials is encouraged, as is the use of small trucks for deliveries. In areas where there is scant parking, carpooling is required. In some cases off street staging areas have to be constructed. Street blockages will not be tolerated. Violations of the staging plan may result in permit revocation, a re-hearing before the Planning Commission and new fees being assessed. Property owners are advised to budget for the increased costs of building on an island with limited access.

Construction Time Limits: The maximum time for completion of a construction project is limited to from 6 to 18 months, based on the project's cost. If the project is not finished at that time, the matter is referred to the City Council which may fine owners up to $800 for each day the project goes over the time limit approvals, to a maximum of $200,000 or 10 percent of the project valuation, whichever is less (see page 11 for more detail).

- **CITY ORDINANCES WHICH AFFECT CONSTRUCTION AND ROADS**

Each of the ordinances discussed below became law because of serious or persistent problems relating to construction projects. These problem activities have often resulted in a decreased quality of life in Belvedere, endangered the lives of the public or resulted in damage to public property. It is important to understand that a violation of these laws is a misdemeanor and is enforced by the City's police department.

Parking and Debris Boxes
A minimum of 10 feet of paved way must be left clear and unobstructed for free passage of other vehicles. The 10-foot "clear passage" also applies to construction materials. Debris boxes require 12 feet of clearance. In areas where parking places are designated by sign and painted parking spaces on the pavement, vehicle parking is allowed only within the designated parking space. Parking violations result in a $100 fine. Each construction project may park a maximum of three vehicles on City streets.

Encroachment Permits

Generally, an encroachment permit allows an applicant to perform some type of work while on City property. In reviewing these applications, the City may decide to deny a request, modify a request or place conditions on a request. The criteria the City uses to consider these applications usually involves judgments pertaining to public health and safety, convenience or courtesy to residents, maintenance of public facilities or standard design specifications. Staff uses the “three-minute” standard as a general rule of thumb – if a vehicle, equipment, or materials will be in the right-of-way for longer than 3 minutes an encroachment permit is required. Encroachment permits may be issued for a one day fee of $40. The fee for two to seven days is $80. The City of Belvedere issues encroachment permits for the following situations:

• Work Within City Right-of-Way This permit covers just about any commercial activity within the right-of-way (or City property), which extends for some distance beyond the edge of the pavement. Again, public safety and the maintenance of public facilities are the main concerns in the issuance of this permit. Typical activities covered under this permit are construction of sidewalk or driveway approaches, extended loading or unloading of materials or equipment, storage of materials on the roadway, compressors, placement of a debris box, pouring and pumping concrete, utility work, moving trucks, tree services, etc.

• Debris boxes require an encroachment permit for placement on any City street, sidewalk, or other City property. The purpose of this requirement is to regulate where debris boxes may be placed as well as controlling the length of time the boxes remain on City property.

• Road Closures This permit entitles the permitee to completely block a road at a specific address for a specific amount of time. Generally, if an activity upon the City right-of-way does not provide a minimum of 10 feet of clearance for vehicle passage at all times, a road closure permit is required. Activities that sometimes require a road closure permit include: street trenching, concrete pouring, extensive debris loading, furniture moving and some utility work. Of course, road closures are far more common on the narrow streets of Belvedere and Corinthian islands than on the wider streets of the flat land. Requests for road closure on dead-end streets, such as Eucalyptus Road or the 400 block of Golden Gate Avenue are handled differently. So residents may always have some access to or egress from their homes, these dead-end streets may not be blocked for any prolonged period of time. Any vehicle wishing to pass through the work zone must be allowed to do so in a reasonable amount of time, not to exceed 5 minutes. As part of the permit process, applicants must notify, in writing, each resident between the work area and the end of the road.

• Oversized Vehicles Due to the narrow roadways and limited clearance on Belvedere and Corinthian islands, the City cautions large delivery vehicles about the distinct possibility of not being able to access the address to which the delivery is to be made. Please note that on most roads on Belvedere Island south of San Rafael Avenue, vehicles larger than 10 feet high, 8 feet wide and 20 feet long, will encounter difficulty in reaching their destinations without getting stuck or causing

damage to overhanging wires and tree branches. On Corinthian Island, vehicles larger than 9 feet high, 7 feet wide and 20 feet long will definitely have similar problems. If an oversized vehicle illegally blocks a road, its driver will be subject to a $100 citation and the vehicle will be escorted from the island.

The City of Belvedere Municipal Code requires that all projects that would add 100 square feet or more must provide adequate off-street parking.

392083

Notice of Determination

Appendix D

To:

☐ Office of Planning and Research

For U.S. Mail. P.O. Box 3044 Sacramento, CA 95812-3044

Street Address. 1400 Tenth St. Sacramento, CA 95814

☒ County Clerk

County of: County of Marin

Address: P.O. Box E, San Rafael, CA 94913

From:

Public Agency: City of Belvedere

Address: 450 San Rafael Avenue, Belvedere, CA 94920

Contact: Pierce MacDonald, Planning Manager

Phone: (415) 435-3838

Lead Agency (if different from above):

Address:

Contact:

Phone:

SUBJECT: Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.

State Clearinghouse Number (if submitted to State Clearinghouse):

Project Title: City of Belvedere Housing Element Update and General Plan Update

Project Location (include county): City of Belvedere, Marin County, California

Project Description:

The project consists of an update of the existing City of Belvedere General Plan to bring it into conformance with today's standards without any major changes in policy direction, as well as an update of the Housing Element to provide an analysis of the community's housing needs for all income levels and strategies to respond to those needs.

This is to advise that the City of Belvedere ☒ Lead Agency or ☐ Responsible Agency has approved the above described project on June 9, 2010 (Date) and has made the following determinations regarding the above described project:

1. The project [☐ will ☒ will not] have a significant effect on the environment.
2. ☐ An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.
   ☒ A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
3. Mitigation measures [☒ were ☐ were not] made a condition of the approval of the project.
4. A mitigation reporting or monitoring plan [☒ was ☐ was not] adopted for this project.
5. A statement of Overriding Considerations [☐ was ☒ was not] adopted for this project.
6. Findings [☒ were ☐ were not] made pursuant to the provisions of CEQA.

This is to certify that the final EIR with comments and responses and record of project approval, or the negative Declaration, is available to the General Public at: City of Belvedere, City Hall, 450 San Rafael Avenue, Belvedere, CA 94920

Signature (Public Agency) Pierce MacDonald Title Planning Manager

Date 6/15/2010 Date Received for filing at OPR

FILED

JUN 15 2010

MICHAEL J. SMITH
MARIN COUNTY CLERK
BY D. Lebath

Authority cited: Sections 21083, Public Resources Code.
Reference Section 21000-21174, Public Resources Code.

Revised 2005

THE SAN FRANCISCO YACHT CLUB

March 22, 2010

City of Belvedere
450 San Rafael Avenue
Belvedere, CA 94920

Attn: George J. Rodericks, City Manager

By Email to grodericks@cityofbelvedere.org

Ambient Air Quality & Noise Consulting
1214 Park Street, Suite 301
Paso Robles, CA 934446

Attn: Kurt Legleiter, Principal

By Email to kurtl@ambientca.com

Re: City of Belvedere Noise Background Report and General Plan

Dear Mr. Rodericks and Mr. Legleiter:

We are compelled to write this letter to correct the record regarding inaccuracies in the Noise Element of the updated draft 2010 Belvedere General Plan, and in a 13-page report from Ambient Air Quality & Noise Consulting, which is part of the technical reference documents for the 2010 General Plan. This report, entitled Noise Background Report of City of Belvedere General Plan Update, dated November 2009 ("Noise Report") presumably was prepared to satisfy the city's obligation to study the noise environment in Belvedere, including stationary sources of noise, predicted levels of noise, and the impacts of noise on local residents, as required by California law when updating the city's General Plan.

The Noise Report gives the appearance of being an objective document that draws its conclusions from scientific noise measurements, but it is apparent that only a few portions of the Noise Report are based upon these measurements. We do not argue with these scientific measurements or the conclusions drawn from them. Our concern lies with unsubstantiated assertions that the San Francisco Yacht Club located at 98 Beach Road in Belvedere is one of the most significant sources of noise in the city and that the Club's activities in some way need to be regulated. These assertions regarding the Yacht Club are not the result of any scientific measurements or calculations, and they are not the product of any observations or studies that could have been made by Ambient Air Quality & Noise Consulting.

Moreover, these assertions regarding the Yacht Club as a noise source are false and misleading, and if left uncorrected they pose a potential for being misused and misquoted for years to come. We demand that these assertions be retracted, that a revised report be prepared that is incorporated into the General Plan documents, and that the record be set straight regard noise in the City of Belvedere.

The only actual noise monitoring referenced in the Noise Report is a series of short term (ten minute) noise level measurements conducted on November 2, 2009 at ten separate points around the city. These measurements appear to indicate that vehicular traffic, particularly on Tiburon Boulevard and on the main streets in and out of Belvedere (San Rafael Avenue and Beach Road), are the primary contributors to ambient noise in Belvedere.

We agree. These noise measurements do not, however, suggest that the Yacht Club contributes significantly to ambient noise.

One of the noise measurements (Location 7 in Table 2 of the Noise Report) refers to noise generated by the Yacht Club's dredging activities in Belvedere Cove near Beach Road. Dredging at the Yacht Club is a necessary maintenance activity, but it takes place only about every 8 to 10 years – about as often as local streets are resurfaced (an activity that is far more bothersome and creates far more noise than dredging). The ambient noise attributed to dredging was significantly less than the ambient traffic noise measured a short distance away, at Beach Road and Main Street, and it can reasonably be concluded from these measurements that the Yacht Club's occasional dredging activities do not pose a significant noise issue for the city or its residents. It also should be noted that a number of Belvedere residents also dredge the bay to provide access to their private docks, but this dredging was not referenced in the Noise Report.

The Noise Report goes on, in the section entitled "Stationary Sources," to assert that "non-transportation noise sources are predominantly associated with activities conducted at the San Francisco Yacht Club (SFYC) and construction activities." The report lists some of the activities that take place at the Club, but it does not address their frequency, timing, duration or noise volume. More importantly, there is a complete disconnect between a mere listing of socially desirable activities at the Yacht Club and the conclusion that these activities result in the Club being one of the city's most significant sources of noise pollution. This conclusion is false and misleading, it is not supported by any scientific or other evidence, and it must be withdrawn.

Moreover, the Noise Report fails even to mention other sources of noise in Belvedere, all of which are more frequent, louder and potentially more bothersome than anything emanating from occasional activities at the Yacht Club. In this context it should be noted that the Corinthian Yacht Club, whose club house is also located within the city limits of Belvedere, engages in much of the same recreational and social activities as the San Francisco Yacht Club, is not even mentioned in the report.

The Noise Report completely fails to mention Belvedere Park, which undoubtedly is the most significant stationary noise source in the city. The park is the site of daily children's playground activities, teen and adult basketball games, ice cream vendors, at least four major concert events per year (which feature amplified music and voice for several hours, and which are audible throughout the city), an annual parade, a variety of children's parties that may include "jumpie houses", and a host of other activities.

The Noise Report also fails to address significant transient noise sources that generate far more noise than the Yacht Club, including daily trash collection (particularly collection activities outside of the "quiet hours" established by the Belvedere Noise Ordinance, B.M.C. §§ 8.10.010 – 8.10.060), various street, utility, building and grounds maintenance activities, street cleaning trucks, storm drain cleaning trucks, and the utility undergrounding work that has been ongoing for years, and which will continue for a number of years in the future.

We are not intending to register complaints about any of these activities, as all are part of the fabric of our community, but so is the Yacht Club. What causes us concern is that the planning staff is apparently singling out the Yacht Club as a "problem" in need of a solution, to the exclusion of other activities.

The Noise Report also fails to address the full magnitude and scope of noise caused by construction job sites and from the trucks that travel to and from those sites. Trucks, ranging from pickups to heavy diesel tractor-trailer combinations, make hundreds of trips daily through Belvedere, hauling construction materials, workers, equipment and debris. The Yacht Club takes occasional deliveries, but not on a scope anywhere near that of construction job sites around the city.

In closing, we ask for three things: (1) that the Noise Report be withdrawn and rewritten to delete its references to the Yacht Club as a significant stationary noise source, and to address the other noise sources discussed above, (2) that the words "yacht club" be deleted from the first paragraph of page 190 in the Noise Element section of the March, 2010 draft of the General Plan, and (3) that the city work to develop a better relationship with the Club on planning and zoning issues.

The San Francisco Yacht Club has been a member of the Belvedere Community since 1927. I am a resident of Belvedere, and I have been a member of the club for thirty years. More than 300 Belvedere residents are members of the Club. The Club at all times has been a good citizen and we host a variety of community programs. Our facilities and activities are an integral part of the lives of many Belvedere residents, and we have rules and procedures in place to prevent the creation of bothersome noise. We simply fail to understand why the Club suddenly has become the subject of repeated attacks from planning staff, who appear to be searching for problems that do not exist.

We welcome the opportunity to correct the public record on these issues and to initiate a more constructive dialog with the City of Belvedere on planning and zoning issues.

Very truly yours,

Robert Heller
Vice Commodore

cc: Belvedere General Plan Committee

From: Ananya Choudhuri [mailto:AChoudhuri@PMCWorld.com]
Sent: Friday, April 23, 2010 3:23 PM
To: Pierce Macdonald - Planning Manager
Subject: RE: IS/MND City of Belvedere

Pierce~

In response to the San Francisco Yacht Club (SFYC) comment letter, PMC in consultation with our noise subconsultant, AMBIENT Air Quality and Noise Consulting, will be revising the Draft IS/MND for the General Plan Update to delete all references to the SFYC within the document. Since any such yacht and sailing clubs will continue to be potential noise sources that may have noise impacts, we will replace all references to the SFYC with something more generic such as "private clubs" or "private boating clubs".

Please let me know if I can be of further assistance. Thanks,

~Anna

PMC
1590 Drew Avenue, Suite 120
Davis, CA 95618
(530) 601-2501 (office)
(530) 848-9483 (cell)
(530) 750-2811 (fax)
achoudhuri@pmcworld.com

FEDERATED INDIANS OF GRATON RANCHERIA

Sacred Sites Protection Committee
6400 Redwood Drive, Suite 300
Rohnert Park, CA 94928
707- 566-2288

RECEIVED
APR 06 2010
City of Belvedere

April 4, 2010

Pierce MacDonald
City of Belvedere
450 San Rafael Ave.
Belvedere, CA 94920

Dear Pierce:

The Federated Indians of Graton Rancheria, a federally recognized Tribe and sovereign government, has received the draft of the "Cultural, Archaeological, and Historic Preservation Element for the City of Belvedere's General Plan update. We appreciate the opportunity to provide comments and work with the City to preserve historic and prehistoric resources. After careful review of the draft, the Tribe provides the comments.

The use of "sensitivity areas" should be used as only one of many tools to determine the sensitivity of a project. It should never be used a sole instrument of determining potential impacts, per federal and state regulations. It does account for sacred, gathering or ceremonial areas of our Tribe's culture. We also request further information from you on independent studies and empirical research on the reliability and accuracy of the methods used this "sensitivity area" strategy as a reliable method.

Another method to consider for determining archaeological sensitivity is the use of "geo archaeological" techniques or methods. Your plan should at the very least reference this method as an option.

The Tribe should be consulted on all projects in Belvedere for possible impacts to its cultural resources. We have many sites that are considered sacred or ceremonial and are kept confidential. It is current the policy of some cities and counties to email all initial permit application to the Tribe for our review and comments. If we have concerns, it is then our responsibility to communicate them to the City. This insures comments are provided early enough in the process to allow for the appropriate actions, if needed.

Please contact me if you have further questions about our comments. You can either email or mail the research information validating the use of "sensitivity areas".

Respectfully,

Nick Tipon

Chairman: Sacred Sites Protection Committee

Nick Tipon
Chairman, Sacred Sites Committee
Federated Indians of Graton Rancheria
6400 Redwood Drive, Suite 300
Rohnert Park, CA 94928

Re: Response to FIGR General Plan comment letter dated April 4, 2010

Dear Mr. Tipon,

Thank you for your letter dated April 4, 2010 regarding the Tribe's review of the Belvedere 2030 General Plan. The City appreciates your careful review of the document, and your participation in the SB 18 consultation process for Belvedere's General Plan Update has been very valuable. You raised a couple of questions in your comment letter to which I wanted to provide a response.

The General Plan has been carefully crafted to address a wide range of community issues and to guide Belvedere's progress over the next 20 years. It is a long-range document that sets the framework for the development of the community for the next two decades, and as such, it does not attempt to address each issue in great detail, but in many cases it sets the stage for future actions to be taken. Several of the policies related to Historical, Cultural, and Archaeological Resource protection identify an important issue, and formalize an action to be taken to address the issue.

For instance, Policy Pres-3.2 states that the City shall *"Continue to consult with the Federated Indians of Graton Rancheria on issues of mutual concern such as the continued preservation of Native American cultural resources, as well as when amending the General Plan, adopting or amending a Specific Plan, designating open space, and at any other times as required by State Law."* The action item that will take place to implement that policy is Action Pres-3.2.1, which states that the City shall *"Develop and implement consultation protocols with the Federated Indians of Graton Rancheria for the review of development proposals. The protocols should include thresholds for requiring FIGR monitoring or involvement in project review."* This action will be implemented after the General Plan has been adopted by the City Council, and the specifics of the consultation protocols will be worked out at a future date.

In the same fashion, Policy Pres-3.2 states that the City shall *"Create and maintain tools to alert residents and City Staff of the potential existence of archaeological and cultural resources, including a Prehistoric Resource Sensitivity Map."* The Sensitivity Map will not be the only tool used to determine the likelihood of encountering cultural resources on a property, but it is a new tool that the City intends to use to heighten awareness of the potential for discovering resources on any given property so that property owners can be made aware in advance of any application for development. Additionally, Action Pres-3.3.1 commits the City to develop protocols to apply to properties that are shown as having a medium or high sensitivity, where the City will require that additional studies be done in order to assess the existence of resources. Some of the assessment techniques mentioned in Action Pres-3.3.1 are test borings, test excavations, as well as the potential for a complete resource survey and a Tribal

monitor if the testing yields positive results. The Sensitivity Map is simply an indicator, not a definitive statement on whether resources exist.

The City is proposing the use of the Sensitivity Maps as tool that can be used in addition to the City's existing protocols and collaboration with the Tribe, which currently includes:

- City collection of environmental information for each development application that provides an indication as to whether a site has a known history of archaeological or cultural resource value;
- Standard conditions of approval which apply to all development projects that require a certain course of action should archaeological or cultural resources be discovered during site disturbance;
- 20-day Tribal notification for all public hearings on development applications; and
- Immediate Tribal notification if midden deposits are discovered during site disturbance.

The City of Belvedere remains committed to working with the Tribe to protect cultural resources in Belvedere, and continues to value the collaborative relationship between our two governments. The City hopes that the Tribe will view these new policies and actions in the General Plan as efforts that supplement and enhance our efforts to respect and protect Tribal resources while providing good customer service to the members of our community.

Thank you again for your comments on the Draft General Plan, and I look forward to working with the Tribe in the near future to develop the consultation protocols.

Sincerely,

Pierce Macdonald
Planning Manager

CALIFORNIA ENERGY COMMISSION
1516 NINTH STREET
SACRAMENTO, CA 95814-5512
www.energy.ca.gov

April 20, 2010

Pierce MacDonald
City of Belvedere
450 San Rafael Avenue
Belvedere, CA 94920

Dear Mr. MacDonald:

The California Energy Commission has received the City of Belvedere's Mitigated Negative Declaration titled City of Belvedere Housing Element Update and General Plan Update, SCH 2010032090 that was submitted on 3/25/2010 for comments due by 4/23/2010. After careful review, the Energy Commission has found the following:

We would like to assist in reducing the energy usage involved in your project. Please refer to the enclosed Appendix F of the California Environmental Quality Act for how to achieve energy conservation.

In addition, the Energy Commission's *Energy Aware Planning Guide* is also available as a tool to assist in your land use planning. For further information on how to utilize this guide, please visit www.energy.ca.gov/energy_aware_guide/index.html.

Thank you for providing us the opportunity to review/comment on your project. We hope that our comments will be helpful in your environmental review process.

If you have any further questions, please call Gigi Tien at (916) 651-0566.

Sincerely,

Bill Pfanner

BILL PFANNER
Supervisor, Local Energy & Land Use Assistance Unit
Special Projects Office
Fuels and Transportation Division
California Energy Commission
1516 Ninth Street, MS 23
Sacramento, CA 95814

Enclosure

Appendix F
ENERGY CONSERVATION

I. Introduction

The goal of conserving energy implies the wise and efficient use of energy. The means of achieving this goal include:

(1) decreasing overall per capita energy consumption,
(2) decreasing reliance on natural gas and oil, and
(3) increasing reliance on renewable energy sources.

In order to assure that energy implications are considered in project decisions, the California Environmental Quality Act requires that EIRs include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy.

Energy conservation implies that a project's cost effectiveness be reviewed not only in dollars, but also in terms of energy requirements. For many projects, lifetime costs may be determined more by energy efficiency than by initial dollar costs.

II. EIR Contents

Potentially significant energy implications of a project should be considered in an EIR. The following list of energy impact possibilities and potential conservation measures is designed to assist in the preparation of an EIR. In many instances, specific items may not apply or additional items may be needed.

A. Project Description may include the following items:
   1. Energy consuming equipment and processes which will be used during construction, operation, and/or removal of the project. If appropriate, this discussion should consider the energy intensiveness of materials and equipment required for the project.
   2. Total energy requirements of the project by fuel type and end use.
   3. Energy conservation equipment and design features.
   4. Initial and life cycle energy costs or supplies.
   5. Total estimated daily trips to be generated by the project and the additional energy consumed per trip by mode.

B. Environmental Setting may include existing energy supplies and energy use patterns in the region and locality.

C. Environmental Impacts may include:
   1. The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project's life cycle including construction, operation, maintenance and/or removal. If appropriate, the energy intensiveness of materials may be discussed.
   2. The effects of the project on local and regional energy supplies and on requirements for additional capacity.
   3. The effects of the project on peak and base period demands for electricity and other forms of energy.
   4. The degree to which the project complies with existing energy standards.
   5. The effects of the project on energy resources.
   6. The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

D. Mitigation Measures may include:
   1. Potential measures to reduce wasteful, inefficient and unnecessary consumption of energy during construction, operation, maintenance and/or removal. The discussion should explain why certain measures were incorporated in the project and why other measures were dismissed.
   2. The potential of siting, orientation, and design to minimize energy consumption, including transportation energy.
   3. The potential for reducing peak energy demand.
   4. Alternate fuels (particularly renewable ones) or energy systems.
   5. Energy conservation which could result from recycling efforts.

E. Alternatives should be compared in terms of overall energy consumption and in terms of reducing wasteful, inefficient and unnecessary consumption of energy.

F. Unavoidable Adverse Effects may include wasteful, inefficient and unnecessary consumption of energy during the project construction, operation, maintenance and/or removal that cannot be feasibly mitigated.

G. Irreversible Commitment of Resources may include a discussion of how the project preempts future energy development or future energy conservation.

H. Short-Term Gains versus Long-Term Impacts can be compared by calculating the energy costs over the lifetime of the project.

I. Growth Inducing Effects may include the estimated energy consumption of growth induced by the project.

Making San Francisco Bay Better

April 22, 2010

Ms. Pierce MacDonald
City of Belvedere
City Planning Department
450 San Rafael Avenue
Belvedere, CA 94920-2336

SUBJECT: BCDC Inquiry File MR.BE.6928.1; Notice of Intent to Adopt a Mitigated Negative Declaration, City of Belvedere General Plan Update and Housing Element Update

Dear Ms. Macdonald:

Thank you for the opportunity to comment on the Notice of Intent to Adopt a Mitigated Negative Declaration, dated March 2010, and received in our office on March 25, 2010. These are staff comments based on the San Francisco Bay Conservation and Development Commission (BCDC) laws and regulations, the McAteer-Petris Act, and the provisions of the *San Francisco Bay Plan* (Bay Plan) and the Richardson Bay Special Area Plan. In particular, these comments are related to BCDC jurisdiction within the project area, transportation and sea level rise/global climate change.

Jurisdiction and Authority. As a permitting authority along the San Francisco Bay shoreline, BCDC is responsible for granting or denying permits for any proposed fill (earth or any other substance or material, including pilings or structures placed on pilings, and floating structures moored for extended periods), extraction of materials or change in use of any water, land or structure within the Commission's jurisdiction. Generally, BCDC's jurisdiction over San Francisco Bay extends from the Golden Gate to the Sacramento River and includes tidal areas up to the mean high tide level, including all sloughs, and in marshlands up to five feet above mean sea level; a shoreline band consisting of territory located between the shoreline of the Bay and 100 feet landward and parallel to the shoreline; salt ponds; managed wetlands (areas diked from the Bay and managed as duck clubs); and certain waterways tributary to the Bay. The Commission can grant a permit for a project if it finds that the project is either (1) necessary to the health, safety or welfare of the public in the entire Bay Area, or (2) is consistent with the provisions of the McAteer-Petris Act and the Bay Plan. The McAteer-Petris Act provides for fill in the Bay for water-oriented uses where there is no alternative upland location and requires that any fill that is placed in the Bay is the minimum that is necessary for the project. The McAteer-Petris Act also requires that proposed projects include the maximum feasible public access consistent with the project to the Bay and its shoreline.

For BCDC's Bay jurisdiction, an essential part of BCDC's regulatory framework is the Commission's Bay Plan. Projects approved by BCDC must be consistent with the McAteer-Petris Act and the Bay Plan. The Bay Plan includes priority land use designations for certain areas around the Bay to ensure that sufficient areas around the Bay are reserved for important water-oriented uses such as ports, water-related industry, parks, and wildlife areas. Along the Belvedere shoreline there is one priority land use area designations which includes land designated for "Waterfront Park and Beach" along San Rafael Avenue. Projects within BCDC's jurisdiction that are inconsistent with these designations require an amendment to the Bay Plan.

Sea Level Rise and Safety of Fills. BCDC recently conducted an assessment of the region's vulnerability to sea level rise which is based on a projected 16-inch sea level rise at mid century (2050) and 55-inch sea level rise at the end of the century (2100). Bay Plan findings and policies anticipate the need for planning associated with safety of fills and sea level rise. The safety of fills findings state, in part, "structures on fill or near the shoreline should be above the highest expected

water level during the expected life of the project...Bay water levels are likely to increase in the future because of a relative rise in sea level... Relative rise in sea level is the sum of: (1) a rise in global sea level and (2) land elevation change (lifting and subsidence) around the Bay." Bay Plan policies on safety of fills state, in part, "local governments and special districts with responsibilities for flood protection should assure that their requirements and criteria reflect future relative sea level rise and should assure that new structures and uses attracting people are not approved in flood prone areas or in areas that will become flood prone in the future, and that structures and uses that are approvable will be built at stable elevations to assure long-term protection from flood hazards." Projects in BCDC jurisdiction that involve bay fill must be consistent with the Bay Plan policies on the safety of fill and sea level rise.

BCDC supports the City of Belvedere's inclusion of sea level rise considerations within the proposed updates to the General Plan and Housing Element. However, the proposed update fails to include policies for areas within the City that are likely to be vulnerable to sea level rise, such as the shoreline adjacent to Belvedere Lagoon and along Beach Road and West Shore Road. In order to recognize this vulnerability and develop a policy framework for addressing it, BCDC staff recommends that Policy HAZ-2.2 which states "Any proposed new development along the shoreline and in the Belvedere Lagoon area should be evaluated for its potential for adverse impacts from tsunamis" be changed to also evaluate the adverse impacts from sea level rise.

Additionally, the update should consider the potential impacts of sea level rise upon other components of the document such as the Biological Resources, Hazards, Hydrology and Water Quality, Recreation and Transportation sections. For example, the Transportation / Traffic Environmental Analysis section does not analyze the potential impact of sea level rise upon the transportation network such as Tiburon Boulevard, the streets around Belvedere Lagoon or the public transportation service provided by Golden Gate Transit via bus and ferry. Due to the amount of infrastructure that the City of Belvedere has that is in proximity to the Bay it is important consider the potential impacts of sea level rise upon these important transportation corridors and services.

Also, as this Mitigated Negative Declaration is for the General Plan Update and the Housing Element Update, it may be timely for the City to consider amending the Municipal Code standards to require residential structures to be more than one foot above the base flood elevations in a flood zone to account for projected sea level rise.

BCDC staff would be interested in learning more about the preparation of the master plan for all shoreline properties as indicated in Action LU-1.8.1 as well as the effort to establish a citizen's committee comprised of Lagoon Area residents and the Belvedere Lagoon Property Owners Association to evaluate the feasibility and implementation issues associated with seawall design and construction as mentioned in Action HAZ-2.6.1.

Finally, BCDC is a state agency and as such should be noted under "State Laws and Regulation" rather than "Local Laws, Regulations and Policies" on page 4.0-46.

Thank you for the opportunity to comment on the Notice of Intent to Adopt a Mitigated Negative Declaration. If you have any questions regarding this letter please contact me directly at (415) 352-3667 or by e-mail at timd@bcdc.ca.gov.

Sincerely,

TIMOTHY DOHERTY
Coastal Program Analyst

TD/gg

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
111 GRAND AVENUE
P. O. BOX 23660
OAKLAND, CA 94623-0660
PHONE (510) 622-5491
FAX (510) 286-5559
TTY 711

Flex your power!
Be energy efficient!

April 22, 2010

MRNGEN072
SCH2010032090

Mr. Pierce Macdonald
City of Belvedere
City Planning Department
450 San Rafael Ave.
Belvedere, CA 94920-2336

Dear Mr. Macdonald:

HOUSING ELEMENT AND GENERAL PLAN UPDATE – MITIGATED NEGATIVE DECLARATION

Thank you for including the California Department of Transportation (Department) in the environmental review process for the City of Belvedere Housing Element and General Plan Update. The following comments are based on the Mitigated Negative Declaration.

Community Planning
The Department encourages you to locate any needed housing near your public transportation stations, and connected to these stations with streets configured to facilitate walking and biking, as a means of promoting mass transit use and reducing regional vehicle miles traveled and traffic impacts on the state highways.

Please feel free to call me at (510) 622-5491 with any questions regarding this letter.

Sincerely,

Lisa Carboni

LISA CARBONI
District Branch Chief
Local Development - Intergovernmental Review

c: State Clearinghouse

STAFF REPORT ATTACHMENT

DATE: 05-25-2010

ITEM NO. 2

Joint Meeting of the Belvedere City Council and Planning Commission
May 25, 2010

Commissioners and Councilpersons –

I am sorry to be out of town for this meeting, because I wanted to publicly address an issue contained in the Public Review Draft, Volume One of the General Plan 2030, dated March15, 2010. I wanted to share my thoughts prior to the June 9th final review.

My concern deals with **Section 3, Chapter 1: Land Use Element, Issue #2 – R-15 District Development Regulations.** It reads as follows:

Subsequent discussions with residents, the Planning Commission, and the City Council established that exceedingly large homes are not generally characteristic of development on Belvedere Island. For example, only four existing homes are larger than 10,000 square feet in size and these were developed under earlier Zoning Ordinance regulations. While establishing a specific maximum house size has been an issue of debate, it is useful to acknowledge that exceedingly large homes (such as larger than 10,000 square feet) are not characteristic of the community. (pg. 37)

My concern stems from the use of 10,000 square feet as the example. The exact number for "maximum house size" will not be determined tonight nor in the General Plan document. The Planning Commission has been charged with studying the issue and making a recommendation.

I believe that the inclusion of this exceedingly large number – not once, but twice – may be misconstrued as an agreement on, or a recommendation for, that development limit. A number is not necessary in this section and 10,000 does not reflect the discussion content nor the conclusions of the R-15 Citizen's Committee, The Planning Commission, the City Council, or the General Plan Update Steering Committee.

It is correct that "very few homes on Belvedere Island are greater than 10,000 square feet". Only 4 of the 500 homes in the R-15 zone currently exceed that size. That information was presented at the Joint Meeting held on September 10, 2009. However, that number does not reflect a synthesis of various opinions or a consensus arrived at after discussions. It was simply a fact presented by staff and the consultants to the assembled group and deemed "non-controversial". There are only 12 homes that exceed **8000 square feet** in the R-15 zone. That number, 8000, could just as easily have been used as the example.

Several members of the General Plan Steering Committee raised concerns with using the 10,000 sq. ft number in the Belvedere General Plan 2030 document. Dr. Sams suggested

the sentence including the number be taken out of the document entirely. Chairman Lasky stated the Policy would be fine with (*this*) second sentence deleted. (minutes of the General Plan Update Steering Committee meeting 2/24/10) The recommended removal did not occur.

The 10,000 square foot example is used twice in this proposed section, It is a striking number, inconsistent with the General Plan Update meetings and its inclusion could be easily misunderstood by Belvedere residents and eager developers. Until the Planning Commission and City Council approve a maximum square footage limit, I suggest that we either remove this number entirely or discuss the use of a lesser number. The 8000 square foot example would also be a factual statement.

Thank you for the opportunity to share my view.

Sandy Donnell

CITY OF BELVEDERE
GENERAL PLAN

To: City Council
Planning Commission

From: Pierce Macdonald, Planning Manager
Kevin Gardiner and Kristi Bascom, General Plan Consultants

Date: May 25, 2010

Re: Belvedere 2030 General Plan: Proposed Changes to Public Review Draft dated March 15, 2010

On March 15, 2010, the City released the Public Draft version of the Belvedere 2030 General Plan for review and comment. Concurrently, the public review draft of the accompanying CEQA Mitigated Negative Declaration, was circulated for a 30-day public review period that ran from March 25 to April 25, 2010.

During the review period, the City received comment letters on the documents from the following sources:

- San Francisco Yacht Club (SFYC), dated March 22, 2010
- Federated Indians of Graton Rancheria (FIGR), dated April 4, 2010-05-11
- California Energy Commission, dated April 20, 2010
- Bay Conservation and Development Commission (BCDC), dated April 22, 2010
- State of California Department of Transportation (CalTrans), dated April 22, 2010

Staff proposes the following changes to the 2030 General Plan to address the comments:

San Francisco Yacht Club:
References to the San Francisco Yacht Club or SFYC will be struck from the background Noise Analysis, prepared by Ambient and contained in the General Plan Appendices (Volume 3 of the General Plan). The term "private clubs" will be used to assess the potential noise from existing organizations such as SFYC, Corinthian Yacht Club, and the Lagoon Sailing Society. Additionally, Staff proposes to add the following background text to the Setting section of the Noise Element, under No. 2, Sources:

> "Because Belvedere is a fairly quiet community, intermittent noise sources are noticeable. Many of the community organizations and private clubs have occasional events and activities that can be sources of noise on an intermittent basis. However, these community organizations and private clubs, such as the Lagoon Sailing Society, San Francisco Yacht Club, and Corinthian Yacht Club, have a long history in Belvedere and contribute greatly to community identity, so the intermittent noise sources created under normal operating conditions are considered acceptable."

Federated Indians of Graton Rancheria:
The City sent the tribe a response, expanding on several of the policy items contained in the General Plan, but staff is not proposing to make any changes to the background text or policy language contained in the General Plan based on the comment letter.

California Energy Commission:
Staff is not proposing to make any changes to the background text or policy language contained in the General Plan based on the comment letter.

Bay Conservation and Development Commission:
Comments from BCDC related to recognizing the potential for future sea level rise in the 2030 General Plan. Staff proposes to make the following modifications:

In the Environmental Hazards, Safety, and Stability Element, edit Policy HAZ-2.2 to add the underlined text: "Any proposed new development along the shoreline and in the Belvedere Lagoon area should be evaluated for its potential for adverse impacts from tsunamis and sea level rise."

In the Transportation and Circulation Element, add the following background text to the "Roadway Network" section: "All of the main thoroughfares in Belvedere listed above are located in lower-lying areas, which could be subject to future flooding. It will be important for the City to consider the potential impacts of sea level rise on these important transportation corridors."

California State Department of Transportation:
Staff is not proposing to make any changes to the background text or policy language contained in the General Plan based on the comment letter.

Additional changes proposed by Staff:
Since the Draft 2030 General Plan was released in March, a report has been received and considered by City Staff, and should be added to the General Plan. Staff proposes to add the following background text to the "Bicycle and Pedestrian Programs" section of the Transportation and Circulation Element of the General Plan:

"In January of 2010, Margen & Associates submitted a report on the City's compliance with the Americans with Disabilities Act (ADA). While the City is not required by the 1990 Americans with Disabilities Act to provide a transition plan because the number of City staff members is below the required threshold, the City is required by the Act to provide accessibility to public facilities, programs, services, and employment. Further ADA Title II regulations require public entities that have authority over streets and sidewalks to have a plan that prioritizes the establishment of accessibility features where lacking and when feasible. The City is developing and will continue to develop annually, an ADA Work Plan as part of its Capital Improvements Plan and budget."

Staff and the Consultant Team looks forward to discussing the 2030 General Plan and these proposed modifications with the City Council and Planning Commission at the join meeting on Monday May 25th.

CITY OF BELVEDERE

RESOLUTION NO. 2010-15

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF BELVEDERE ADOPTING AN INITIAL STUDY, MITIGATED NEGATIVE DECLARATION, AND MITIGATION MONITORING AND REPORTING PROGRAM FOR THE PROPOSED AMENDMENTS AND UPDATES TO THE CITY OF BELVEDERE GENERAL PLAN AND HOUSING ELEMENT

WHEREAS, the City of Belvedere has prepared an amended and updated General Plan and Housing Element (GP/HE) for the City following numerous public hearings, community workshops, and meetings of the Council-appointed General Plan Update Steering Committee; and

WHEREAS, the City Planning Staff, as well as planning consultants hired by the City specifically to work on the GP/HE Update, has determined that the amended GP/HE is subject to the provisions of the California Environmental Quality Act (CEQA) and has prepared an Initial Study, Mitigated Negative Declaration, and Mitigation Monitoring and Reporting Program (MMRP) pursuant to CEQA to investigate and address potential environmental impacts; and

WHEREAS, the Planning Commission held a public hearing on April 26, 2010, to consider the Initial Study and Mitigated Negative Declaration and recommended its approval to the City Council; and

WHEREAS, the City Council held public hearings on the Initial Study and Mitigated Negative Declaration on May 25, 2010, and June 9, 2010; and

WHEREAS, the City Council has made a finding of fact that, with the recommended mitigations included in the MMRP, attached hereto as Exhibit A, and with the policies and actions in the proposed GP/HE Update, the potential impact to the environment would be less than significant.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Belvedere that the Initial Study (dated February 2010), Mitigated Negative Declaration (dated February 2010), and the Mitigation Monitoring and Reporting Program for the General Plan and Housing Element Update--inclusive of final changes recommended in the Staff Report prepared for the June 9, 2010, City Council public hearing--is hereby adopted.

PASSED AND ADOPTED at a special meeting of the City Council of the City of Belvedere on June 9, 2010, by the following vote:

AYES: Gerald Butler, Thomas Cromwell, Sandra Donnell, John C. Telischak, and Mayor Barbara H. Morrison

NOES: None

ABSENT: None
ABSTAIN: None

APPROVED: B H Morrison
Barbara H. Morrison, Mayor

ATTEST: Leslie Carpentiers
Leslie Carpentiers, Deputy City Clerk

EXHIBIT A

CITY OF BELVEDERE
Mitigation Monitoring and Reporting Program

INTRODUCTION

This document is the Mitigation Monitoring and Reporting Program (MMRP) for the City of Belvedere General Plan. This MMRP has been prepared pursuant to Section 21081.6 of the California Public Resources Code, which requires public agencies to "adopt a reporting and monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment." A MMRP is required for the proposed project because the IS/MND has identified significant adverse impacts, and measures have been identified to mitigate those impacts.

Mitigation Monitoring and Reporting Program

The mitigation measures identified in the City of Belvedere General Plan Final IS/MND have been structured to be incorporated as policies and/or action items into the General Plan policy document and thus, would be implemented as part of consideration of subsequent projects within the City. Implementation would consist of determining whether subsequent projects are consistent with the General Plan, utilization of policies and action items as conditions of approval and/or mitigation measures and City-initiated planning activities as required by specific policies and action items. The MMRP, as outlined in the following table describes mitigation measures and where they are to be placed in the City of Belvedere General Plan.
The City of Belvedere will be the primary agency for monitoring the mitigation measure implementation associated with implementation of the General Plan.

The MMRP is presented in tabular form on the following page.

Proposed Mitigation	Mitigation Measure Description	Placement in General Plan	Verification
4.3 Air Quality			
MM AQ 1	The City shall utilize the thresholds of significance for construction-related criteria pollutant emissions as the absence/presence of Bay Area Air Quality Management District performance-based best management practices. As these best management practices may change over time at the discretion of the Bay Area Air Quality Management District, District staff shall be consulted on a case-by-case basis in order to ensure the most recent best management practices are used.	Sustainability and Resources Conservation Element Policy Sust-13.1	
4.5 Cultural and Paleontological Resources			
MM 4.5.1	Discovery of Unanticipated Paleontological Resources. In the event paleontological resources are uncovered during construction, all work must be halted and an evaluation must be undertaken by a qualified paleontologist to identify the appropriate mitigation for the feature.	Preservation Element Policy Pres-3.1.6	
4.6 Noise			
MM N1	The City shall adopt and apply quantitative noise standards for stationary noise sources, to be incorporated into the City of Belvedere Municipal Code (Title 8, Health & Safety, Chapter 8.10, Noise) for the resolution of noise complaints associated with existing sources.	Noise Element Action N-1.1.2	

CITY OF BELVEDERE

RESOLUTION NO. 2010-16

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF BELVEDERE AMENDING THE CITY OF BELVEDERE GENERAL PLAN AND HOUSING ELEMENT

WHEREAS, the City of Belvedere last adopted amendments to its Housing Element in 2005 and to other parts of its General Plan in 1994; and

WHEREAS, the City of Belvedere determined that it was timely to revise and update its General Plan and to bring it into conformance with the state guidelines regarding general plans; and

WHEREAS, the City Staff and planning consultants hired by the City specifically to work on the General Plan and Housing Element (GP/HE) prepared draft amendments and updates to the GP/HE for review by the General Plan Update Steering Committee, community focus groups, the Planning Commission, and the City Council; and

WHEREAS, the General Plan Update Steering Committee, a special citizens' committee appointed by the City Council, has reviewed and made recommendation based on those proposed amendments and updates in 30 public meetings held between December 12, 2007, and March 24, 2010; and

WHEREAS, the Planning Commission has reviewed and made recommendations based on those proposed amendments and updates following public hearings on May 19, 2009, September 22, 2009, October 20, 2009, and April 26, 2010, and additional discussions in public meetings on May 27, 2008, February 3, 2009, September 10, 2009, and January 5, 2010; and

WHEREAS, on April 26, 2010, the Planning Commission forwarded the Updated GP/HE to the City Council with the recommendation that it be adopted; and

WHEREAS, on May 25, 2010, the City Council and Planning Commission held a joint public hearing for the purpose of discussing the Planning Commission's recommendation and reviewing the Updated GP/HE; and

WHEREAS, the City Council has held public hearings on the amendments and updates to the GP/HE on June 8, 2009, November 9, 2009, May 25, 2010, and June 9, 2010, and has discussed them in additional public meetings on July 9, 2007, May 27, 2008, February 3, 2009, September 10, 2009, and March 8, 2010; and

WHEREAS, on June 9, 2010, the City Council made a finding of fact that, with the recommended mitigations included in the Mitigation Monitoring and Reporting Program Plan and with the policies and actions in the proposed GP/HE, the potential impact to the environment would be less than significant; and

WHEREAS, on June 9, 2010, the City Council adopted by Resolution No. 2010-15 an Initial Study, Mitigated Negative Declaration, and Mitigation Monitoring and Reporting Program for the GP/HE—inclusive of final changes recommended in the Staff Report prepared for the June 9, 2010, City Council public hearing.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Belvedere that, pursuant to Section 65300 et seq. of the California Government Code, it does hereby adopt the amendments to the Belvedere General Plan and Housing Element found in the document entitled, "City of Belvedere General Plan 2030," Volumes 1, 2, and 3, dated March 15, 2010, with the final changes to the documents described in Attachments 1, 2 and 4 of the Staff Report prepared for the June 9, 2010, City Council public hearing and described in the Minutes of the June 9, 2010, special City Council meeting.

PASSED AND ADOPTED at a special meeting of the City Council of the City of Belvedere on June 9, 2010, by the following vote:

AYES: Gerald Butler, Thomas Cromwell, Sandra Donnell, John C. Telischak, and Mayor Barbara H. Morrison
NOES: None
ABSENT: None
ABSTAIN: None

APPROVED: B H Morrison
Barbara H. Morrison, Mayor

ATTEST: Leslie Carpentier
Leslie Carpentiers, Deputy City Clerk