

San Rafael City Council Meeting February 1, 2016

ANDERSEN DRIVE/SMART AT GRADE CROSSING



Introductions

City of San Rafael
Community Development
Public Works

Consultant Team

Environmental Process

AECOM

Crossing Design

Kimley Horn Associates

Quiet Zone Assistance

HDR

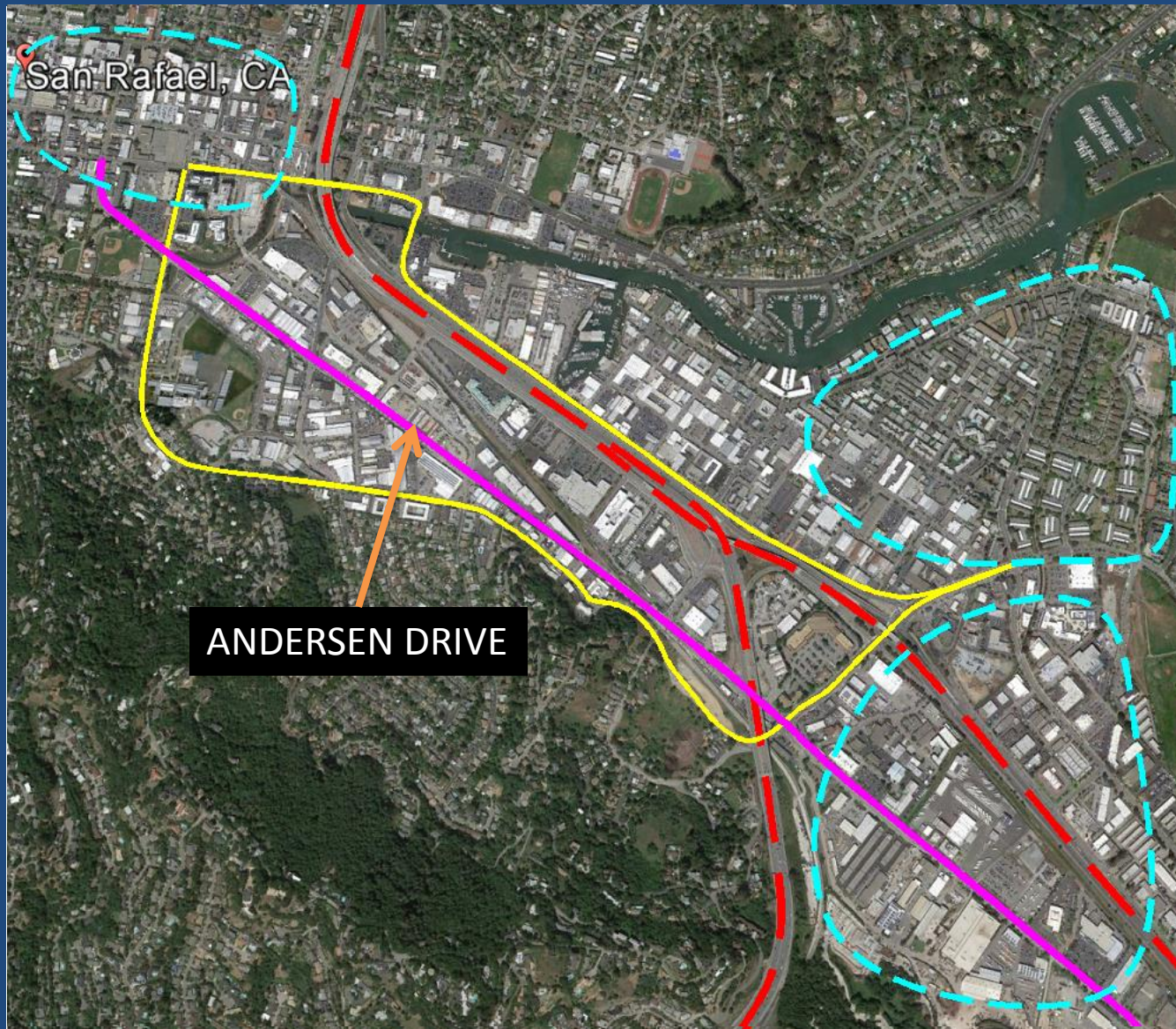


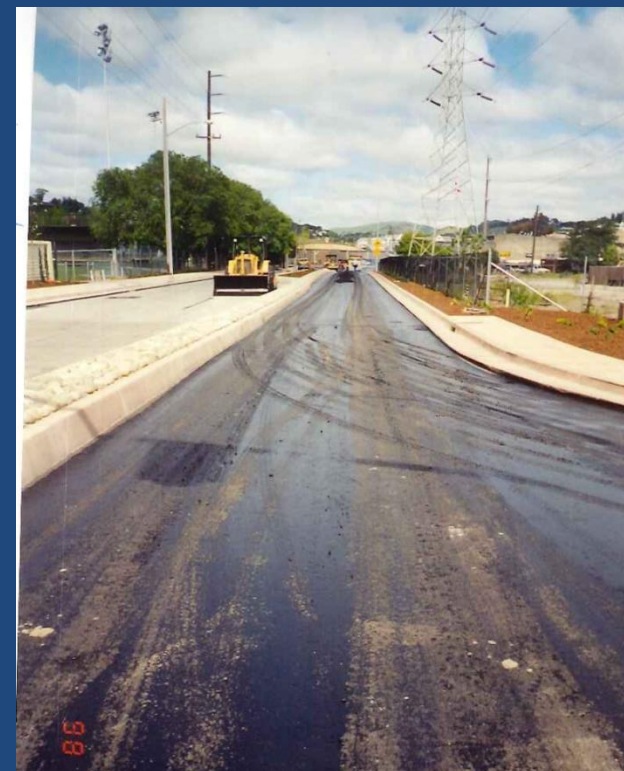
Purpose

Review and Consider Action to

1. Adopt the Andersen Drive /SMART At-Grade Crossing Initial Study/Mitigated Negative Declaration
2. Approve the At-Grade Crossing design (Alternative 6)
3. Direct staff to proceed with filing an application with CPUC

A Short History Andersen Drive







1997 CPUC Decision 97-07-055 (July 16, 1997)

Condition 2

“2. This authorization to blockade the tracks shall expire upon the scheduling of regular train service over the tracks which intersect Andersen Drive. Upon such expiration of authority, the City shall take all actions necessary to ensure the unimpeded use of the intersection by the rail service, absent further order of the Commission.”

2006 SMART Measure Q Authorizes funding for rail service from Cloverdale to Larkspur.

SMART has notified City of San Rafael of their intention to proceed with the Larkspur Extension



City of San Rafael – Department of Public Works Alternatives Analysis

City of San Rafael - Andersen Drive - Report on Analysis of Alternatives to Accommodate Rail Service

Andersen Drive
Report on Analysis of Alternatives to Accommodate Rail Service

Final Report

January 2015



Department of Public Works
Engineering Division

Initially analyzed 6 alternatives

Subsequent alternative, submitted by the public, analyzed.

Total 7 alternatives

Alternative 6 is the selected project

September 2015 the City awarded the design of this project to Kimley Horn Associates



Alternative 1 – Grade Separation

Advantages

Eliminates Train/Vehicle/Bicycle/pedestrian conflicts

Disadvantages

Conflicts with Other Facilities
Lengthy Permit Process
Costly
10 years to design, permit and construct



Main Transmission Lines



Secondary Line



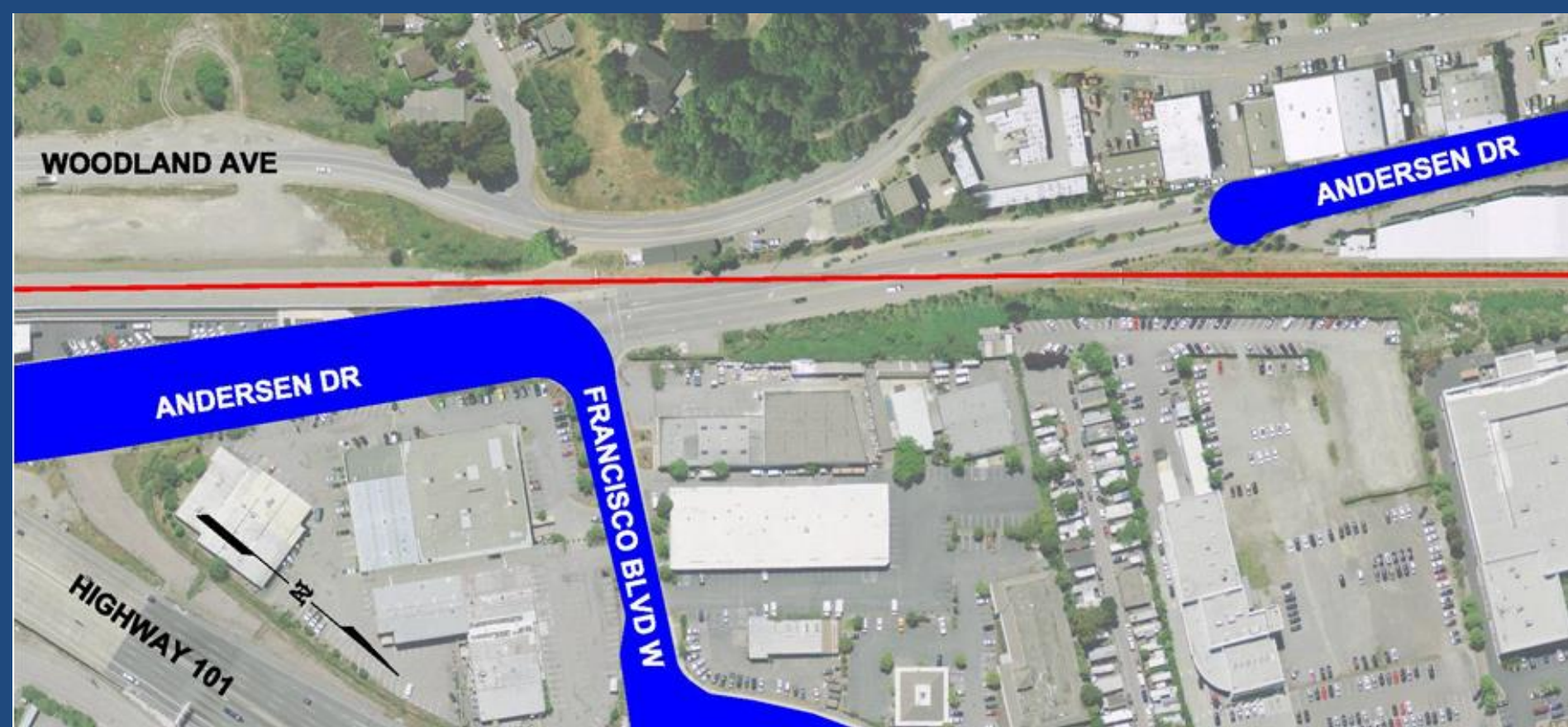
Alternative 2 – At-Grade with Chicane

Advantages

- Reduction in crossing length
- Improves sight distance for drivers to oncoming train.

Disadvantages

- Cost
- R/W Acquisition Required
- Relocation of Sanitary Facilities
- Difficult Environmental Permitting



Alternative 3 - Closure

Advantages

- Low Cost
- Eliminates Conflicts
- Quick Construction

Disadvantages

- Major Traffic Impact
- Reduction in Access
- Business impact
- Increase Ped/Bike route length
- Increase Traffic Volumes on other street/HWYs



Alternative 4 – One-Way Southbound Bypass via Woodland Ave.

Advantages

Eliminates Train/Vehicle/Bicycle/pedestrian conflicts

Disadvantages

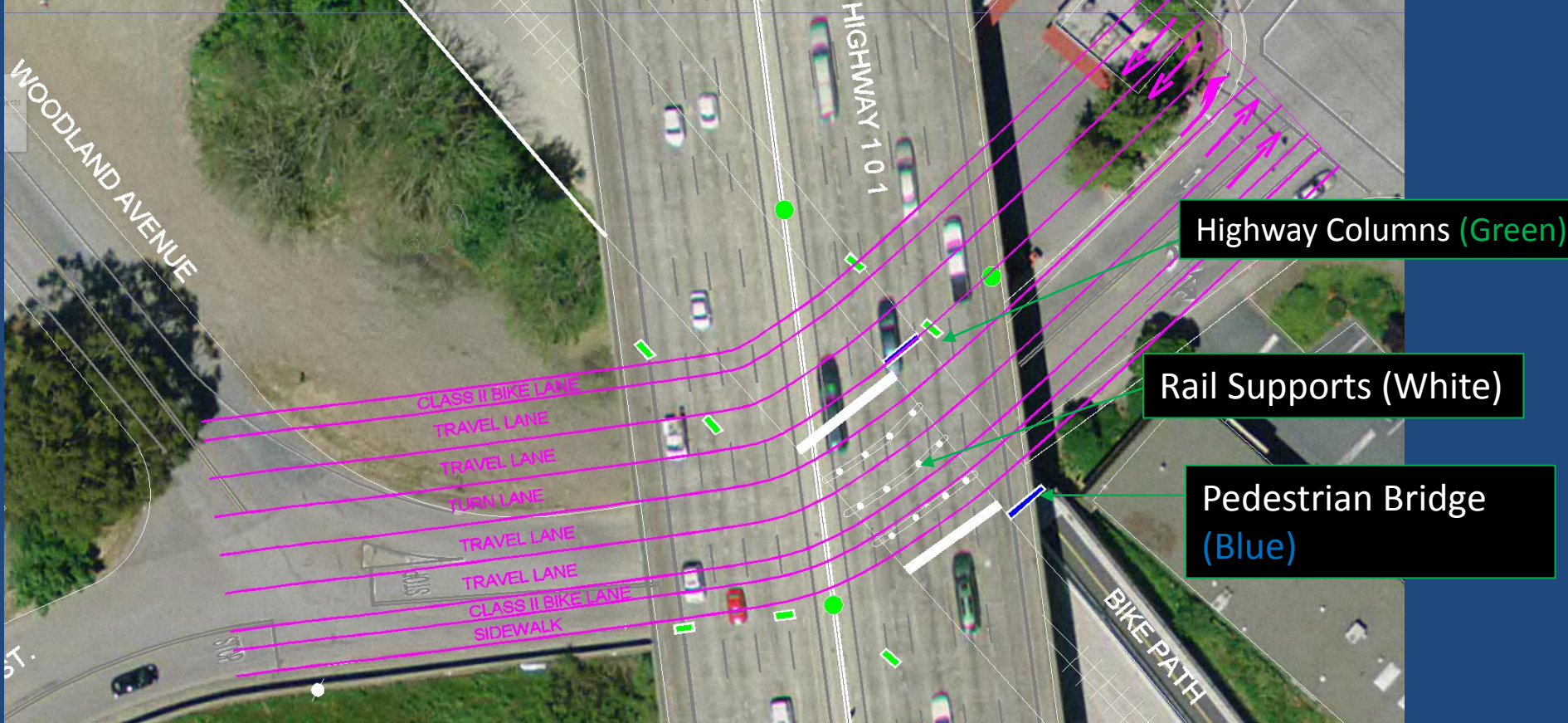
High Cost
Major impacts to roadway & Residential Neighborhoods
Reconstruction of Rail and Hwy Facilities (This may not even be possible)
Significant impacts during construction

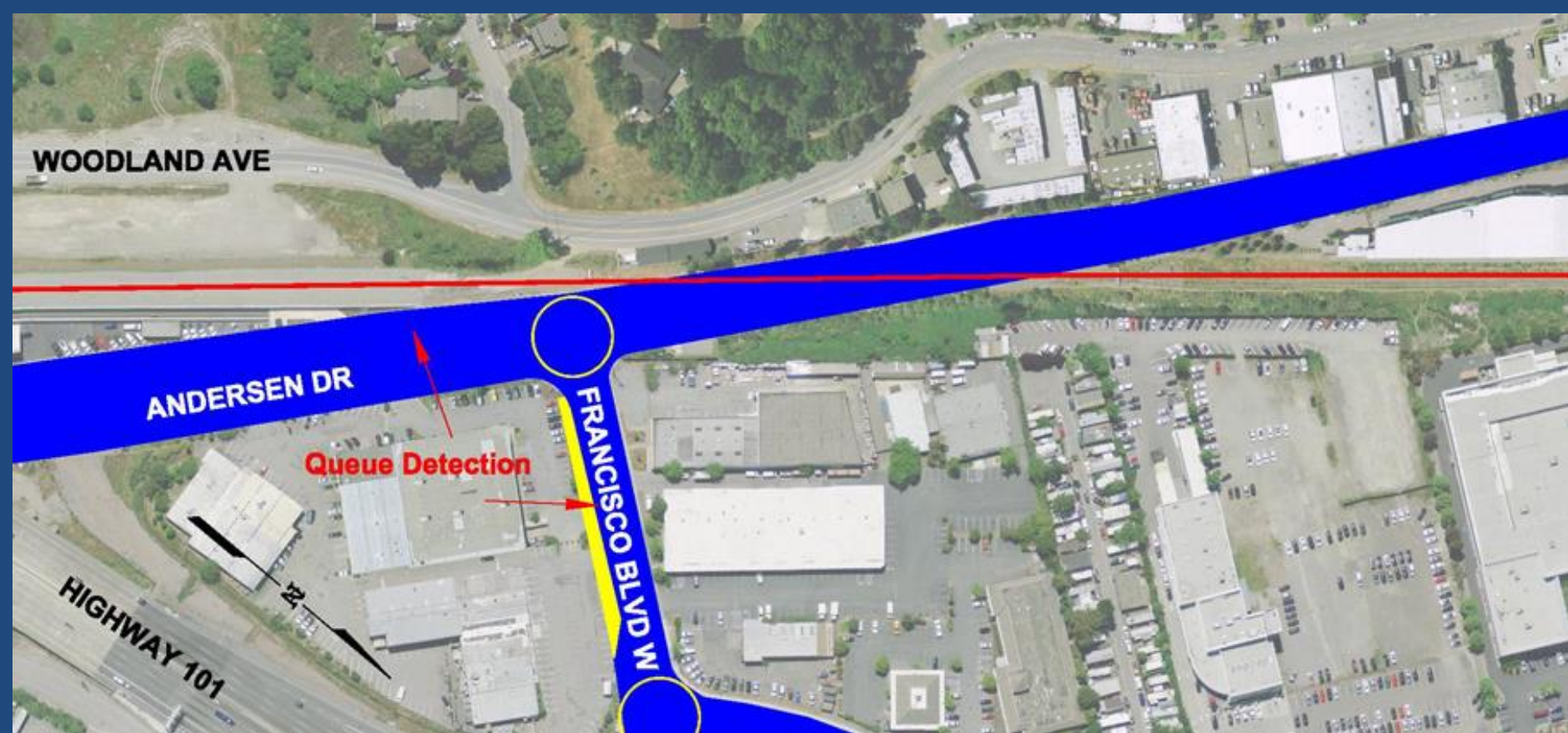


Alternative 5 – Two-Way Bypass via Woodland Ave.

Advantages
Eliminates Train/Vehicle/Bicycle/pedestrian conflicts

Disadvantages
High Cost
Major impacts to roadway
Reconstruction of Rail and Hwy Facilities (This may not even be possible)
Significant impacts during construction





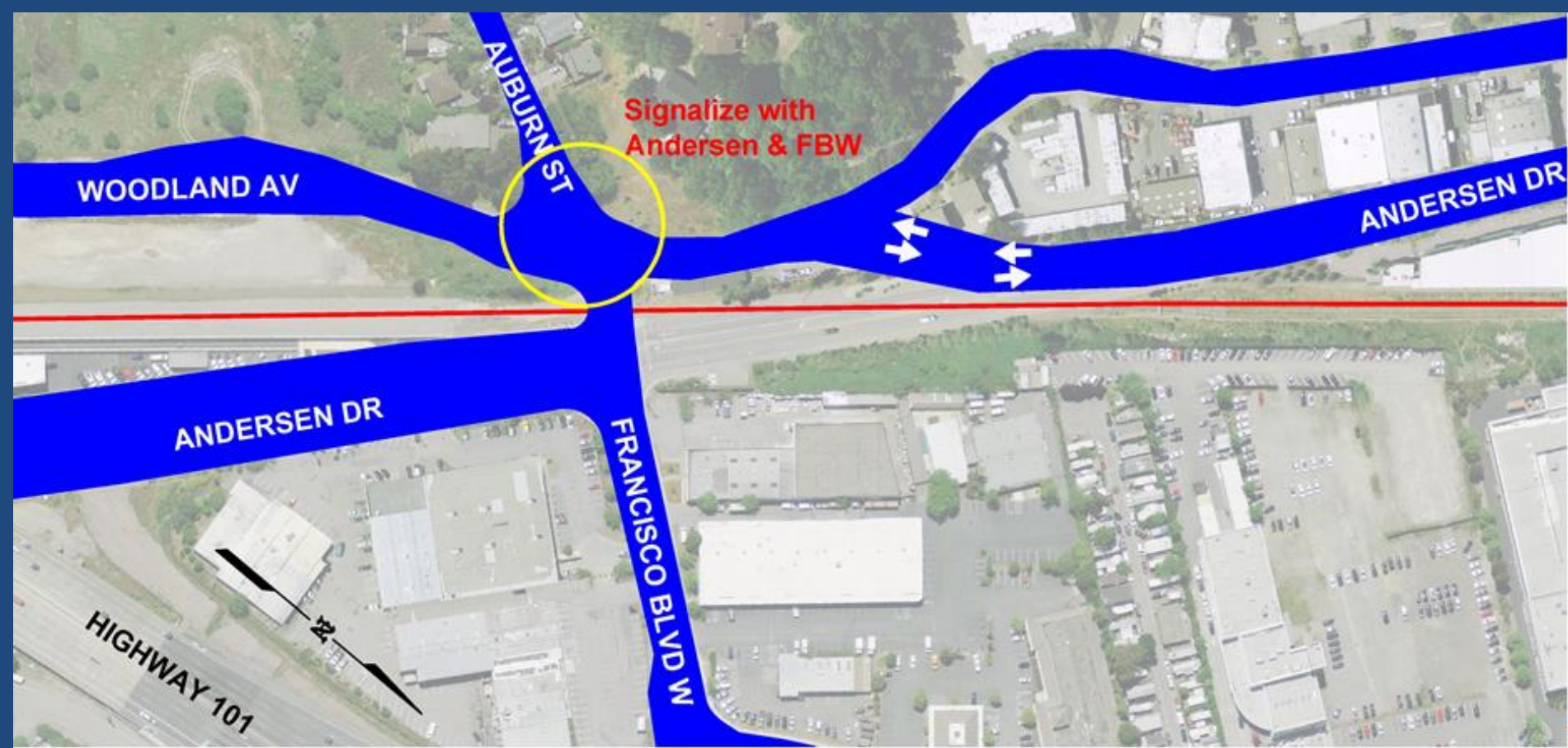
Alternative 6 – At-Grade Crossing with Additional Storage Capacity

Advantages

- Relatively low cost
- Short time to construct
- Minimal Traffic Impacts
- Maintains Access for Users
- Provide separation for Peds/Bicycles

Disadvantages

- SMART Rail Operational Speeds



Alternative 7 – Two-Way Bypass via
Woodland Ave. with Andersen
Connector

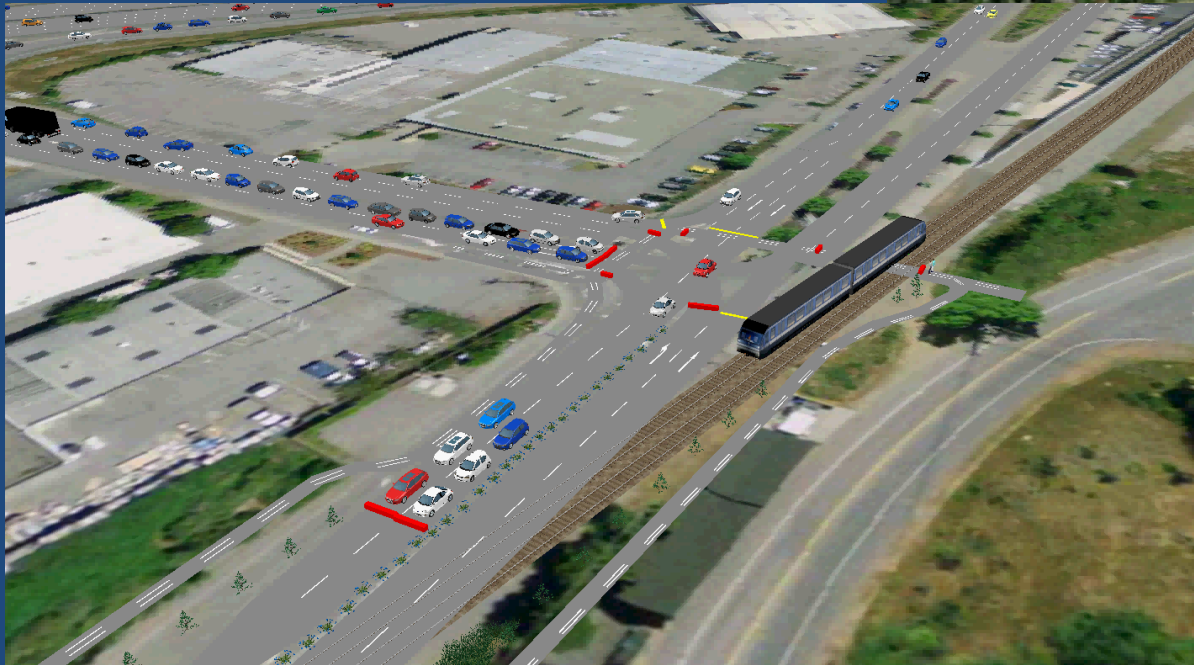
Advantages

- Maintains access for users
- Separation for bicycle/ped users

Disadvantages

- High Cost
- Traffic Impacts - Queueing
- R/W acquisition required
- Time to Design and Construct Improvements

Traffic Modeling



#	Alternative	Model		Comments
		Syncro	Vissum	
1	Grade Separation		None	No local effect
2	At Grade Crossing with Chicane		X	#6 Model Run
3	Closure of Andersen Drive	X		Train - unimpeded
4	One-Way Southbound Bypass onto Woodland	X		Train - unimpeded
5	Two-Way bypass via Woodland	X		Train - unimpeded
6	At Grade Crossing with Additional Storage		X	
7	Two Way bypass via Woodland Ave.		X	

Rating Matrix

Alternative	Permanent Traffic Impacts	Cost	Feasibility	Safety	Schedule	Total
1. Grade Separation	0	4	4	0	4	12
2. At-Grade Crossing with Chicane	0	3	3	1	2	9
3. Closure	5	2	1	0	1	9
4. One-Way Southbound Bypass via Woodland Avenue	4	5	5	0	5	19
5. Two-Way Bypass via Woodland Avenue	3	5	5	0	5	18
6. At-Grade Crossing with Existing Geometry	1	1	1	2	1	6
7A. Two-Way Bypass via Woodland Avenue with Andersen Connector (1 Lane)	5	2	1	1	2	11
7B. Two-Way Bypass via Woodland Avenue with Andersen Connector (2 Lane)	1	3	2	1	2	9

Environmental Review- Background

- SMART Final Environmental Impact Report –
 - Certified in 2005 providing CEQA clearance for rail project from Cloverdale to Larkspur
 - Acknowledged Andersen Dr. crossing as not permitted by CPUC, thus FEIR did not analyze at-grade crossing
- NEPA Environment Assessment-
 - Prepared by SMART to pursue federal funding to extend service from Downtown SR to Larkspur
 - Included analysis of seven crossing alternatives
 - FONSI issued by FTA in 2015

Environmental Review - Required

- Alternative 6 at-grade crossing subject to environmental review by City and CPUC
 - City = lead agency*
 - CPUC = responsible agency*
- Initial Study completed utilizing studies prepared for 2015 NEPA Environmental Assessment
- Initial Study concludes that project will result in significant impacts but mitigation measures identified to reduce impacts
- Mitigated Negative Declaration - **conclusion**

Initial Study- Topic Areas of Study

- Biological Resources
- Cultural Resources
 - Completed Tribal Consultation per AB 52
- Geology/Soils
- Hazards/Hazardous Materials
- Noise
 - Construction related (short-term)
 - Operational – recommendation for “wayside” horns
- Transportation/Traffic

Required CEQA Review Period

- Notice of Intent published in December 2015
- 40-day public review period observed
- Comments received on Initial Study/MND
Attachment 5 in staff report
- Response to comments on Initial Study/MND prepared including responses to comments on “Quiet Zone”
Attachment 6 in staff report

Alternative 6

Consistent with General Plan 2020

- Circulation Element Policy C-17
Regional Transit Options- Commuter Rail
- Circulation Element Program C-14a
Support safe design features + noise mitigation
- Sustainability Element Policy SU-2
Promote alternative transit that reduces vehicle miles traveled
- Sustainability Element Program SU-2d
Encourage continued funding, development and use of SMART
- Noise Element Program N-8a
Noise assessment required & mitigation measures identified

Recommended Action

- Adopt resolution adopting Initial Study/MND and approving MMRP (Attachment 1)
- Adopt resolution approving Alternative 6 at-grade crossing and directing staff to proceed with CPUC application (Attachment 2)

Comments & Questions

City Staff

Community Development & Public Works

Consultants

AECOM

Kimley Horn Associates

HDR

Table 1—Alternative 3 Intersection Delay and Levels of Service

Intersection	Existing		Alternative 3	
	Delay (sec)	Level-of-Service	Delay (sec)	Level-of-Service
Andersen Dr & Rice Dr	0.2	A	2.0	A
Andersen Dr & Woodland Ave	-	-	-	-
Auburn Red St & Woodland Ave	12.6	B	119.0	F
Francisco Blvd W & Rice Dr	1.9	A	9.3	A
DuBois St & Rice Dr	2.8	A	5.7	A
Francisco Blvd W & 101 SB Ramps	30.8	C	73.8	E
Andersen Dr & Francisco Blvd W	29.6	C	-	-
Andersen Dr & Old 101 SB Ramps	0.9	A	0.9	A
Bellam Blvd & Andersen Dr	53.5	D	94.4	F
Andersen Dr & DuBois St	31.6	C	10.1	B
Second St & Hetherton St	30.6	C	58.9	F
Second St & Tamalpais Ave	35.1	D	68.4	E
Second St & Lincoln Ave	51.4	D	124.0	F

Impacts to local Streets (LOS)

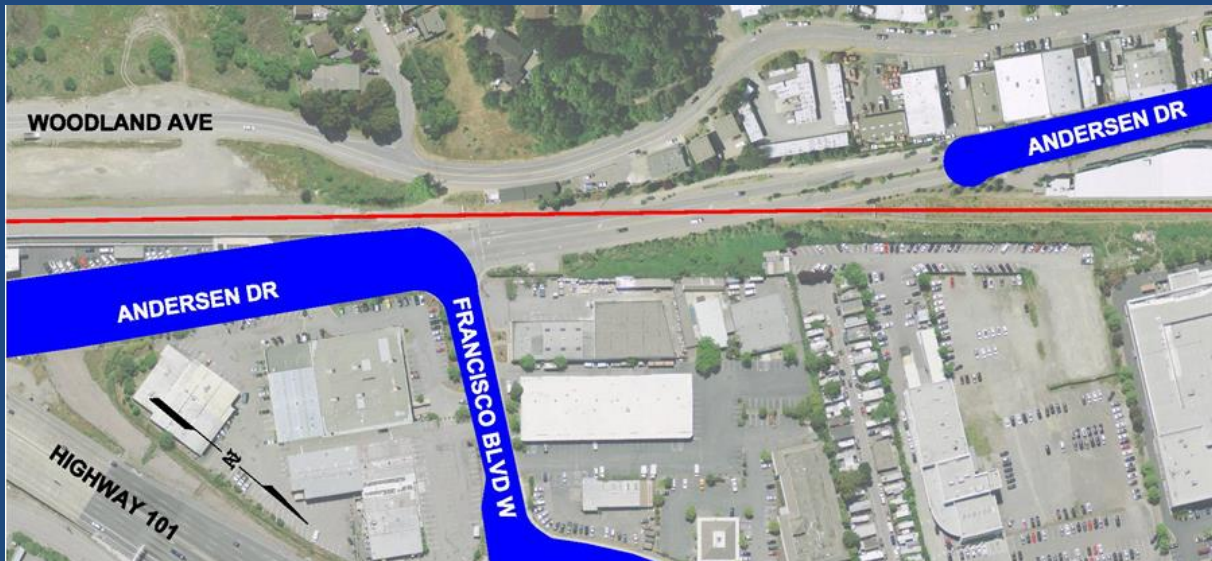


Table 2—Alternative 4 Intersection Delay and Levels of Service

Intersection	Existing		Alternative 4	
	Delay (sec)	Level-of-Service	Delay (sec)	Level-of-Service
Andersen Dr & Rice Dr	0.2	A	6.0	A
Andersen Dr & Woodland Ave	-	-	20.2	C
Auburn St & Woodland Ave	12.6	B	101.0	F
Francisco Blvd W & Rice Dr	1.9	A	51.5	F
DuBois St & Rice Dr	2.8	A	198.0	F
Francisco Blvd W & 101 SB Ramps	30.8	C	152.0	F
Andersen Dr & Francisco Blvd W	29.6	C	-	-
Andersen Dr & Old 101 SB Ramps	0.9	A	0.9	A
Bellam Blvd & Andersen Dr	53.5	D	167.0	F
Andersen Dr & DuBois St	31.6	C	19.0	B
Second St & Hetherton St	30.6	C	30.8	C
Second St & Tamalpais Ave	35.1	D	35.1	D
Second St & Lincoln Ave	51.4	D	63.1	E

Impacts to local Streets (LOS)



Table 4—Alternative 5 Intersection Delay and Levels of Service

Intersection	Existing		Alternative 5	
	Delay (sec)	Level-of-Service	Delay (sec)	Level-of-Service
Andersen Dr & Rice Dr	0.2	A	16.7	C
Andersen Dr & Woodland Ave	-	-	32.3	D
Auburn St & Woodland Ave	12.6	B	830.0	F
Francisco Blvd W & Rice Dr	1.9	A	25.1	D
DuBois St & Rice Dr	2.8	A	44.7	E
Francisco Blvd W & 101 SB Ramps	30.8	C	52.3	D
Andersen Dr & Francisco Blvd W	29.6	C	-	-
Andersen Dr & Old 101 SB Ramps	0.9	A	0.9	A
Bellam Blvd & Andersen Dr	53.5	D	137.0	F
Andersen Dr & DuBois St	31.6	C	20.3	C
Second St & Hetherton St	30.6	C	30.8	C
Second St & Tamalpais Ave	35.1	D	35.1	D
Second St & Lincoln Ave	51.4	D	63.1	E

Impacts to local Streets (LOS)

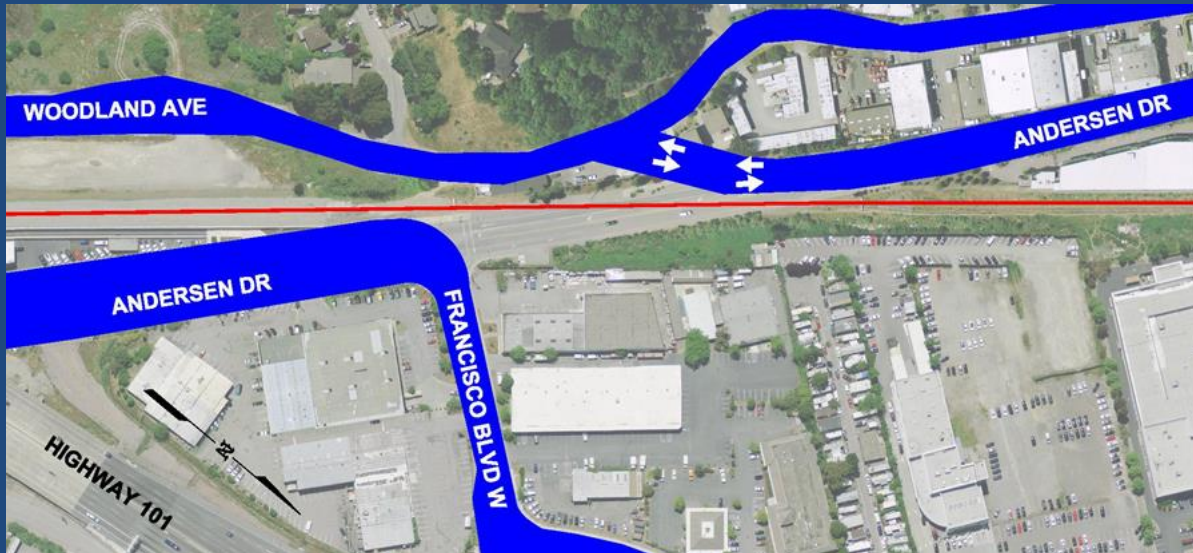


Table 5—Alternative 6 Intersection Delay and Levels of Service

Intersection	Existing		Alternative 6	
	Delay (sec)	Level of Service	Delay (sec)	Level of Service
Francisco Blvd W & 101 SB Ramps	30.8	C	34.2	C
Andersen Dr & Francisco Blvd W	29.6	C	29.9	C
Andersen Dr & Old 101 SB Ramps	0.9	A	0.9	A
Bellam Blvd & Andersen Dr	53.5	D	55.0	E
Andersen Dr & DuBois St	31.6	C	40.1	D

Impacts to local Streets (LOS)



Impacts to local Streets (LOS)

Table 6—Alternative 7 Intersection Delay and Levels of Service

Intersection	Existing		Alternative 7A		Alternative 7B	
	Delay (sec)	Level-of-Service	1-Lane-SB&EB		2-Lane-SB&EB	
			Delay (sec)	Level-of-Service	Delay (sec)	Level-of-Service
Woodland & Andersen Bypass*	0	0	64	F	7.93	A
Woodland & Bellam*	0	0	3.64	A	32.59	D
Woodland & DuBois*	0	0	105.07	F	10.3	B
Francisco W & 101 SB Ramp	30.7	C	73.84	E	77.63	E
Andersen & Francisco W (& Woodland)	28.3	C	41.37	D	42.93	D
Bellam & Andersen	53.3	D	57.7	E	61.13	E
Andersen & DuBois	27.6	C	85.02	F	28.81	C

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