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Subject: Mallard Pointe Transportation Study; Belvedere, CA

1. INTRODUCTION

This study has been conducted to determine and report the potential transportation impacts associated with the proposed 'Mallard Pointe' residential development along Mallard Road in Belvedere, California ("Project").

As originally defined, the Project would replace 11 existing duplex buildings containing 22 residential units along Mallard Road with 42 residential units in a combination of single-family homes (six single-family housing units), duplexes (10 units), accessory dwelling units (three ADUs located above three of the single-family garages), and an apartment complex containing 23 units in a two-story building over a semi-subterranean structure. However, as currently defined, the Project proposes 40 total units (six single-family homes, 10 duplex units, 23 apartment units, and one ADU). The analysis provided herein evaluates the Project as originally proposed, i.e., 42 residential units, to provide a more conservative impact analysis.

For the purposes of this study and based on CEQA Guidelines, implementation of the proposed Project would have a significant impact on transportation and traffic if it would:

- Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities;
- Conflict or be inconsistent with CEQA Guidelines Section 15064.3, Subdivision (b) regarding Vehicle Miles Traveled (VMT);
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or
- Result in inadequate emergency access.

Additionally, the following transportation topics are addressed in the study:

- A parking study to analyze potential on-street parking impacts for the Project site and adjacent streets
- An access study to identify potential multimodal safety issues and recommended improvements to mitigate these issues, if necessary

Figure 1 shows an overview of the Project location. Figure **2** provides the site plan of the proposed Project.

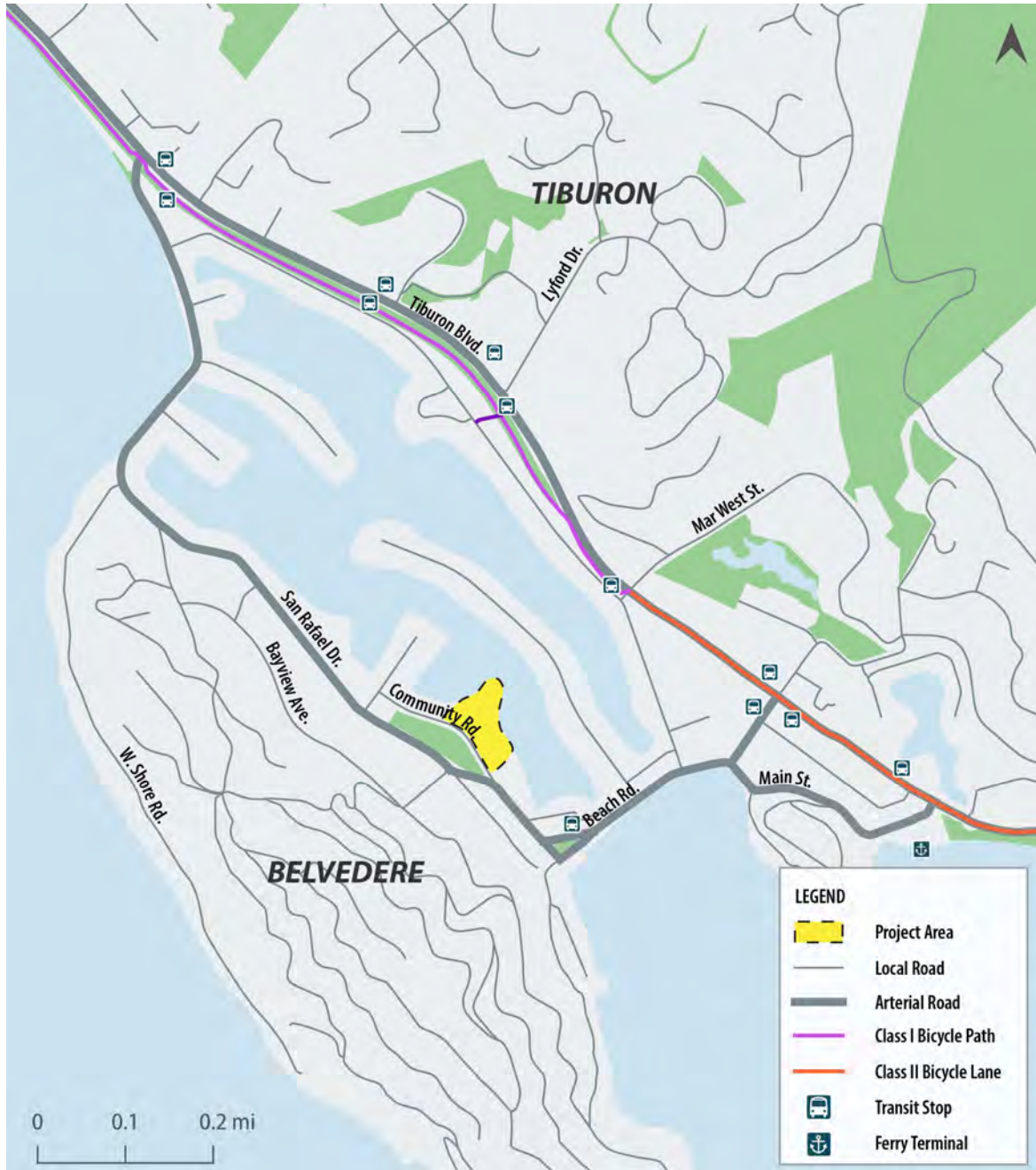


Figure 1. Study Area Vicinity Map



Figure 2. Site Plan

2. ENVIRONMENTAL SETTING

The following section is based on observations from site visits. Weather during each site visit was sunny and dry.

2.1 EXISTING ROADWAY NETWORK

The roads that would be primarily affected by the Project include Community Road, San Rafael Avenue, Beach Road, and Tiburon Boulevard. The following is a brief description of these roadways.

- Community Road** – Community Road is an east-west running local road between Beach Road and Leeward Road. It includes two lanes of vehicular traffic and on-street parking on both sides, the majority of which is unmarked. Belvedere Park, the Belvedere City Hall and the Belvedere Community Center are situated on the south side of Community Road, while the north side includes single-family housing, with driveways providing access to the housing. On-road stencils indicate a 15 MPH speed limit for this road.

- **San Rafael Avenue** – San Rafael Avenue runs between Beach Road and Tiburon Boulevard and is one of two roadways that provides access to/from Belvedere from Tiburon Boulevard. This arterial roadway includes two vehicular lanes and features a northbound left turn lane at West Shore Road. San Rafael Avenue features unmarked on-street parking adjacent to mostly single-family homes as well as some duplexes and low-rise apartment buildings.
- **Beach Road** – Beach Road is a north-south running arterial roadway running from Peninsula Point to Tiburon Boulevard. It has two lanes separated by a planted median from San Rafael Avenue to Cove Road and on-street parking. Beach Road serves residential and commercial traffic as well as public transit, and, along with San Rafael Avenue, provides access between the City of Belvedere with Tiburon Boulevard and the Bay Area's transportation network.
- **Tiburon Boulevard** – Tiburon Boulevard is a two- to four-lane arterial road running east-west in the Town of Tiburon. Tiburon Boulevard connects Belvedere residents to commercial uses, the Tiburon Ferry, and Highway 101 and the greater Bay Area. It is also known as State Route 131.

2.2 PARKING

On-street parking is available adjacent to the study area along Community Road (Figure 3 illustrates on-street parking and regulations). There is availability for parking about 78 vehicles along Community Road between Leeward Road and San Rafael Avenue. About three-quarter of these parking stalls are unregulated (e.g., no time restrictions or special use designations) and are configured as parallel parking spaces. These parking spaces are unmarked apart from two spaces in front of the Community Center. In addition, 10 perpendicular spaces on the southern side of Community Road at the intersection with San Rafael Avenue are reserved for police station parking, while another 10 perpendicular spaces on the opposite side of the road are restricted for vehicles with residential permits only.

There is existing availability for approximately 25 unregulated on-street spaces on Mallard Road. However, these parking spaces have been excluded from the parking analysis as they would be reconfigured under the Project plan. It was observed that a number of vehicles parked on the rolled curb or aprons along Mallard Road, restricting access for pedestrians.



Figure 3. Existing Parking Supply & Regulations

2.3 PEDESTRIAN AND BICYCLE CONDITIONS

Pedestrian Conditions

The roadway network within and adjacent to the study area generally includes sidewalks on at least one side of each roadway. Sidewalks are generally about four feet wide. Community Road features a discontinuous sidewalk only on the north side of the street. This sidewalk is approximately four-foot-wide, and pedestrians were observed walking in the roadway along Community Road rather than on the sidewalk. This was especially the case for those in groups, with small children, and with pets. In addition, a sidewalk gap exists east of the eastern intersection with Mallard Road, where pedestrians must walk through a driveway to continue along the sidewalk.

Mallard Road also features a sidewalk on both sides of the road, though these do not connect to sidewalks on Community Road in several locations. As mentioned above, the presence of rolled curbs resulted in some vehicles parking partially on the sidewalk and obstructing the path of pedestrians.

San Rafael Avenue has a four-foot-wide sidewalk on the south side west of the crossing to Belvedere Park. There is a gap in the sidewalk between the crossing and the Community Center. The sidewalk starts again on the north side from the Community Center to the intersection with Community Road.

Marked crosswalks are present at the intersection of Community Road and San Rafael Avenue and across Community Road at Leeward Road. However, marked crosswalks are not provided to Belvedere Park, despite the presence of a curb ramp/maintenance driveway and multi-use path through the park.

Additionally, there is a general lack of curb cuts and ADA-compliant curb ramps on Community Road, with the exception of the northern ramp at the San Rafael Avenue intersection.

To the southeast, near Beach Road where the bus stop is currently located, there are marked crosswalks and a mix of non-ADA compliant and ADA-compliant curb ramps. There is a continuous sidewalk path along the north side of San Rafael Avenue between Mallard Pointe and the Beach Road area. No marked crosswalks or ramps are present on Mallard Road.

Bicycle Conditions

Bicycle paths, lanes and routes are typical examples of bicycle transportation facilities, which are defined by Caltrans as being in one of the following four classes:

- **Class I** – completely separated facility designed for the exclusive use of bicyclists and pedestrians. Crossing points are typically minimized.
- **Class II** – restricted right-of-way designated lane for the exclusive or semi-exclusive use of bicycles. Through travel by motor vehicles is prohibited, but vehicle parking and cross-flows by pedestrians and motorists are permitted.
- **Class III** – a right-of-way designated by signs or permanent markings and shared with pedestrians and motorists.
- **Class IV** – an adjacent bicycle lane or bikeway that is physically separated from motor vehicle traffic.

There are no existing bicycle facilities located in or adjacent to the Project area. The following bicycle facilities provide access to Belvedere from the Town of Tiburon, under whose jurisdiction they fall.

- **Class I Pathway** – the Richardson Bay Linear Park Multi-Use Path runs alongside Tiburon Boulevard from Blackie's Pasture to west of Mar West Street. This path is also known as Marin Bicycle Route 10.
- **Class II Bicycle Lanes** – Class II bicycle lanes are located on Tiburon Boulevard from Mar West Street (West) to Mar West Street (East).

Despite the lack of bicycle facilities, it was observed that San Rafael Drive and Beach Road are popular routes for cyclists. These cyclists generally bypassed Community Road in favor of San Rafael Drive. Adequate space for Class I, II, or IV bicycle facilities is not available given the widths of the roadways and their use for on-street parking.



Pedestrians walk in the street on Community Road, which has narrow sidewalks.



Belvedere Park lacks a sidewalk and crosswalk access to the north side of Community Road.



Intersections lack crosswalks and ADA-compliant ramps.



Vehicles parked on the rolled shoulder on Mallard Road, restricting pedestrian access.

2.4 PUBLIC TRANSIT SERVICE

A public transit stop is located approximately one quarter mile from the study area, at Beach Road and San Rafael Avenue. The stop serves Marin Transit Route 219, with service from Tiburon to Strawberry. The stop is served by the westbound route only. There are seven arrivals per day during the weekday with service confined to the AM and PM peak hours. As of October 2022, Marin Transit indicates arrival times of 6:40 AM, 8:29 AM, 9:01 AM, 9:29 AM, 3:49 PM, 5:02 PM, and 5:29 PM, with typical headways of 27-32 minutes.

Additional public transit stops serving both the westbound and eastbound Marin Transit Route 219 are located on Beach Road and Tiburon Boulevard, half a mile from the Project site. These stops are served regularly throughout the day and maintain a typical minimum headway of 25-30 minutes and a maximum headway of an hour.

Marin Transit Route 619, a supplementary route running between Belvedere and Redwood High School in the City of Larkspur, also serves these bus stops with three westbound buses in the mornings to the school and three eastbound busses in the afternoon from the school.

The Tiburon Ferry Terminal is located approximately three quarters of a mile from the study area. Current ferry service runs to San Francisco. As of October 2022, seven ferries depart Tiburon each weekday – three during the morning, two midday, and two in the evening – with seven return trips from San Francisco. In September 2020 the ferry service provider filed an application with the California Public Utilities Commission for authorization to discontinue ferry service between San Francisco and Tiburon. At the time of this report no official decision had been made regarding service termination.

3. REGULATORY CONTEXT

Existing policies, laws and regulations that apply to the proposed Project are summarized below.

3.1 STATE

Tiburon Boulevard, located near the study area, is designated as State Route 131. The California Department of Transportation (Caltrans) has jurisdiction over State highways and any improvements to these roadways would require Caltrans' approval.

3.2 LOCAL

The City of Belvedere General Plan's Transportation and Circulation Element describes the location and extent of existing and planned transportation routes and facilities. The General Plan identifies roadway, transit, and sustainability goals and policies that have been adopted to ensure that the transportation system of the City will have adequate capacity to serve planned growth. These goals and policies are intended to provide a plan and implementation measures for an integrated, multimodal transportation system that will safely, efficiently, and sustainably meet the City's transportation needs. General Plan goals and policies relevant to this Project are as follows:

- **Goal TC-1** – Maintain the existing roadway network and encourage safety enhancements
 - **Policy TC-1.3:** Traffic generated by construction activities, service vehicles, tourists, and special events should be minimized.
- **Goal TC-2** – Provide adequate parking in all Belvedere neighborhoods.
 - **Policy TC-2.1:** The provision of off-street parking should continue to be mandated through Design Review approval.
- **Goal TC-3** – Improve the bicycle and pedestrian network.
 - **Policy TC-3.1:** Augment existing bike facilities to accommodate more users.

- **Goal TC-4** – Support public transportation, minimize single-occupant vehicles and reduce congestion.
 - **Policy TC-4.1:** Support and promote ride sharing and car sharing programs.
 - **Policy TC-4.4:** Minimize congestion on Tiburon Boulevard.
- **Goal SUST-4** - Reduce greenhouse gas emissions from all activities within the City boundaries to support the State's efforts and to mitigate the impact of climate change and sea level rise.
 - **Policy SUST-4.1:** Nurture a public dialogue on local sustainability efforts and policies and plan to reduce greenhouse gas emissions from four main areas: vehicular traffic, water usage, energy consumption, and construction activities. Develop measurable steps, track the efforts, and establish a means for assessing their effectiveness.
- **Goal SUST-7** – Reduce automobile emissions.
 - **Policy SUST-7.1:** Reduce vehicle miles traveled by 15 percent.
 - **Policy SUST-7.4:** Minimize single-occupant vehicles and reduce congestion.
- **Goal SUST-8** – Increase transit (ferry and bus) ridership and improve bicycle and pedestrian circulation.
 - **Policy SUST-8.1:** Improve access to and frequency of public transportation that serves Belvedere residents and businesses.
 - **Policy SUST-8.2:** Improve access to bicycle and pedestrian networks.
- **Goal SUST-9** – Support the use of alternative fuel and non-motorized vehicles.
 - **Policy SUST-9.2:** Support and facilitate the use of bicycles for non-recreational uses (i.e., commuting).

4. PROJECT IMPACTS

This section provides estimates of the travel demand (vehicle trip generation, modal split, average vehicle occupancy, and trip distribution) that would be generated by the Project.

4.1 PROJECT VEHICLE TRIP GENERATION

The Project's estimated weekday and weekend vehicle trip generation rates for the Project are shown in Table 1 and Table 2. The trip generation rates from the Institute of Transportation Engineer's *Trip Generation Manual* were used to estimate the number of vehicle trips associated with the Project's existing and proposed residential land use categories. The following vehicle trip generation estimates represent the sum of additional trips that would be generated in excess of the trips generated by the existing residential land uses along Mallard Road.

As shown in the table, the proposed Project, at full occupancy, would be estimated to generate almost 160 new daily weekday vehicle trips compared to existing conditions, including 12 additional AM peak hour trips and 16 added PM peak hour trips.

The Project would be estimated to generate over 170 new daily weekend (Saturday) trips, an increase of almost 50 vehicle trips compared to existing conditions. This includes an estimated 15 new vehicle trips during the weekend peak hour.

Table 1. Existing Site Vehicle Trip Generation

ITE Land Use Classification	ITE Code	Number of Units	Weekday Daily			Weekday AM Peak			Weekday PM Peak			Saturday Daily			Saturday Peak		
			Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out
Residential Condominium/Townhouse	230	22	128	64	64	10	2	8	11	7	4	124	62	62	11	6	5

Source: Paris Transportation Consulting 2022

Table 2. Proposed Site Vehicle Trip Generation

ITE Land Use Classification	ITE Code	Number of Units	Weekday Daily			Weekday AM Peak			Weekday PM Peak			Saturday Daily			Saturday Peak		
			Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out
Residential Condominium/Townhouse	230	13*	76	38	38	6	1	5	7	4	3	74	37	37	6	3	3
Single Family Detached	210	6	57	29	29	5	1	3	6	4	2	59	30	30	6	3	3
Low-Rise Apartment	221	23	152	76	76	12	2	9	14	9	5	165	82	82	13	7	6
Total		42	267	133	133	21	4	16	26	16	9	281	140	140	24	13	11
Proposed New Trips**			156	78	78	12	3	10	16	10	6	173	87	87	15	8	7

Source: Paris Transportation Consulting 2022

*Includes the 10 duplexes and 3 ADUs.

**Proposed new trips subtracts existing vehicle trips from the proposed vehicle trip total.

4.2 TRAVEL MODE SPLIT

Table 3 presents the 2019 commute mode split for Census Tract 1230, which incorporates the Project site, as provided by the U.S. Census Bureau's American Community Survey. This data provides an indication of the expected modal split for the commute trips generated by the Project, particularly during the AM and PM peak hours when the majority of trips would be expected to be trips to and from the workplace. Over 60% of trips would be expected to be made in a vehicle, with the majority in single-occupancy vehicles. Almost 20% of trips may be made using public transportation; however, this percentage may be lower as Tiburon ferry service may be reduced or eliminated in the future. Another 20% of commuting trips could be expected to be made by bicycle, walking, motorcycle, or telecommuting.

Thus, the total number of trips estimated to be generated by the Project may be reduced if pre-pandemic commute modes can be expected in the future and/or if telecommuting remains an option for some workers.

Table 3. Existing Belvedere Commute Mode Split

Mode	Census Tract 1230 (Belvedere)	
	Number of People	Percent
Car, Truck, Van (Alone)	399	58%
Car, Truck, Van (Carpool)	23	3%
Public Transportation	131	19%
Other	140	20%
Total	693	100%

Source: American Community Survey Table S0802, 2019 1-year estimate

4.3 PARKING

This section discusses the City of Belvedere's zoning and estimated parking demand for the Project. As per the City's Municipal Code, the minimum off-street parking requirement for each type of residential dwelling proposed as part of the Project is as follows:

- Single-family dwellings: spaces for two automobiles;
- Two-family dwellings: spaces for four automobiles;
- Apartment houses or apartment courts: spaces for a number of automobiles equal to 1.25 times the number of apartments having up to two bedrooms, and 2.0 times the number of apartments having three or more bedrooms.

In addition, because 5% of residential units would be reserved for very low-income residents the Project would be eligible for the state of California's Density Bonus Law. As such, it is required to meet the following reduced parking requirements:

- Studio: 1 space
- 1 bedroom: 1 space
- 2 bedroom: 1.5 spaces
- 3 bedroom: 1.5 spaces
- 4 bedroom: 2.5 spaces

Table 4 shows the number of parking spaces required by the Density Bonus Law and the City of Belvedere's off-street parking regulations as well as the number of spaces planned for the development. For the Project, the required parking as detailed in the Density Bonus Law requirements would result in 65 parking spaces.

The Project is proposing to provide 75 assigned off-street parking spaces plus an additional 27 unassigned common and apron parking spaces, for a total of 102 spaces. This exceeds both the Density Bonus Law and the City of Belvedere's off-street parking requirements.

Table 4. Required and Planned Off-Street Parking Spaces

Type	Number of Units	Density Bonus Law – Spaces Required	City of Belvedere - Spaces Required	Project Spaces Planned
Single Family Residence	6	15	12	20
Duplex	5	15	20	25
Apartment (1 BR)*	9	9	12	46
Apartment (2 BR)	12	18	15	
Apartment (3 BR)	5	8	10	
Unassigned Common Parking Spaces	-	-	-	11
Total	42	65	69	102

Source: City of Belvedere Municipal Code Chapter 19.68

*Includes the three ADUs.

Estimated Parking Demand

Future parking demand generated from the Project site was estimated using the Institute of Transportation Engineers' *Parking Generation Manual* (3rd Edition). The results of this analysis can be seen in Table 5.

Table 5. Proposed Estimated Parking Demand

Type	Weekday Peak Demand - # of Spaces
	Proposed
Single Family Residence	11
Duplex	15
Apartment	28
ADU	5
Total	59

Source: ITE Parking Generation Manual, 3rd Edition

With full Project occupancy, parking demand at Mallard Pointe is estimated to be for 59 vehicles. This falls below the City's parking requirement and the number of spaces planned for the Project, which exceeds both Density Bonus Law and City requirement.

On-Street Parking Surveys

In order to evaluate local parking conditions, an on-street parking occupancy survey was conducted on the evening of September 16, 2021 starting at approximately 7:00 PM. This survey included a detailed inventory of all on-street parking in the survey area, including Community Road from Leeward Road and San Rafael Avenue. The survey's data collection effort included the number and types of parking spaces available (e.g., parking supply) and the parking occupancy on a weekday evening after 6 PM (e.g., parking demand). The results of the survey are presented in Figure 4, which shows the study area and the number of parked vehicles and occupancy rate along the street.

Approximately 78 on-street parking spaces are located along Community Road. The study found that on a weekday evening there were about 28 total spaces (36%) that were occupied, and about 50 spaces that were available. 31% of unregulated spaces (18 spaces) were occupied during this time, with approximately 50 spaces available.

It would be expected that any parking demand in excess of that associated with the proposed Project could be accommodated with existing on-street parking on Community Road.



Figure 4. Weekday Evening (7 PM) Parking Occupancy

Summary of Findings on Parking

Based on this study, the proposed 102 spaces provided as part of the Project would be reasonable and appropriate, for the following reasons:

- The Project is proposing to exceed the requirements for off-street parking. The Project would provide an additional 37 off-street parking spaces in addition to the 65 spaces required by the City of Belvedere's off-street parking regulations.
- Additional on-street parking is located adjacent to the Project on Community Road. Space for approximately 78 vehicles is located along Community Road between Leeward Road and San Rafael Avenue. The spaces have a weekday evening occupancy rate of 36%.
- The Project's parking supply exceeds estimated parking demand based on guidance from the Institute of Transportation Engineer parking demand rates. The Project would provide almost double the number of estimated spaces demanded during the weekday peak period.

4.4 REGULATORY IMPACTS

This section discusses how the Project relates to the stated goals from the City of Belvedere General Plan's Transportation and Circulation Element. The Project does not include any improvements to Tiburon Boulevard and would not require Caltrans' approval.

- **Goal TC-1** – Maintain the existing roadway network and encourage safety enhancements
 - Construction may intermittently impact local traffic until the Project is completed.
- **Goal TC-2** – Provide adequate parking in all Belvedere neighborhoods.
 - As detailed in Section 4.3, the Project would provide sufficient parking.
- **Goal TC-3** – Improve the bicycle and pedestrian network.
 - As noted in Section 4.6, the Project adds and upgrades sidewalks, ADA curb ramps, and crosswalks near the Project site, enhancing the pedestrian network.
 - The bicycle network would be unchanged compared to existing conditions.
- **Goal TC-4** – Support public transportation, minimize single-occupant vehicles and reduce congestion.
 - The Project would close sidewalk gaps, facilitating better access to local transit stops.
- **Goal SUST-4** - Reduce greenhouse gas emissions from all activities within the City boundaries to support the State's efforts and to mitigate the impact of climate change and sea level rise.
 - As detailed in Section 4.5, the Project would be expected to have VMT at least 15 percent less than the regional average.
- **Goal SUST-7** – Reduce automobile emissions.
 - As detailed in Section 4.5, the Project would be expected to have VMT at least 15 percent less than the regional average.
- **Goal SUST-8** – Increase transit (ferry and bus) ridership and improve bicycle and pedestrian circulation.
 - The Project would close sidewalk gaps, facilitating better access to local transit stops.
 - The Project would provide bicycle parking to encourage the use of non-motorized vehicles.

- **Goal SUST-9** – Support the use of alternative fuel and non-motorized vehicles.
 - The Project would provide bicycle parking to encourage the use of non-motorized vehicles.

The Project applicant has produced a Construction Management Plan, including proposed traffic control measures during construction, and submitted it to the City of Belvedere.

The Project as designed would have less than significant impacts.

4.5 VEHICLE MILES TRAVELED

VMT Background

Vehicle Miles Traveled (VMT) is a measurement of miles traveled by vehicles within a specified region and for a specific time period and refers to the amount and distance of automobile travel attributable to a project. VMT measures the efficiency of the transportation network and is calculated based on the sum of individual vehicle trips generated and their associated trip lengths. VMT accounts for two-way (round trip) travel and is often estimated for a typical weekday to measure transportation impacts.

The use of VMT as a performance measure allows for the evaluation of traffic impacts associated with greenhouse gas (GHG) emissions. It can be measured as a total or on a per-capita basis and can be used to estimate fuel consumption by motor vehicles for distances traveled. Increase in VMT for gasoline-powered vehicles would cause an increase in the GHG emissions from vehicles making these trips.

The State of California gives the lead agency discretion in selecting an appropriate methodology and significance threshold for VMT impacts. A lead agency may conduct either a qualitative or quantitative analysis of VMT impacts, but guidance from the Governor's Office of Planning and Research (OPR) recommends that, if possible, lead agencies should conduct a quantitative analysis based on transportation models. However, where existing models or methods are not available, the lead agency may instead prepare a qualitative analysis.

Further OPR guidance states that the use of a travel forecasting model to estimate VMT is preferred because a travel model would account for both 'project-generated VMT' and the 'project effect on VMT'.

The Transportation Authority of Marin (TAM) developed the Transportation Authority of Marin Demand Model (TAMDM), a tour-based assessment of travel behavior that produces VMT estimates for cities through Marin County, including Belvedere. A tour-based assessment counts the entire home-back-to-home tour that includes the project and is a more complete characterization of a project's effect on VMT than a trip-based assessment which counts VMT from individual trips to and from the project. This is because in many cases, a project affects travel behavior beyond the first destination.

While both Caltrans and MTC have also produced VMT estimates for the region, these regional models may not contain a level of accuracy and sensitivity for local area applications and should include a sub-area validation process to calibrate and validate the model within the study area. This process was conducted for Marin County as part of the TAMDM development process.

The lead agency has discretion in determining an appropriate methodology for evaluating a project's VMT, including whether to express the change in absolute terms, per capita, or another measure, as long as assumptions are documented. The OPR recommends setting land use project VMT thresholds at 15 percent below existing VMT per capita based on regional or city VMT per capita. Another approach is for the lead agency to develop its own jurisdiction-specific VMT thresholds. Belvedere has not set significance thresholds for acceptable versus unacceptable levels of VMT for California Environmental Quality Act (CEQA) analysis. Therefore, this analysis is based on the recommendation by the OPR that a per capita VMT that is 15 percent below that of existing development may be a reasonable threshold.

The significance threshold defines what constitutes an acceptable level of VMT and what requires mitigation measures to reduce VMT. Thresholds should be consistent with key transportation planning documents such as Plan Bay Area 2040, which contains regional and local projections of VMT growth associated with expected changes in population, employment, and the regional transportation network. Additional VMT reduction may be achieved at the project level through TDM strategies and active transportation network expansion which that are not fully accounted for in regional level travel forecasting models.

VMT Evaluation

OPR recommends that, "residential development that would generate vehicle travel that is 15 or more percent below the existing residential VMT per capita, measured against the region or city, may indicate a less-than-significant transportation impact¹." As previously discussed, the lead agency has discretion in determining an appropriate methodology for evaluating a project's VMT, including which VMT – city or regional – to use as a comparison to project VMT. For the purposes of this study, existing and future cumulative VMT, inclusive of the Project, was compared to VMT for the City of Belvedere.

The comparison of Project VMT to that of the City of Belvedere is reasonable given the City's remote geographic location on a peninsula away from the main County center and transit network connections, the City's relatively small 2,100-person population size, and the City's predominantly residential character compared to rest of the County of Marin. Employment centers, schools, retail, and other services are limited or non-existent within the City limits, resulting in longer average home-based trip distances originating in Belvedere. Hence, land use patterns and proximity to common residential home-based trip destinations within the City results

¹ Technical Advisory on Evaluating Transportation Impacts in CEQA, Governor's Office of Planning and Research, State of California, December 2018, page 15.

in locally specific travel characteristics and is not closely reflective of average County of Marin travel patterns. Measuring Project VMT against the City of Belvedere VMT is consistent with OPR guidelines and in alignment with state emission reduction goals.

Table 6 provides existing and future VMT for TAZ 800.014, in which the Project is located, and for the City as a whole. Table 6 also provides the VMT threshold of 15 percent below the City VMT for reference. The TAMDM 2015 model and 2040 forecast was validated based on several datasets, including American Community Survey mode share results.

TAZ 800,014, bounded by San Rafael Avenue, Acacia Avenue, Tiburon Boulevard, and Beach Road, encompasses mostly medium-density single family residential parcels, as well as parts of the Tiburon-Boardwalk Shopping Center, a few public parks, and the Belvedere Lagoon.

Table 6. Existing & Projected Future Residential VMT

	Existing VMT (2015)	% Difference compared to City 2015	Cumulative VMT (2040)	% Difference compared to City 2040
Daily VMT Per Resident				
City of Belvedere	24.9	--	17.2	--
Threshold of Significance	21.2	-15%	14.6	-15%
TAZ 800,014	19.0	-23.7%	11.3	-34.3%

Sources: "Transportation Authority of Marin Demand Model (TAMDM) Development Report" Table 6-13 (https://www.tam.ca.gov/wp-content/uploads/2021/01/TAMDM_Development_Report_9-1-2020.pdf), September 1, 2020
TAM Travel Demand Model (<https://www.tam.ca.gov/travel-demand-model-traffic-monitoring/#vmtwebmap>), December 6, 2021

The VMT of TAZ 800,014, as estimated by the TAMDM and presented in Table 6, could be considered representative of the VMT of the Project. However, due to the Project's proximity to transit services and higher planned density than surrounding land uses, among other Project elements, the VMT estimate for TAZ 800,014 is a conservative estimate of the average Project VMT per person. Further detailed VMT analysis accounting for these potential reductions in VMT would result in lower Project-generated VMT estimates.²

² The California Air Pollution Control Officers Association (CAPCOA) presents general potential greenhouse gas (GHG) emission reductions as a result of various measures in their "Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity." In general, the handbook details that the "Increased Residential Density" measure has potential VMT reductions of up to 30%, depending on project specifics. Additionally, providing "End-of-Trip Bicycle Facilities" has potential typical VMT reductions of up to 4.4%. Providing "Pedestrian Network Improvements" has potential VMT reductions of up to 6.4%, depending on project specifics. The proposed 'Mallard Pointe' residential Project, as designed, does have an increased residential density compared to the surrounding residential units, provides bicycle facilities, and enhances the pedestrian network.

The TAMDM estimates that the VMT associated with the proposed Project would be approximately 24 percent lower than the 2015 City VMT, representing existing plus project conditions, and 34 percent lower in 2040, under cumulative conditions. The Project-generated VMT would be below the applicable threshold of significance requiring a 15 percent reduction in residential VMT per capita. Therefore, the proposed Project is estimated to have less than significant impacts.

VMT Impacts Summary

The VMT per capita for the proposed residential land use is estimated to be less than 85 percent of the regional average, therefore resulting in less than significant impacts. No mitigation measures to reduce the Project's residential VMT per capita are required per OPR guidance.

4.6 TRANSPORTATION ENHANCEMENTS AND GEOMETRIC DESIGN

Based upon the latest available Project plans, dated May 2022, it is the analysts' understanding that the Project would provide treatments to enhance multi-modal transportation and connectivity in accordance with the City's transportation and sustainability goals.

The Project plans include widening of the adjacent Community Road sidewalk to five feet, the addition of crosswalks with ADA-compliant ramps across Mallard Road at the Project entryways, and the addition of a crosswalk across Community Road at the northeast corner of the intersection with the western Mallard Road intersection to access Belvedere Park. The Project would also close gaps in the sidewalk directly east and west of the Mallard Pointe site, providing a more complete pedestrian network for the whole community.

Additionally, the Project would realign the approach angles of Mallard Road at the two Community Road intersections. Making these intersections more perpendicular would improve sight lines and encourages safer vehicle turning movements.

4.7 EMERGENCY ACCESS

The Project would maintain two vehicular access points to the public Community Road, similar to existing conditions. As of June 20, 2022, the Tiburon Fire Protection District has reviewed and approved the roadway and driveway design, including driveway widths and circulation.

The main roadway on the Project site, Mallard Road, is shown in the proposed Project plans at 20' wide. This would meet the emergency vehicle minimum horizontal clearance requirements of 20' wide roadways. There is a driveway shown on the plans connecting to Mallard Road that is noted as 18' wide, which would exceed the minimum width for a driveway in this location.

The dead-end driveway is proposed to be about 125' long. This is shorter than the 150' length specified in the California fire code, so an approved turn around area is not required to be provided.

Construction should be performed to not restrict emergency access. The Project applicant has produced a Construction Management Plan, including proposed traffic control measures during construction, and submitted it to the City of Belvedere.

5.0 SUMMARY AND TRANSPORTATION NETWORK RECOMMENDATIONS

5.1 SUMMARY OF IMPACTS

The proposed Project would not have a significant impact on transportation and traffic based upon the following categories:

Regulatory Impacts

As detailed in Section 4.4, the proposed Project would have less than significant Impacts. The Project applicant has produced and submitted a Construction Management Plan to the City.

VMT Impacts

The proposed Project is consistent with CEQA Guidelines Section 15064.3, Subdivision (b) regarding Vehicle Miles Traveled (VMT), with the Project expected to have less than 85 percent the VMT of the regional average. The Project would have no VMT impacts.

Geometric Hazard Impacts

The proposed Project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses. The Project would offer improvement over existing conditions. The Project would have no geometric hazards impacts.

Emergency Access Impacts

The proposed Project would result in adequate emergency access, as outlined in Section 4.7, and the roadway design has been reviews and approved by the Tiburon Fire Protection District. The Project would have less than significant emergency access impacts.

5.2 TRANSPORTATION NETWORK RECOMMENDATIONS

The current proposed Project plan incorporates widening of the adjacent Community Road sidewalk to five feet, the addition of crosswalks with ADA-compliant ramps across Mallard Road at the Project entryways, and the addition of a crosswalk across Community Road at the northeast corner of the intersection with the western Mallard Road intersection to access Belvedere Park. The Project also closes gaps in the sidewalk directly east and west of the Mallard Pointe site, providing a more complete pedestrian network for the whole community.

Additional elements, summarized below, could be considered to further enhance Project consistency with the City of Belvedere's goals and policies. As summarized in Section 3.2, the City of Belvedere's goals and policies intended to enhance multi-modal transportation, reduce GHG emissions and increase sustainability.

- **Parking**

- Consider unbundling the cost of parking from residential unit rental prices to reduce the demand for parking supply.
- Consider reducing the total parking supply of the proposed development to not exceed requirements by the City of Belvedere.

- **Transportation Demand Management (TDM)**

- Consider instituting a carpooling program for Mallard Pointe residents.
- Consider providing a bicycle or scooter share program for Mallard Pointe residents.

- **Multimodal Access**

- Parking should be prohibited within 20 feet of intersections and crosswalks along Community Road to improve sight lines and safety per guidelines set by the Manual on Uniform Traffic Control Devices (MUTCD).
- Implement features along Mallard Road that help reinforce the pedestrian-priority nature of the 'shared street.' Some examples may include:
 - Textured pavements
 - Street furniture, including bollards, benches, planters and bicycle parking
 - Traffic calming that physically restrict higher vehicle speeds
 - Shared street signage at the entrances to Mallard Road