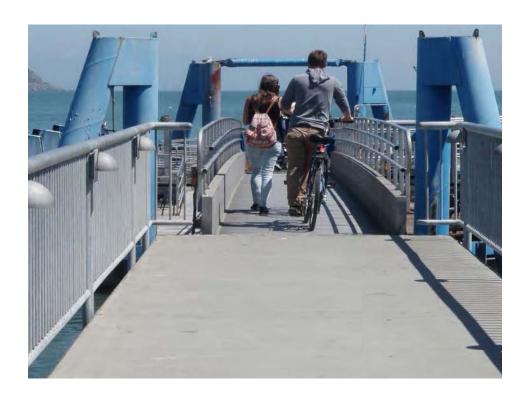


APPENDIX

Appendix A: Ferry Bicycle Ridership



Travelling by bicycle to Sausalito from San Francisco via the Golden Gate Bridge and then riding the ferry back to the city is a popular tourist activity. The following section summarizes trends in ferry ridership by bicyclists on an annual, typical springtime and peak summertime basis.

Annual Trends

The ferry from Downtown Sausalito is a popular alternative for tourists on foot and bicycles to travel back to San Francisco rather than walking or cycling back via the Golden Gate Bridge. Ferry service is provided by Golden Gate Transit and the Blue & Gold Fleet.

As shown in Figure A1, bicycle ridership on the Golden Gate Ferry grew consistently between 2012 and 2014. There was a drop in bicycle passengers starting in spring 2015, which carried into the summer. Annual Blue and Gold Fleet ridership data was not available.

The average annual Golden Gate Ferry bicycle ridership (average across 12 months) was approximately 16,000 passengers for 2014, which was the most recent full year's data. The average monthly bicycle ridership for March and April (15,500 monthly riders) represent the annual average. During the summer months of June to September, the monthly average was approximately 50 percent higher than the annual average. The peak months of July and August experienced ferry ridership 80 percent higher than the annual average.

It is important to note that ferry ridership is not proportional to overall bicycle ridership. Although the ferry ridership in the peak month of August was 80 percent higher than the annual average

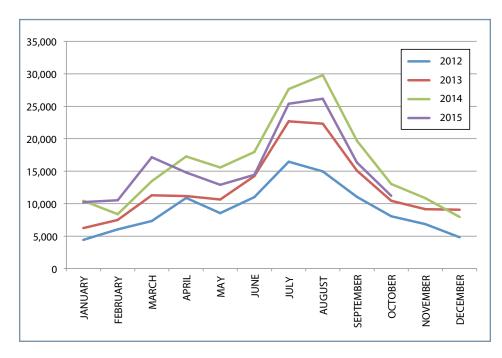


Figure A1: Golden Gate Ferry Monthly Bicycle Counts (Southbound), 2012-2015

Source: Golden Gate Transit, November 2015

(March/April), the overall bicycle activity passing through the South Gateway was only 20 percent higher. There are several reasons for this disproportionality. Tourists represent 40 to 50 percent of the bicycle riders passing through the South Gateway corridor, but are far more likely to ride the ferry back to San Francisco. Ferry ridership is also dependent on the available capacity; both Golden Gate Transit and the Blue & Gold Fleet run more ferries during the summer months.

The following section examines the daily bicycle trends and how they relate to ferry ridership.

Weekday Trends

Many tourists that ride or walk across the Golden Gate Bridge use the ferry service to travel back into San Francisco, which results in northbound (downhill) bicycle volumes that are higher than those in the southbound direction.

Figures A2 and A3 illustrate the relationship between South Gateway bicycle activity and bicycle ferry boardings on a sampled spring Wednesday and summer Thursday in 2015.

On the sampled Thursday in spring 2015, Golden Gate Ferry ran nine ferries and the Blue and Gold Fleet operated five ferries. The total ferry bicycle ridership that day was approximately 650 passengers, which captured approximately 70 percent of the difference between northbound and southbound bicycle traffic (2,200 northbound vs. 800 southbound).

On the sampled Wednesday in summer 2015, Golden Gate Ferry ran 11 ferries and the Blue and Gold Fleet operated seven ferries. The total ferry bicycle ridership that day was approximately 1,300 passengers, which was double the spring bicycle ferry ridership. The ferries captured approximately 95 percent of the difference between northbound and southbound bicycle traffic (3,900 northbound vs. 1,600 southbound).

Some bicyclists that ride through the South Gateway in the northbound direction may also return to San Francisco via the Tiburon Ferry, the Larkspur Ferry, or by taxi.

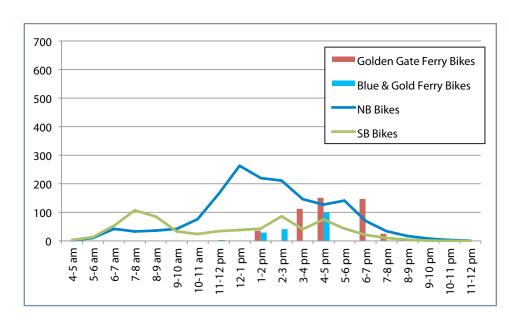


Figure A2: Spring Weekday (Thursdays)
Bicycle Traffic vs. SB Ferry Bicycle Passengers

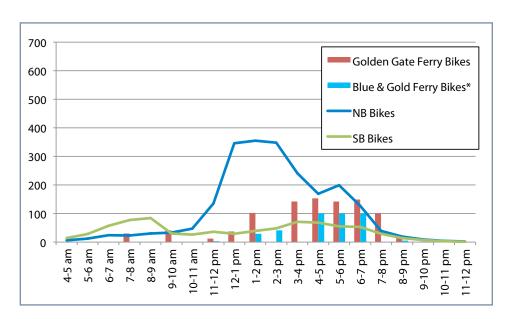


Figure A3: Summer Weekday (Wednesdays) Bicycle Traffic vs. SB Ferry Bicycle Passengers

Source: Bicycle counts: Parisi Transportation Consulting, 3/26 and 8/19/2015; Ferry ridership: Golden Gate Transit and Blue and Gold Fleet, 3/26 and 8/19/2015; *Blue and Gold Ferry ridership estimated from 3/26 data with adjustment to reflect summer ferry schedule.



Saturday Trends

Figures A4 and A5 illustrate the relationship on Saturdays between South Gateway bicycle activity and bicycle ferry boardings sampled in spring and summer in 2015.

In spring 2015, Golden Gate Ferry ran eight ferries and the Blue and Gold Fleet operated five ferries. The total ferry bicycle ridership that day was approximately 1,400 passengers, which captured approximately 90 percent of the difference between northbound and southbound bicycle traffic (3,000 northbound vs. 1,500 southbound).

In summer 2015, Golden Gate Ferry ran 10 ferries and the Blue and Gold Fleet operated seven ferries. The total ferry bicycle ridership that day was approximately 1,900 passengers, which was 35 percent higher than the spring Saturday bicycle ferry ridership. The ferries captured approximately 80 percent of the difference between northbound and southbound bicycle traffic (3,900 northbound vs. 1,600 southbound).

As with the weekday condition, some bicyclists that ride in the northbound direction may also return to San Francisco via the Tiburon Ferry, the Larkspur Ferry, or by taxi.

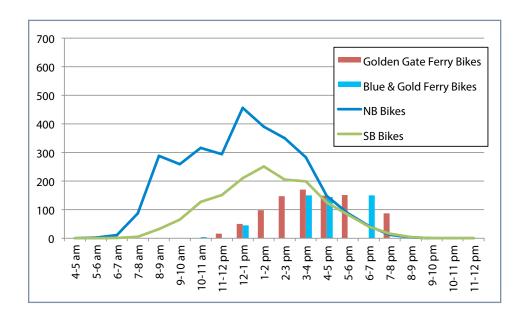


Figure A4: Spring Saturday Bicycle Traffic vs. Ferry Bicycle Passengers

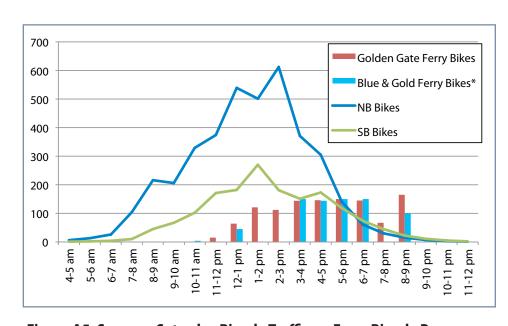


Figure A5: Summer Saturday Bicycle Traffic vs. Ferry Bicycle Passengers

Source: Bicycle counts, Parisi Transportation Consulting, 4/11 and 8/22/2015; Ferry ridership: Golden Gate Transit and Blue and Gold Fleet, 4/11 and 8/22/2015; *Blue and Gold Ferry ridership adjusted from spring 2015 data to reflect summer 2015 schedule.



Appendix B: Mill Valley – Sausalito Path Bicycle & Pedestrian Counts



The Mill Valley – Sausalito Path is the north gateway into the City of Sausalito. During the weekdays, it is commonly used by commuter bicyclists from north of Sausalito to travel into San Francisco. The path is also used by tourist and recreational bicyclists riding to and from routes to the north. Some bicyclists take a one-way bicycling trip up the Mill Valley – Sausalito Path and return via the ferry services from the City of Larkspur or Town of Tiburon (or vice versa).

Figures A6 and A7 illustrate the bicycle and pedestrian traffic across 24 hours during a sampled summer weekday and Saturday. On the sampled weekday, there were nearly 1,500 bicyclists and approximately 200 pedestrians observed on the path. Northbound and southbound bicycle traffic was relatively balanced (52 percent NB/48 percent SB).

The path was nearly twice as busy on the sampled Saturday, with more than 3,000 bicyclists and more than 300 pedestrians counted across a 24-hour period. The Saturday bicycle traffic was more heavily slanted in the northbound direction (58 percent NB / 42 percent SB), indicating more bicyclists taking a one-way trip.

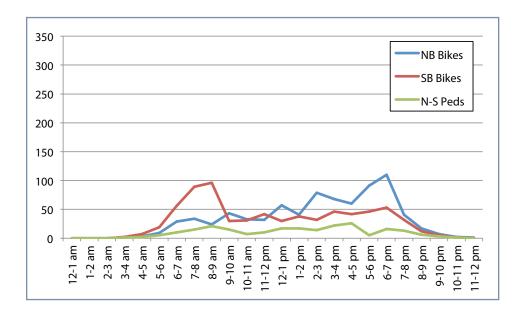


Figure A6: Summer Weekday Bicycle and Pedestrian Traffic

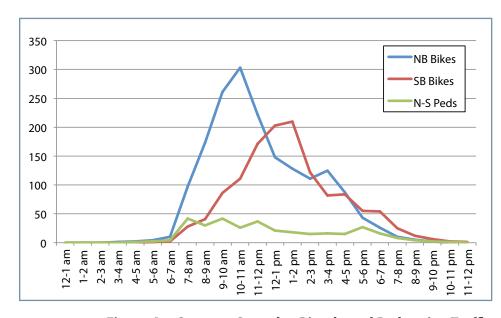


Figure A7: Summer Saturday Bicycle and Pedestrian Traffic

Source: Bicycle counts, Parisi Transportation Consulting, 8/19 and 8/22/2015

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Appendix C: Downhill Bike Lane Analysis

The following tables summarize the bike lane capacity analysis referred to in the Bicycle Facilities section of the Existing Conditions Overview. Peak uphill bike traffic is currently less than 300 cyclists per hour and uphill bicyclists travel at relatively low speed that is consistent among most riders. Given these factors, the uphill bike lane on Second Street operates at an estimated bike lane level of service (LOS) C.

If the Second Street bike lane was moved to the downhill direction, the volume of traffic (450-600+ during the peak hour), high mean speed, and large variation between riders would still result in frequent bicycle conflicts. The FHWA methodology predicts a bike lane level of service "F", meaning bicyclists would continue to use the vehicular lane.

Table A1 - South Gateway Daily Hourly Peak Volumes

	Spi	ring	Summer			
	Uphill (SB) Down		Uphill (SB)	Downhill (NB)		
Weekday	110	275	85	355		
Saturday	Saturday 250		270	615		

Source: Parisi Transportation Consulting, March/April & August 2015.

Table A2 – South Gateway Uphill / Downhill Bike Lane Level of Service Analysis

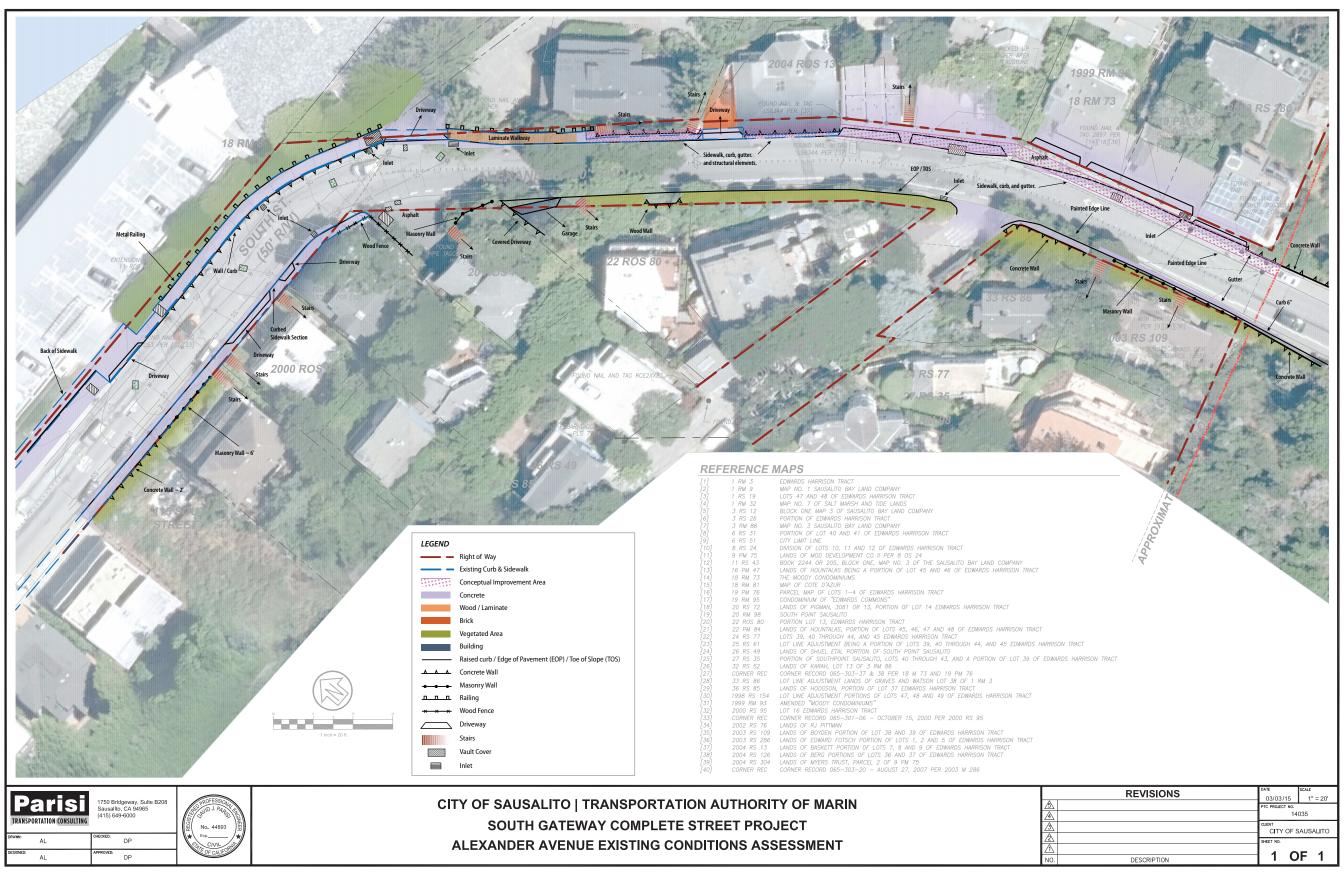
Bicycle flow rate (bike/h)	Standard deviation a (mph)	Number of Bicycle Conflicts and LOS Bicycle Mean Speed (mph)								
200	1	56(B)	52(B)	48(B)	45(B)	42(B)	40(B)	38(A)	36(A)	34(A)
200	2	113(D)	104(D)	97(C)	90(C)	85(C)	80(C)	75(C)	71(C)	68(C)
200	3	169(E)	156(E)	145(D)	135(D)	127(D)	119(D)	113(D)	107(D)	102(D)
300	1	85(C)	78(C)	73(C)	68(C)	63(C)	60(C)	56(B)	53(B)	51(B)
300	2	169(E)	156(E)	145(D)	135(D)	127(D)	119(D)	113(D)	107(D)	102(D)
300	3	254(F)	234(F)	218(F)	203(F)	190(E)	179(E)	179(E)	160(E)	152(E)
400	1	112(D)	104(D)	96(C)	92(C)	84(C)	80(C)	76(C)	72(C)	68(C)
400	2	224(F)	208(F)	192(E)	184(E)	168(E)	160(E)	152(E)	144(D)	136(D)
400	3	336(F)	312(F)	288(F)	276(F)	252(F)	240(F)	228(F)	216(F)	204(F)

Uphill bike lane low mean speed and low standard deviation

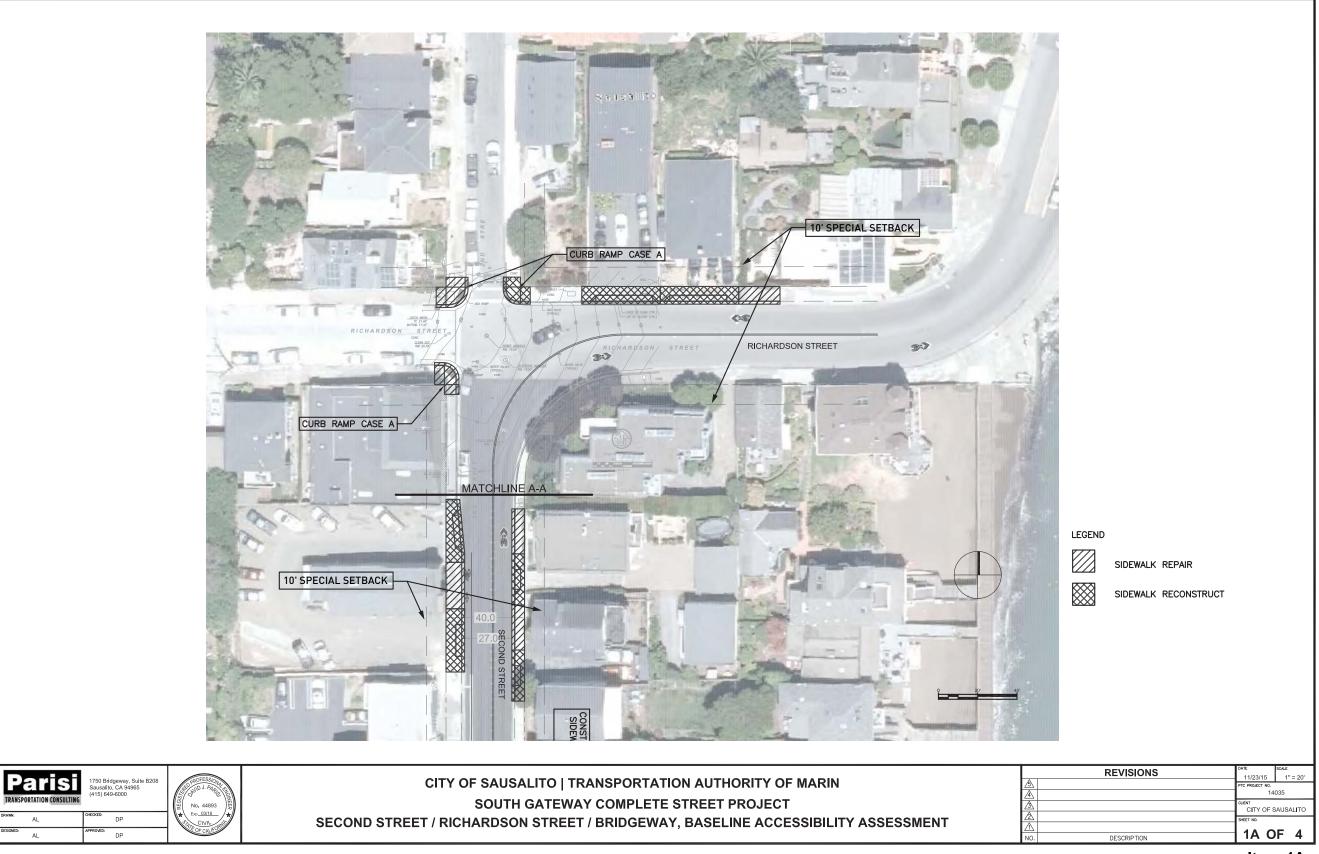
Downhill bike lane high mean speed and high standard deviation

Source: FHWA (1998) Capacity Analysis of Pedestrian and Bicycle Facilities

Appendix D: Alexander Avenue Detailed Existing Conditions Assessment



Appendix E: Alternative Project Concepts





CITY OF SAUSALITO | TRANSPORTATION AUTHORITY OF MARIN

SOUTH GATEWAY COMPLETE STREET PROJECT

SOUTH STREET, BASELINE ACCESSIBILITY ASSESSMENT

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SIDEWALK REPAIR

SIDEWALK RECONSTRUCT

REVISIONS

DP



CITY OF SAUSALITO | TRANSPORTATION AUTHORITY OF MARIN

SOUTH GATEWAY COMPLETE STREET PROJECT

SOUTH STREET, ADDITIONAL IMPROVEMENT CONCEPT 1

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4/19/16

11/23/15 1" = 20'

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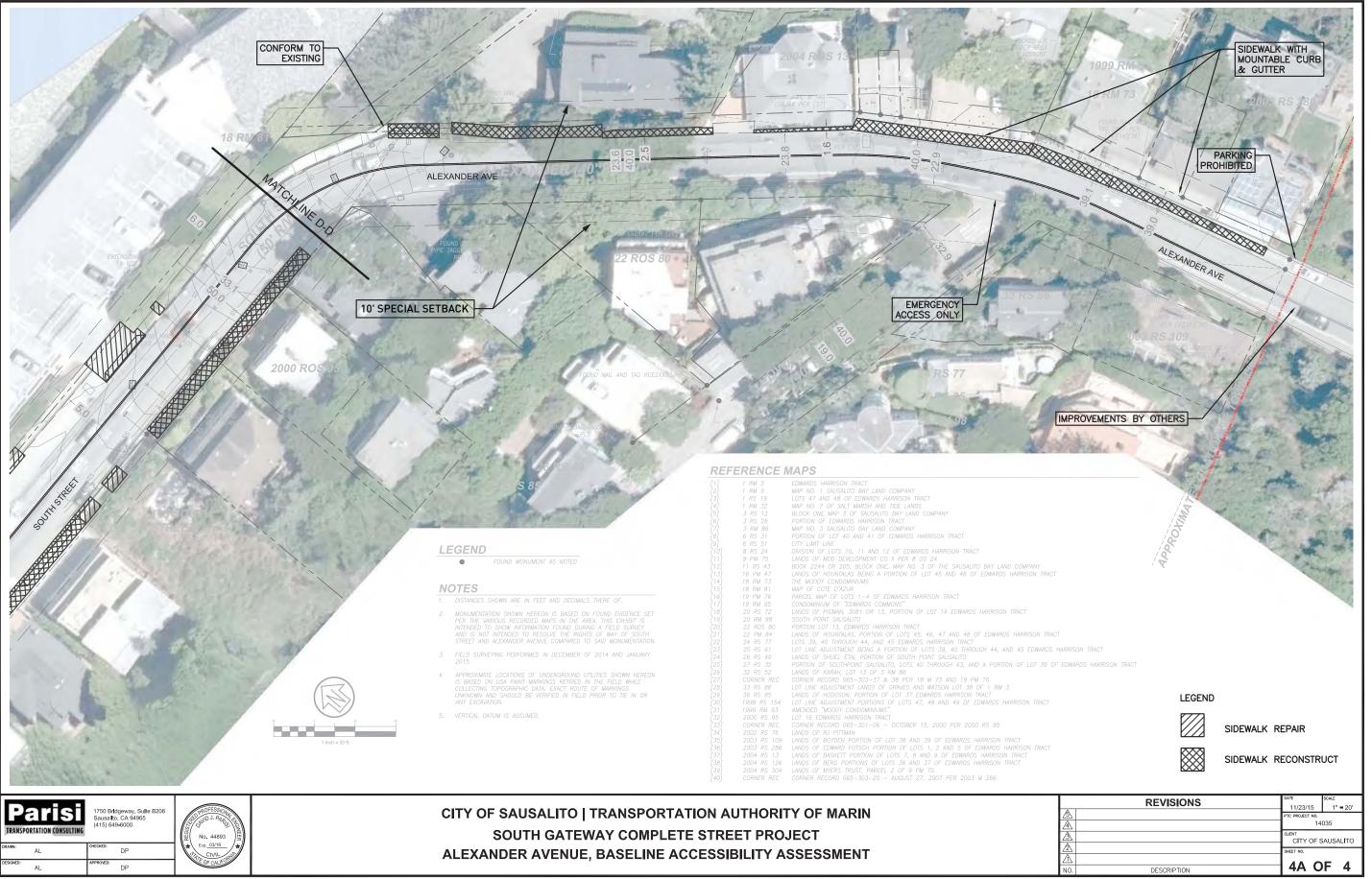
CITY OF SAUSALITO

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SIDEWALK REPAIR

SIDEWALK RECONSTRUCT

REVISIONS



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