Caltrans District 4 Bike Plan

for the San Francisco Bay Area

Appendices

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PLANNING + DESIGN

2018

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Caltrans District 4 Bike Plan

for the San Francisco Bay Area

APPENDIX A

Project List

2018

Num	County	Route	BPM	EPM	City	Location	Improvement Type	Description	Cost	Tier
Ala-112-C01	Alameda	112	0	1.78	San Leandro	Doolittle Dr - E. 14th St	Corridor Improvement- Class IV	Provide a Class IV separated bikeway on Davis St (Hwy 61) from Doolittle Dr to E 14th St (Hwy 185)	$$	TOP
Ala-123-C01	Alameda	123	0.75	4.14	Berkeley	Dartmouth St - Haskell St	Corridor Improvement- Class IV	From Berkeley Bike Plan - City of Berkeley limits only	$$$	TOP
Ala-123-C02	Alameda	123	0.25	0.75	Emeryville	53rd St- 36th St	Corridor Improvement- Class IV	Provide Class IV bikeway on San Pablo Ave in Emeryville	$$	TOP
Ala-123-X01	Alameda	123	3.9		Berkeley	Gilman St	Intersection Improvement at controlled intersection	Explore protected intersection improvements or lane continuation for Gilman Street	$	TOP
Ala-123-X02	Alameda	123	3.52		Berkeley	Cedar St/Hopkins St	Intersection Improvement at controlled intersection	City of Berkeley to conduct complete streets corridor study on Hopkins between 9th and Milvia Street putting cycletrack on Cedar/Hopkins through Complete Streets Corridor Study. Interim treatment planned.	$	TOP
Ala-123-X03	Alameda	123	3.01		Berkeley	Addison St	Intersection Improvement at controlled intersection	Proposed City of Berkeley Bicycle Plan (2017) project for Cycletrack crossing of San Pablo Avenue to connect Addison Street	$$	MID
Ala-123-X04	Alameda	123	2.9		Berkeley	Allston Way	Intersection Improvement at controlled intersection	Explore improved crossing for bicyclists on Allston Way bicycle boulevard	$	MID
Ala-123-X05	Alameda	123	2.64		Berkeley	Channing	Intersection Improvement at uncontrolled intersection	Proposed City of Berkeley Bicycle Plan (2017) project for Pedestrian Hybrid Beacon across San Pablo to connect Channing	$$	TOP
Ala-123-X06	Alameda	123	2.39		Berkeley	Parker St	Intersection Improvement at uncontrolled intersection	Proposed City of Berkeley Bicycle Plan (2017) project for Pedestrian Hybrid Beacon across San Pablo to connect Parker Street	$$	TOP
Ala-123-X07	Alameda	123	2.06		Berkeley	Heinz St - Oregon St	Intersection Improvement at controlled intersection	City of Berkeley Bike Plan (2017) proposes two-way cycletrack connector between Heinz and Oregon Street	$	TOP
Ala-123-X08	Alameda	123	1.88		Berkeley	Ashby Ave	Intersection Improvement at controlled intersection	High demand for crossing at Ashby Avenue from Caltrans District 4 Bicycle Plan Public Input Survey	$	TOP
Ala-123-X09	Alameda	123	1.59		Berkeley, Oakland	65th St	Intersection Improvement at controlled intersection	Explore improved bicycle crossing for 65th Street across San Pablo.	$	TOP
Ala-123-X10	Alameda	123	0.81		Oakland, Emeryville	53rd St	Intersection Improvement at controlled intersection	Explore improved bicycle crossing and left turn for 53rd across San Pablo	$	TOP
Ala-123-X11	Alameda	123	0.38		Emeryville	40th St	Intersection Improvement at controlled intersection	Provide bicycle improvements to intersection of 40th Street and San Pablo with enhanced markings, bike boxes, and improved bicycle detection	$	TOP
Ala-123-X12	Alameda	123	4.35		Albany	Marin Ave	Intersection Improvement at controlled intersection	Explore continuing bike lanes through intersection to connect Marin Avenue	$	TOP

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Ala-123-X13	Alameda	123	3.4		Berkeley	Virgina St	Intersection Improvement at uncontrolled intersection	Pedestrian hybrid beacon at uncontrolled intersection as proposed in Berkeley Bicycle Plan (2017)	$	MID
Ala-123-X14	Alameda	123	3.77		Berkeley	Carmelia	Intersection Improvement at uncontrolled intersection	Pedestrian hybrid beacon for planned bike blvd on Carmelia as proposed in Berkeley Bicycle Plan (2017)	$	TOP
Ala-123-X15	Alameda	123	1.41		Oakland	63rd St	Intersection Improvement at controlled intersection	Provide improved crossing of San Pablo at dog legged 63rd St intersection, potentially implementing a short stretch of 2-way cyceltrack on one side to facilitate turns.	$	TOP
Ala-13-C01	Alameda	13	6.2	6.2	Oakland	Burdeck Rd - Joaquni Miller Ave	Corridor Improvement- Class I	Pave existing path from Burdeck Rd to Joaquin Miller Ave along Hwy 13. Remove slip lane from Hwy 13 NB exit on to Joaquin Miller Rd. Existing informal path is in Caltrans ROW.	$$	LOW
Ala-13-C02	Alameda	13	4.26	4.26	Oakland	Hwy 24 - I-580	Corridor Improvement- Class I	Provide Class I trail parallel to Hwy 13	$$$	LOW
Ala-13-X01	Alameda	13	12.17		Berkeley	Adeline St	Intersection Improvement at controlled intersection	Continue bike lane through intersection on Adeline St. City of Berkeley is studying improvements.	$	MID
Ala-13-X02	Alameda	13	12.62		Berkeley	California St	Intersection Improvement at uncontrolled intersection	Explore improving crossing at Ashby Avenue to connect bicycle boulevard on California Street	$	TOP
Ala-13-X03	Alameda	13	13.32		Berkeley	Ninth St	Intersection Improvement at controlled intersection	Enhanced crossing on Ashby Ave to connect two segments of a shared use path includ bicycle signal coordinated with auto signals at ninth street and video detection along the path.	$	TOP
Ala-13-X04	Alameda	13	9.07		Oakland	Broadway Terrace	Minor interchange improvements (signage and striping)- Class II	Stripe ramps for SR 13 at Broadway Terrace. Consider stop signs and minor civil improvements to reduce free flow of traffic on and off the ramps.	$	LOW
Ala-13-X05	Alameda	13	8.3		Oakland	Moraga Ave	Minor interchange improvements (signage and striping)- Class II	Install Class IV separated bikeway through interchange	$	TOP
Ala-13-X06	Alameda	13	7.38		Oakland	Park Blvd	New separated crossing	Provide Class I path along Park Blvd as it crosses Hwy 13	$$$$	TOP
Ala-13-X07	Alameda	13	5.36		Oakland	Redwood Ave	Minor interchange improvements (signage and striping)- Class II	Explore reconstruction of ramp from NB CA 13 and installation of Class IV separated bikeway	$	TOP
Ala-13-X08	Alameda	13	4.81		Oakland	Carson St	New separated crossing	Replace existing ped-only crossing with bike/ped crossing	$$$$	TOP
Ala-13-X09	Alameda	13	39.78		Oakland	Mountain Blvd	Minor interchange improvements (signage and striping)- Class II	Add stop signs on ramps - bike lanes must turn against ramps. Potentially reconstruct ramp from SR 13 SB to Calaveras Ave.	$	TOP

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Ala-13-X10	Alameda	13	11.4		Berkeley	Hillegass	Intersection Improvement at uncontrolled intersection	Bicycle improvements at intersection as proposed in Berkeley Bicycle Plan (2017)	$	TOP
Ala-185-C01	Alameda	185	6.63	9.14	Oakland, San Leandro	66th Ave - Bristol Blvd	Corridor Improvement- Class II	Provide Class II bikeway along International (Hwy 185). May be challenging to implement with Bus Rapid Transit improvements currently in construction.	$	MID
Ala-185-C02	Alameda	185	3.47	5.76	San Leandro	Davis St - Fairmont Dr	Corridor Improvement- Class IV	Provide a Class IV separated bikeway on E 14th (Hwy 185) from Davis St - Fairmont Dr	$$	TOP
Ala-238-C01	Alameda	238	0	3.87	Fremont	I-680 - King Ave (Fremont border)	Corridor Improvement- Class IV	Proposed Class IV in Fremont Bike Plan	$$$	TOP
Ala-238-X01	Alameda	238	16.33		San Leandro, Ashland	Hesperian Blvd	Minor interchange improvements (signage and striping)- Class IIB	Corridor study in an Leandro Bicycle and Pedestrian Master Plan (2017). Interchange ramps already square, can accommodate Class II, buffered, or Class IV	$	TOP
Ala-238-X02	Alameda	238	5.1		Union City	Dry Creek (Whipple Rd)	Intersection Improvement at uncontrolled intersection	Provide beacon or other improved crossing of Mission Rd at Dry Creek	$	TOP
Ala-24-C01	Alameda	24	3.23	3.23	Oakland	Claremont Ave - Hudson St	Corridor Improvement- Class I	Extend Frog Park Path along CA 24 ROW to Forest St	$$	LOW
Ala-24-X01	Alameda	24	2.86		Oakland	52nd St	Minor interchange improvements (signage and striping)- Class II	Explore interchange improvments on 52nd	$	MID
Ala-24-X02	Alameda	24	3.1		Oakland	55th St	Minor interchange improvements (signage and striping)- Class II	Explore interchange improvments on 55th Street and Telegraph	$$	MID
Ala-260-X01	Alameda	260	1.5		Oakland, Alameda	Embarcadero - Marina Village Pkwy	New separated crossing	New estuary overcrossing that would connect Alameda and Oakland, as studied in the City of Alameda Estuary Crossing Study Final Feasibility Study Report (2009)	$$$$	TOP
Ala-262-C01	Alameda	262	0.54	1.07	Fremont	I-680 - Warm Springs Blvd	Corridor Improvement- Class IV	Proposed Class IV separated bikeway on Warm Springs Blvd to I-680 and continuing on Mission Blvd	$$	LOW
Ala-580-X01	Alameda	580	44.32		Oakland	Oakland Ave/Harrison St	Minor interchange improvements (signage and striping)- Class II	Explore improving ramp crossing on Oakland Avenue and Harrison Street and provide bicycle priority merge treatments	$	MID
Ala-580-X02	Alameda	580	43.63		Oakland	Grand Ave	Intersection Improvement at controlled intersection	Explore Class IV separated bikeway on Grand Avenue through interchange	$	MID
Ala-580-X03	Alameda	580	42.66		Oakland	Park Blvd	Minor interchange improvements (signage and striping)- Class II	Explore interchange improvements, such as bicycle priority merge treatment and good lighting	$	MID

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Ala-580-X04	Alameda	580	34.5		San Leandro	Estudillo Ave	Minor interchange improvements (signage and striping)- Class II	Evaluate interchange improvements	$$	LOW
Ala-580-X05	Alameda	580	33.94		San Leandro	Grand Ave	Minor interchange improvements (signage and striping)- Class II	Explore interchange improvements, such as tightening curb radii and removing slip lanes	$	MID
Ala-580-X06	Alameda	580	30.57		Castro Valley	Castro Valley Blvd	Interchange reconstruction - ramps only- Class IV	Potentially reconstruct and square up ramps. Provide separate path of of travel for bicyclists through complex interchange	$$$$	TOP
Ala-580-X07	Alameda	580	29.37		Castro Valley	Redwood Rd	Minor interchange improvements (signage and striping)- Class II	Minor interchange improvements as outlined in Alameda County Unincorporated Area Bike Plan	$	MID
Ala-580-X08	Alameda	580	28.41		Castro Valley, Fairview	Grove Way	Minor interchange improvements (signage and striping)- Class II	Potentially adjust ramps to reduce curb radii. Grove Way t o I-580 east may require more significant adjustment or removal. Supports Alameda County Unincorporated Area bike plan	$	LOW
Ala-580-X09	Alameda	580	18.32		Pleasanton	Tasajra Creek	New separated crossing	Explore separated crossing as proposed in Dublin Bicycle and Pedestrian Master Plan and Pleasanton Pedestrian and Bicycle Master Plan	$$$$	MID
Ala-580-X10	Alameda	580	17.95		Dublin, Pleasanton	Santa Rita Rd	Interchange reconstruction - ramps only- Class IIB	Explore potential removal of one of the on ramps from Santa Rita Rd to I-580 East	$$$$	TOP
Ala-580-X11	Alameda	580	16.71			El Charro Rd	Interchange reconstruction - ramps only- Class II	Reconstruct and square up ramps at El Charro Rd to reduce conflicts with bicyclists	$$$$	MID
Ala-580-X12	Alameda	580	21.42		Pleasanton	San Ramon Rd	Interchange reconstruction - ramps only- Class II	Reconstruct and square up ramps at San Ramon Rd to reduce conflicts with bicyclists	$$$$	MID
Ala-580-X13	Alameda	580	38.96		Oakland	Seminary Ave	Minor interchange improvements (signage and striping)- Class II	Provide striping and signage along Seminary Ave in I-580 interchange	$	MID
Ala-580-X14	Alameda	580	38.32		Oakland	Kuhnle Ave	Minor interchange improvements (signage and striping)- Class II	Explore installing bike lanes in interchange area.	$	TOP
Ala-580-X15	Alameda	580	36.39		Oakland	Golf Links Rd	Minor interchange improvements (signage and striping)- Class II	Consider squaring on-ramp from 98th to I-580 east bound and adding stop signs for ramp access (esp from 98th Ave heading west) to reduce speeds.	$	TOP
Ala-580-X16	Alameda	580	19.39		Dublin	Demarcus Blvd	New separated crossing	Connect Iron Horse Trail thru Dublin/Pleasanton BART station using Caltrans ROW	$$$$	LOW
Ala-580-X17	Alameda	580	13.81		Livermore	Sutter St	New separated crossing	Provide bike/ped overcrossing of I-80 east of Isabel Ave consistent with Isabel specific plan and SF Bay to San Joaquin River Trail	$$$$	LOW

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Ala-580-X18	Alameda	580	14.49		Livermore	Heritage Dr	New separated crossing	Provide separated bike/ped crossing over I-580 west of Isabel Ave	$$$$	LOW
Ala-580-X19	Alameda	580	28.71		Livermore	Airway Blvd	Minor interchange improvements (signage and striping)- Class II	Provide bike lanes, conflict striping, and signage on Airway Blvd across I-580	$	MID
Ala-580-X20	Alameda	580	12.54		Livermore	N Livermore Ave	Minor interchange improvements (signage and striping)- Class II	Provide bike lanes, conflict striping, and signage on Livermore Ave across I-580	$	LOW
Ala-580-X21	Alameda	580	9.68		Livermore	Vasco Rd	Interchange reconstruction - ramps only- Class IV	Reconstruct and square up ramps at I-580 Vasco Rd interchange.	$$$$	MID
Ala-580-X22	Alameda	580	10.68		Livermore	First St	Minor interchange improvements (signage and striping)- Class IIB	Provide buffered bike lanes on First St thru I-580 interchange	$	MID
Ala-61-C01	Alameda	61	21.25	21.97	Alameda	Webster St - Encinal Ave	Corridor Improvement- Class II	Buffered bike lanes in select locations from Webster St to Encinal Ave as proposed in City of Alameda Central Ave Complete streets plan.	$	MID
Ala-61-C02	Alameda	61	15.92	16.45	Oakland	Swan Way - Shoreline Center	Corridor Improvement- Class I	Coastal alignment of Doolittle Trail from Swan Way to Shoreline Center on Doolittle Drive	$$	TOP
Ala-61-C03	Alameda	61	17.47	18.07	Alameda, Oakland	Harbor Bay Pkwy - MLK Shoreline Center	Corridor Improvement- Class I	Doolittle Drive Bay Trail Gap Closure - Provide Class I trail from Harbor Bay Parkway to Swan Way	$$	TOP
Ala-61-C04	Alameda	61	15	15.9	San Leandro	Airport Access Rd - Davis St	Corridor Improvement- Class IV	Provide a Class IV bikeway on Doolittle Drive from Airport Access Rd to Davis St and continuing on Doolittle Dr as a local street in San Leandro	$$	TOP
Ala-61-X01	Alameda	61	19.8		Alameda	Broadway Ave/Encinal Ave	Intersection Improvement at controlled intersection	Explore bicycle improvements to intersection and improve left turn from Broadway to Encinal	$	MID
Ala-680-X01	Alameda	680	19.28		Pleasanton	Stoneridge Dr	Interchange reconstruction - full reconstruction- Class II		$$$$	TOP
Ala-680-X02	Alameda	680	17.16		Pleasanton	Arroyo de Laguna	New separated crossing	Dublin bike plan includes paving an unpaved trail and continuing under I-680	$$$$	TOP
Ala-680-X03	Alameda	680	15.23		Pleasanton	Sunol Rd	Interchange reconstruction - ramps only- Class II	Explore interchange reconstruction and squaring up of ramps.	$$$$	LOW
Ala-680-X04	Alameda	680	0.01		San Ramon, Dublin	Alcosta Blvd	Minor interchange improvements (signage and striping)- Class II	Provide signage and striping on Alcosta Blvd through I-680 interchange	$	TOP
Ala-680-X05	Alameda	680	0.15		Fremont	Scott Creek Rd	Interchange reconstruction - ramps only- Class IV	Explore interchange reconstruction and squaring up of ramps and recommendations in Fremont Bicycle Master Plan	$$$$	TOP

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Ala-680-X06	Alameda	680	1.07		Fremont	Mission Blvd	Interchange reconstruction - ramps only- Class IV	Explore recommendations through interchange as laid out by Fremont Bicycle Master Plan	$$$$	LOW
Ala-680-X07	Alameda	680	4.06		Fremont	Auto Mall Pkwy	Interchange reconstruction - ramps only- Class IV	Reconstruct and square up highway ramps on I-680 to provide Class IV facility through interchange on Auto Mall Pkwy	$$$$	MID
Ala-680-X08	Alameda	680	4.95		Fremont	Washington Blvd	New separated crossing	Explore separated crossing as proposed in Fremont Bicycle Master Plan	$$$$	TOP
Ala-680-X09	Alameda	680	5.37		Fremont	Washington Blvd	Minor interchange improvements (signage and striping)- Class II	Provide signage and striping on Washington Blvd thru I-680 interchnage	$	TOP
Ala-680-X10	Alameda	680	5.93		Fremont	E of Palm Ave	New separated crossing	Provide new separated bike/ped crossing of I-680 near Palm Ave	$$$$	LOW
Ala-80-X01	Alameda	80	6.64		Berkeley	Gilman St	New separated crossing	Alameda CTC proposed bike and pedestrian bridge to accompany buildout of roundabouts at Gilman and Interstate 80	$$$$	TOP
Ala-80-X02	Alameda	80	3.77		Emeryville	Powell St	Minor interchange improvements (signage and striping)- Class I	Provide improved striping, signage and a potential bicycle signal for crossings of the I-80 on and off-ramps with Powell St/the Bay Trail	$$	TOP
Ala-80-X03	Alameda	80	4.54		Berkeley	Ashby Rd (Hwy 13)	Interchange reconstruction - full reconstruction- Class I	Alameda CTC conducting ongoing study of full interchange reconstruction to ensure continuity of bike facilities from Bay Trail to local on-street bicycle network east of I-80	$$$$	TOP
Ala-84-C01	Alameda	84	6.92	10.82	Fremont	I-880 - Mission Blvd	Corridor Improvement- Class IV	Explore upgrading bicycle facilities from Class IV from Class II buffered bike lanes.	$$$	TOP
Ala-84-C02	Alameda	84	27.25	27.76	Livermore	Airway Blvd - W Jack London Blvd	Corridor Improvement- Class I	Provide Class I path adjacent to Hwy 84 between Airway Blvd and W Jack London Blvd	$$	MID
Ala-84-C03	Alameda	84	24.67	25.27	Livermore	Arroyo Valle - Vineyard Ave	Corridor Improvement- Class I	Extend existing Hwy 84 south from existing Class I to Vineyard Ave	$$	TOP
Ala-84-C04	Alameda	84	27.75	28.71	Livermore	Hwy 84 - I-580	Corridor Improvement- Class I	Provide Class I path parallel to Airway Blvd from Hwy 84 to I-580	$$	LOW
Ala-84-C05	Alameda	84	0.71	2.97	Fremont	Marshlands Rd - Hwy 84 path	Corridor Improvement- Class I	Provide Class I along Marshlands Rd parallel to Hwy 84. Marshlands is Caltrans ROW where it directly parallels Hwy 84.	$$$	MID
Ala-84-X01	Alameda	84	3.72		Fremont	Paseo Padre Pkwy	Interchange reconstruction - ramps only- Class IV	Reconstruct and square up highway ramps on Hwy 84 and provide Class IV thru interchange along Paseo Padre Pkwy	$$$$	MID
Ala-84-X02	Alameda	84	4.9		Fremont	Newark Blvd	Minor interchange improvements (signage and striping)- Class IV	Provide Class IV thru Hwy 84 interchange on Newark Blvd	$$	MID

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Ala-880-X01	Alameda	880	1.92		Oakland	Martin Luther King Jr Way	Minor interchange improvements (signage and striping)- Class II	Provide improved markings and wayfinding on streets to cross under 880/980 underpasses	$	MID
Ala-880-X02	Alameda	880	16.35		Hayward	Eden Greenway	New separated crossing	Provide separated bike/ped crossing connecting two sides of the Eden Greenway	$$$	TOP
Ala-880-X03	Alameda	880	20.82		San Leandro	Washington Ave	Interchange reconstruction - ramps only- Class IV	Install Class IV separated bikeway as proposed in the San Leandro Bicycle and Pedestrian Master Plan (2017). Explore reconfiguring interchange ramps west of I-880	$$$	TOP
Ala-880-X04	Alameda	880	17.59		Hayward	Winton Ave	Interchange reconstruction - ramps only- Class II	Consistent with Hayward Bike Plan, consider squaring on and off-ramps	$$$	TOP
Ala-880-X05	Alameda	880	18.34		Hayward	W A St	Minor interchange improvements (signage and striping)- Class II	Remove slip lanes to T-up interchange exits.	$	TOP
Ala-880-X06	Alameda	880	15.62		Hayward	W Tennyson Rd	Interchange reconstruction - ramps only- Class IV	Install bike lanes across interchange area.	$$$	TOP
Ala-880-X07	Alameda	880	13.66		Union City, Hayward	Whipple Rd	Interchange reconstruction - full reconstruction- Class IIB	As part of Whipple Rd/Industrial Pkwy project by ACTC, provide new separated crossing on or near Ward Creek to connect to existing path	$$$	TOP
Ala-880-X08	Alameda	880	14.51		Hayward, Union City	Industrial Pkwy W	New separated crossing	Explore reconfiguring ramp connections to Industrial Blvd.	$$$	TOP
Ala-880-X09	Alameda	880	11.43		Fremont	Alvarado Blvd	Minor interchange improvements (signage and striping)- Class IV	Explore creating new separtated crossing	$$	LOW
Ala-880-X10	Alameda	880	10.9		Fremont	Paseo Padre Pkwy	New separated crossing	Explore new separated crossing consistent with 2017 Fremont Bicycle Master Plan Update	$$$	TOP
Ala-880-X11	Alameda	880	6.01		Fremont	Decoto Rd	New separated crossing	Proposed in Fremont Bike Plan	$$$	TOP
Ala-880-X12	Alameda	880	8.79		Fremont	Thornton Ave	Interchange reconstruction - ramps only- Class IIB	Reconstruct and square up ramps to I-880 on Thornton Ave to provide buffered bike lanes	$$$	TOP
Ala-880-X13	Alameda	880	7.16		Fremont	Mowry Ave	Interchange reconstruction - ramps only- Class IIB	Explore squaring up ramps and other interchange improvements	$$$	TOP
Ala-880-X14	Alameda	880	6.2		Fremont	Stevenson Blvd	Interchange reconstruction - ramps only- Class II	Explore squaring up ramps and other interchange improvements	$$$	TOP
Ala-880-X15	Alameda	880	4.67		Fremont	Auto Mall Pkwy	Interchange reconstruction - ramps only- Class IV	Explore squaring up ramps and other interchange improvements	$$$	MID
Ala-880-X16	Alameda	880	3.22		Fremont	Fremont Blvd	Interchange reconstruction - ramps only- Class II	Explore interchange reconstruction and installation of Class II buffered bike lanes or Class IV separated bikeway.	$$$	MID

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Ala-880-X17	Alameda	880	2.72		Fremont	Agua Caliente Creek	New separated crossing	Explore separated crossing of 880 as mentioned in Fremont Bicycle Master Plan	$$$$	LOW
Ala-880-X18	Alameda	880	13.02		Union City	Alvarado Niles Rd	Interchange reconstruction - ramps only- Class II	Explore interchange reconstruction to square up ramps and install bike lanes	$$$$	MID
Ala-880-X19	Alameda	880	25.5		Oakland	Hegenberger Rd	Minor interchange improvements (signage and striping)- Class II	Explore ramp reconfiguration	$$	TOP
Ala-880-X20	Alameda	880	26.58		Oakland	66th Ave	New separated crossing	Provide seprated crossing of I-880 as part of Coliseum BART to Bay Trail connection.	$$$$	TOP
Ala-880-X21	Alameda	880	27.25		Oakland	54th Ave	New separated crossing	Provide separated crossing of I-880 on 50th Ave or 54th Ave/flood control chanel	$$$$	TOP
Ala-880-X22	Alameda	880	27.81		Oakland	High St	Minor interchange improvements (signage and striping)- Class IIB	Explore adding bike signal given complex turn movements	$	TOP
Ala-880-X23	Alameda	880	34.53		Oakland	Grand Ave	New separated crossing	The Link to Gateway Park and Bay Bridge - separated pathway connecting Oakland to the Bay Bridge Trail and Gateway Park.	$$$$	TOP
Ala-880-X24	Alameda	880	30.79		Oakland	Lake Merritt Channel	New separated crossing	Complete Lake Merritt to Bay Trail connection under I-880 and over railroad tracks to connect to Embarcadero Rd upgrades.	$$$$	MID
Ala-880-X25	Alameda	880	26.62		Oakland	66th Ave	Minor interchange improvements (signage and striping)- Class II	Provide near term bicycle striping improvements at 66th Ave and I-880 ramps. Longer term separated overcrossing planned.	$	TOP
Ala-880-X26	Alameda	880	24.74		Oakland	98th Ave	Minor interchange improvements (signage and striping)- Class II	Convert existing shoulder to bike lanes on 98th Ave thru I-880 interchange. Provide conflict zone markings.	$	MID
Ala-880-X27	Alameda	880	22.74		San Leandro	Marina Blvd	Minor interchange improvements (signage and striping)- Class II	Provide bike lanes, conflict zone markings, and signage on Marina Blvd thru I-880 interchange	$	MID
Ala-880-X28	Alameda	880	13.02		Union City	Alvarado-Niles Rd	Minor interchange improvements (signage and striping)- Class II	Provide bike lanes, conflict striping, and signage on Alvarado-Niles Rd thru I-880 interchange. Short term improvement paired with longer term ramp reconstruction.	$	MID
Ala-880-X29	Alameda	880	10.27		Fremont	Decoto Rd	Minor interchange improvements (signage and striping)- Class II	Provide bike lanes, conflict striping, and signage on Decoto Rd/Hwy 84 thru I-880 interchange. Short term improvement paired with long term proposed overcrossing.	$	TOP
Ala-880-X30	Alameda	880	6.94		Fremont	Thornton Ave	Minor interchange improvements (signage and striping)- Class II	Refresh bike lanes and provide conflict striping and signage on Thornton Ave thru I-880 interchange. Paired with long term ramp reconfiguration project.	$	TOP

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Ala-880-X31	Alameda	880	7.15		Fremont	Mowry Ave	Minor interchange improvements (signage and striping)- Class II	Provide bike lanes, conflict striping, and signage on Mowry Ave thru I-880 interchange. Paired with long term ramp reconfiguration project.	$	MID
Ala-880-X32	Alameda	880	6.2		Fremont	Stevenson Blvd	Minor interchange improvements (signage and striping)- Class II	Provide bike lanes, conflict striping and signage on Stevenson Blvd thru I-880 interchange. Paired with long term ramp reconfiguration.	$	LOW
Ala-880-X33	Alameda	880	2.31		Fremont	Warren Ave	Minor interchange improvements (signage and striping)- Class II	Provide bike lanes, conflict striping, and signage on Warren Ave thru I-880 interchange	$	MID
Ala-880-X34	Alameda	880	3.61		Fremont	Coyote Creek (Fremont Blvd)	New separated crossing	Provide separated bike/ped crossing of I-880 to support future East Bay Greenway extension to Fremont	$$$$	LOW
Ala-92-C01	Alameda	92	3.46	3.96	Hayward	Whitesell St	Corridor Improvement- Class I	Breakwater Avenue Bay Trail connection to Hwy 92 Bicycle/Pedestrian overpass bridge - Closes the last gap in the Bay Trail to the Hwy 92 Bicycle/Pedestrian overcrossing and removes the final barrier to crossing the Hwy 92 corridor.	$$	MID
Ala-92-X01	Alameda	92	5.15		Hayward	Industrial Blvd	Interchange reconstruction - ramps only- Class II	Explore signage and striping improvements through interchange consistent with 2017 Fremont Bicycle Master Plan Update	$$$$	TOP
Ala-980-X01	Alameda	980	0.69		Oakland	14th St	Minor interchange improvements (signage and striping)- Class IIB	Explore Class IV separated bikeway on 14th Street overpass	$	MID

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CC-123-C01	Contra Costa	123	1.73	1.73	El Cerrito	Central Ave - Potrero Ave	Corridor Improvement- Class IV	Provide Class IV separated bikeway on San Pablo Ave from Central Ave to Potrero Ave consistent with El Cerrito San Pablo Ave specific plan	$$	TOP
CC-123-C02	Contra Costa	123	1.7	2.2	El Cerrito	Potrero Ave - I-80	Corridor Improvement- Class II	Provide Class II bike lanes on San Pablo Ave and Cutting Blvd from Potrero Ave to I-80	$	MID
CC-123-X01	Contra Costa	123	0.28		El Cerrito	Central Ave	Intersection Improvement at controlled intersection	Improve intersection striping on Central and Fairmont across San Pablo	$	LOW
CC-160-C01	Contra Costa	160	0.39	0.39	Antioch	Bridgehead Rd - Sacramento County line	Corridor Improvement- Class II	Provide bike accommodation on Hwy 160 bridge	$	LOW
CC-242-X01	Contra Costa	242	1.47		Concord	Concord Ave	Interchange reconstruction - ramps only- Class II	Reconfigure and square up ramps from Concord Ave to Hwy 242, provide bike lanes thru interchange. Coordianate with proposed Concord Complete Streets Study	$$$$	TOP
CC-242-X02	Contra Costa	242	2.18		Concord	Grant St	Minor interchange improvements (signage and striping)- Class II	Provide bike lanes, conflict striping, and signage on Grant Ave thru Hwy 242 interchange. Coordinate with proposed Concord complete streets study.	$	TOP
CC-242-X03	Contra Costa	242	2.8		Concord	Olivera Rd	Interchange reconstruction - ramps only- Class II	Reconfigure and square up ramps from Olivera Rd to Hwy 242, provide bike lanes thru interchange	$$$$	TOP
CC-24-X01	Contra Costa	24	2.35		Orinda	Camino Pablo	New separated crossing	Provide separate crossing of Hwy 24 near Orinda BART station	$$$$	TOP
CC-4-C01	Contra Costa	4	16.86	16.86	Concord, Pittsburg	Walnut Creek - Willow Pass Rd	Corridor Improvement- Class I	Construct Class I shared use path along Hwy 4 from Walnut Creeek to Willow Pass Rd	$$$	LOW
CC-4-C02	Contra Costa	4	22.79	23.4	Pittsburg	Crestview Dr - Harbor St	Corridor Improvement- Class I	Provide improved bike/ped connections to Pittsburg Center eBART station. Proposed shared use path consistent with Railroad Ave Specific Plan.	$$	TOP
CC-4-C03	Contra Costa	4	38.04	38.04	Brentwood	Vasco Rd - Newport Dr	Corridor Improvement- Class II	Provide bike lanes on Hwy 4 in Brentwood	$$	LOW
CC-4-X01	Contra Costa	4	15.45	0		Port Chicago Hwy	Interchange reconstruction - ramps only- Class II	Reconfigure and square up ramps from Port Chicago Hwy on to Hwy 4	$$$$	MID
CC-4-X02	Contra Costa	4	20.12		Pittsburg	Bailey Rd	Minor interchange improvements (signage and striping)- Class I	Improve connections of existing trail through Bailey Rd interchange and to the Pittsburg BART station. Ideally remove slip ramps - most interchange ramps have been squared already.	$$	TOP

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CC-4-X03	Contra Costa	4	24.32		Pittsburg	Loveridge Rd	Minor interchange improvements (signage and striping)- Class IV	Wide open interchange area, potential for Class IV thru interchange area.	$$	TOP
CC-4-X04	Contra Costa	4	26.03		Antioch	Sommerville Rd	Minor interchange improvements (signage and striping)- Class I	Great, squared up interchange. Striping of bike lanes through interchange (and beyond) to connect to parallel bike routes	$$	TOP
CC-4-X05	Contra Costa	4	26.96		Antioch	Contra Loma Rd	Minor interchange improvements (signage and striping)- Class II	Minor ramp reconfiguration to eliminate slip lanes. Provide bike lanes through Contra Loma Blvd/L St	$	TOP
CC-4-X06	Contra Costa	4	27.82		Antioch	Lone Tree Way	Interchange reconstruction - ramps only- Class II	Remove slip lanes to square up interchange ramps. Provide bike accommodation through Lone Tree Way interchange.	$$$$	TOP
CC-4-X07	Contra Costa	4	28.97		Antioch	Hillcrest Ave	Minor interchange improvements (signage and striping)- Class II	Provide sidewalk level Class IV bikeway on Hillcrest Ave thru Hwy 4 interchange	$	TOP
CC-4-X08	Contra Costa	4	37.75		Brentwood	Marsh Creek Rd	New separated crossing	Provide new separated bike/ped overcrossing of Hwy 4 north of Marsh Creek Rd.	$$$$	LOW
CC-4-X09	Contra Costa	4	13.44		Concord	Walnut Creek	New separated crossing	Provide Iron Horse Trail connection under Hwy 4 bridge over Walnut Creek	$$$$	TOP
CC-4-X10	Contra Costa	4	33.51		Brentwood	Lone Tree Way	New separated crossing	Provide separated bike/ped overcrossing over Hwy 4 for a proposed trail (south of Lone Tree Way)	$$$$	LOW
CC-4-X11	Contra Costa	4	3.37			0 Christie Rd	New separated crossing	Provide separated crossing of Hwy 4 east of Christie Rd	$$$$	LOW
CC-4-X12	Contra Costa	4	14.45		Concord	Northwood Cir	New separated crossing	Provide separated crossing of Hwy 4 near Hwy 242 interchange	$$$$	LOW
CC-580-C01	Contra Costa	580	5.1	6.4	Richmond	Bridge touchdown - Castro St	Corridor Improvement- Class I	Construct separated Class I bicycle and pedestrian path along I-580 Corridor between Richmond-San Rafael Bridge and Castro Street, Richmond. Access for bicyclists and pedestrians to reach the Richmond-San Rafael Bridge and Point Molate.	$$$$	TOP
CC-580-C02	Contra Costa	580	4.8	5.12	Point Richmond	Garrard Blvd - Castro St	Corridor Improvement- Class I	Provide Class I path along side elevated I-580 (over railroad tracks) from Garrard Blvd to Castro St.	$$	TOP
CC-580-X01	Contra Costa	580	2.82		Richmond	Marina Bay Pkwy	Interchange reconstruction - ramps only- Class I	Reconstruction ramps at Marina Bay Pkwy to provide Class I or Class IV through interchange	$$$$	TOP
CC-580-X02	Contra Costa	580	3.72		Richmond	Cutting Blvd	Interchange reconstruction - ramps only- Class IIB	Reconfigure ramps at Cutting Blvd and S Harbor Way to remove free flowing on-ramps. Provide green striping and buffered bike lanes if possible.	$$$$	TOP

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CC-580-X03	Contra Costa	580	0.21		Richmond	Central Ave	Minor interchange improvements (signage and striping)- Class IIB	Provide buffered bike lanes through Central Ave interchange, including green striping and signage.	$	TOP
CC-680-C01	Contra Costa	680	24.47	24.69	Martinez	Mococo Rd	Corridor Improvement- Class I	Not on Caltrans ROW but makes a connection to Bay Trail	$$	TOP
CC-680-X01	Contra Costa	680	2.88		San Ramon	Bollinger Canyon Rd	Interchange reconstruction - ramps only- Class IIB	Reconstruct and square up ramp ends from Bollinger Canyon Rd on to I-680, provide bike lanes and conflict striping thru interchange.	$$$$	MID
CC-680-X02	Contra Costa	680	6.76		Danville	Sycamore Valley Rd	Minor interchange improvements (signage and striping)- Class II	Provide bike lanes, conflict striping and signage on Sycamore Valley Rd thru I-680 interchange	$	LOW
CC-680-X03	Contra Costa	680	17.7		Concord	Monument Blvd	Minor interchange improvements (signage and striping)- Class II	Provide bike lanes, conflict striping and signage on Monument Blvd thru I-680 interchange.	$	TOP
CC-680-X04	Contra Costa	680	19.04		Concord	Willow Pass Rd	Interchange reconstruction - ramps only- Class IIB	Reconstruct Willow Pass Rd and I-680 ramps to create a Class I facility thru the interchange area. Coordinate with Concord Willow Pass / Cowell Rd Complete Streets Study	$$$$	TOP
CC-680-X05	Contra Costa	680	19.87		Concord	Concord Ave	Minor interchange improvements (signage and striping)- Class II	Provide bike lanes, conflict striping, and signage on Concord Ave thru I-680 interchange. Coordianate with proposed Concord complete streets study	$	TOP
CC-80-X01	Contra Costa	80	2.19		Richmond, El Cerrito	Cutting Blvd	Minor interchange improvements (signage and striping)- Class I	Provide Class I or IV facility on Cutting Blvd thru I-80 interchange, using available space under existing elevated structure.	$$	TOP
CC-80-X02	Contra Costa	80	1.68		El Cerrito, Richmond	Potrero Ave	Minor interchange improvements (signage and striping)- Class II	Provide bike lanes, conflict striping and signage on Potrero Ave thru I-80 interchange. Consider using space under I-80 for a Class I path similar to Powell St in Emeryville.	$	TOP
CC-80-X03	Contra Costa	80	1		Richmond	Carlson Blvd	Minor interchange improvements (signage and striping)- Class II	Reduce curb radii and remove slip ramp from I-80 NB to Carlson Blvd EB	$	TOP
CC-80-X04	Contra Costa	80	0.22		Richmond	Central Ave	Minor interchange improvements (signage and striping)- Class I	Provide Class I path under I-80 freeway at Central Ave, using space adjacent to roadway similar to Powell St in Emeryville.	$$	TOP
CC-80-X05	Contra Costa	80	13.66		Crockett	Carquniez Bridge Trail	New separated crossing	Construct dedicated bicycle and pedestrian facilities to create eastern and western approaches to the existing bicycle and pedestrian path on the Zampa Bridge.	$$$$	LOW
CC-80-X06	Contra Costa	80	2.84		Richmond	Barrett Ave	Minor interchange improvements (signage and striping)- Class IV	Provide Class IV bikeway through interchange and clear markings for ramp crossings.	$$	TOP

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CC-80-X07	Contra Costa	80	2.63		Richmond	MacDonald Rd	Interchange reconstruction - ramps only- Class I	Reconstruct offramp from I-80 to Macdonald road, provide Class I through interchange to connect to Richmond Greenway	$$$$	MID
CC-80-X08	Contra Costa	80	3.4		Richmond	Solano Ave	Minor interchange improvements (signage and striping)- Class II	Provide bike lanes through Solano Ave interchange.	$	TOP
CC-80-X09	Contra Costa	80	3.79		Richmond	McBryde Ave	Minor interchange improvements (signage and striping)- Class II	Provide bike lanes and green striping through McBryde Avenue	$	TOP
CC-80-X10	Contra Costa	80	5.97		Richmond	Hilltop Dr	Interchange reconstruction - ramps only- Class IIB	Provide Class II buffered bike lanes through Hilltop Dr interchange	$$$$	TOP
CCMa-580-C01	Contra Costa, Marin	580	2.48	6.4	Richmond, San Rafael	Western Ave - Main St	Corridor Improvement- Class I	Make Class IV facility on Richmond-San Rafael Bridge permanent	$$$	TOP

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Mar-101,131-X01	Marin	101,131	5.64		Strawberry, Alto	US 101/Hwy 131 interchange	Interchange reconstruction - full reconstruction- Class IIB	Provide Class I or IV bikeway through US 101/Hwy 131 interchange as part of reconstructing the interchange eliminate high speed ramp entries.	$$$$	TOP
Mar-101-C01	Marin	101	4.49	4.87	Strawberry	Seminary Dr - US 101	Corridor Improvement- Class II	Proposed Class II bike lanes on Redwood Highway Frontage Road east side of freeway from the Marin County Draft Bicycle and Pedestrian Master Plan.	$	MID
Mar-101-C02	Marin	101	8	8.2	Larkspur, Corte Madera	Wornum Dr	Corridor Improvement- Class I	Widen existing Class I path on south side of Wornum Drive and provide vertical barrier between bicycle space and moving vehicles	$$	LOW
Mar-101-X01	Marin	101	3.16		Marin City	Donahue St	Minor interchange improvements (signage and striping)- Class II	Provide bike lanes on Donahue Street to support bicyclists crossing under US 101, and to provide access to the Mill Valley Sausalito Path east of Bridgeway	$	TOP
Mar-101-X02	Marin	101	0.21	0		Alexander Rd - Vista Pt Trail	Minor interchange improvements (signage and striping)- Class II	Provide Class I path along US 101 from Vista Point to Alexander Ave in conjunction with planned interchange crossing improvements, consistent with FHWA Alexander Avenue Planning Study.	$	TOP
Mar-101-X03	Marin	101	6.38		Corte Madera	Casa Buena Dr	New separated crossing	TAM proposed crossing to directly connect residential neighborhoods, and avoid traffic at Tamalpais Interchange and Wornum-Redwood Highway.	$$$$	TOP
Mar-101-X04	Marin	101	7.33		Corte Madera	Tamalpais Dr	Interchange reconstruction - ramps only- Class I	Reconfigure intersection to eliminate high-speed ramp entries. Provide Class I on north side of Tamalpais Drive to improve access across the highway.	$$$$	TOP
Mar-101-X05	Marin	101	8.66		Larkspur	Sir Francis Drake Blvd E	Minor interchange improvements (signage and striping)- Class I	Class I path passes under Redwood Highway south of Sir Francis Drake Blvd, and Cal Park Hill Pathway provides a north-south connection on the east side of 101, but no north/south crossing is currently provided on the west side	$$	LOW
Mar-101-X06	Marin	101	10.96		San Rafael	4th St	Minor interchange improvements (signage and striping)- Class IV	Explore Class IV facilities on 4th Street with improved intersections on Heatherton (Caltrans jurisdiction) and Irwin (City of San Rafael jurisdiction).	$$	MID
Mar-101-X07	Marin	101	12.65		San Rafael	N San Pedro Rd	Interchange reconstruction - ramps only- Class II	Minor reconstructuction of ramps to eliminate freeflow auto movements on to US 101 ramps. Provide Class II bike lanes on San Pedro Rd thru interchange.	$$$$	TOP

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Mar-101-X08	Marin	101	14.68		San Rafael	Lucas Valley Rd	Minor interchange improvements (signage and striping)- Class II	Explore reconfiguring ramps to eliniate high speed entry and exit. TAM BPAC emphasizes challenge of getting from Park & Ride to west side of freeway. Currently has poor lighting and poor pavement conditions.	$	TOP
Mar-101-X09	Marin	101	17.99		Novato	Ignacio Blvd	Minor interchange improvements (signage and striping)- Class IIB	Improve bicyclist comfort on Ignacio Boulevard across 101 to facilitate access to planned Class I in rail corridor on the east side. TAM BPAC notes this is high need for school children.	$	TOP
Mar-101-X10	Marin	101	20.19		Novato	Rowland Blvd	Minor interchange improvements (signage and striping)- Class IIB	TAM BPAC proposed separated bikeway on Rowland Boulevard	$	TOP
Mar-101-X11	Marin	101	0			Shoreline Hwy	Minor interchange improvements (signage and striping)- Class IIB	Currently an interchange with high volume, high speeds, and collisions. TAM BPAC proposes some minor ramp reconfiguration and signalization.	$	MID
Mar-101-X12	Marin	101	19.08		Novato	Redwood Blvd	New separated crossing	Add separated crossing of US 101/Hwy 37 interchange, Novato Blvd Bike Path across US 101. No comfortable crossing between Ignacio Blvd and Rowland Blvd in Novato (2 miles)	$$$$	LOW
Mar-131-C01	Marin	131	0.89	0.89	Strawberry, Tiburon	Strawberry Dr - Greenwood Cove Rd	Corridor Improvement- Class I	Proposed Class I Path on the west side of Tiburon Boulevard between Greenwood Cove Road and Strawberry Drive.	$$	TOP
Mar-131-C02	Marin	131	0	4.39	Tiburon	US 101 - Main St	Corridor Improvement- Class IV	Provide Class IV along Hwy 131 from US 101 to TIburon	$$$	TOP
Mar-1-C01	Marin	1	28.86	28.86	Point Reyes Station	Dillon Beach Rd - Point Reyes Petaluma Rd	Corridor Improvement- Class I	Proposed bicycle facilities on Highway 1 either Class III or Class II as proposed in the Draft Marin County Bicycle and Pedestrian Plan (2017). Use the "widen where feasible approach" to provide additional shoulder area along where feasible as part of road repaving projects.	$$$$	MID
Mar-1-C02	Marin	1	25.84	28.77	Point Reyes Station	Sir Francis Drake Blvd - Point Reyes Petaluma Rd	Corridor Improvement- Class I	Provide a combination of Class I path and Class II bike lanes on Hwy 1 from Bear Valley Rd to Point Reyes-Petaluma Rd.	$$$	LOW
Mar-1-C03	Marin	1	3.21	25.84	Unincorporated	US 101 - Sir Francis Drake Blvd	Corridor Improvement- Class I	Proposed bicycle facilities on Highway 1 either Class III or Class II as proposed in the Draft Marin County Bicycle and Pedestrian Plan (2017). Use the "widen where feasible approach" to provide additional shoulder area along where feasible as part of road repaving projects.	$$$$	MID

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Mar-1-C04	Marin	1	0.61	0.61	Tamalpais-Homestead Valley	Maple St - Almonte Blvd	Corridor Improvement- Class I	Proposed bicycle facilities on Highway 1 either Class III or Class II as proposed in the Draft Marin County Bicycle and Pedestrian Plan (2017). Use the "widen where feasible approach" to provide additional shoulder area along where feasible as part of road repaving projects.	$$	TOP
Mar-1-C05	Marin	1	0	3.21	Almonte, Tamalpais Valley	Hwy 1 - Panormaic Way	Corridor Improvement- Shoulder improvements	Proposed bicycle facilities on Highway 1 either Class III or Class II as proposed in the Draft Marin County Bicycle and Pedestrian Plan (2017). Use the "widen where feasible approach" to provide additional shoulder area along where feasible as part of road repaving projects.	$	LOW
Mar-1-X01	Marin	1	5.68		Muir Beach	Franks Valley Rd	Intersection Improvement at uncontrolled intersection	Provide enhanced intersection to address challenging sight lines for bicyclists exiting Franks Valley Road.	$$	LOW
Mar-1-X02	Marin	1	5.46		Muir Beach	Pacific Way	Intersection Improvement at uncontrolled intersection	Provide enhanced crossig of Highway 1 including signage, flashing beacon, or other improvement.	$	LOW
Mar-1-X03	Marin	1	3.33		Tamalpais-Homestead Valley	Erica Rd	Intersection Improvement at uncontrolled intersection	Consider "squaring up" the intersection with Panoramic Highway to improve sight lines and access for bicyclists	$	LOW
Mar-1-X04	Marin	1	3.59			Erica Rd	Intersection Improvement at uncontrolled intersection	Recommended by Bay Area Ridge Trail. Connects hiking path.	$	MID
Mar-580-C01	Marin	580	0	2.48	San Rafael	2nd St - Main St	Corridor Improvement- Class IV	Planned Class IV bikeway on Francisco Blvd E parallel to I-580 as proposed in the Draft Marin County Bicycle and Pedestrian Plan (2017)	$$$	MID
Mar-580-X01	Marin	580	4.41		San Rafael	Bellam Blvd	Interchange reconstruction - full reconstruction- Class I	Minor reconfiguration of highway ramps to square up interchange.	$$$$	TOP
Mar-580-X02	Marin	580	2.6		San Rafael	Main St - I-580 Bridge landing	Minor interchange improvements (signage and striping)- Class IV	Provide separated facility along EB I-580 on-ramp and Main Street off-ramp to allow access to Richmond-San Rafael Bridge from Larkspur. Square up and stop control off-ramp exit to Main St.	$$	TOP
MaSon-101-C01	Sonoma,Marin	101	3.25	27.14		Petaluma Blvd S - S San Antonio Rd	Corridor Improvement- Class I	Marin Sonoma Narrows Trail proposed in Sonoma County Bicycle and Pedestrian Plan (2010)	$$$	MID
MaSon-1-C01	Marin,Sonoma	1	0.21	0.21		Valley Ford Rd - Dillon Beach Rd	Corridor Improvement- Class I	Proposed bicycle facilities on Highway 1 either Class III or Class II as proposed in the Draft Marin County Bicycle and Pedestrian Plan (2017). Use the "widen where feasible approach" that provide additional shoulder area along where feasible as part of road repaving projects.	$$$	LOW

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Nap-121,221-X01	Napa	121,221	6.01		Napa	Imola Ave/Hwy 121	Intersection Improvement at controlled intersection	Remove slip lanes, improve bicycle markings, and provide access to planned path on SE corner of intersection.	$	MID
Nap-121-C01	Napa	121	9.54	9.54	Napa	Soscol Ave - Trancas St	Corridor Improvement- Class II	Complete Class II bike lanes on Hwy 121 from Soscol Ave to Trancas St. Widen narrow bike lanes where possible.	$	LOW
Nap-121-C02	Napa	121	22.08	22.08	Moskowite Corner, Silverado Resort, Vichy Springs	Hwy 128 - Atlas Peak Rd	Corridor Improvement- Shoulder improvements	Improve shoulder on Hwy 121 from Vichy Springs to Hwy 128	$$	LOW
Nap-121-C03	Napa	121	2.19	2.19	0	Duhig Rd - Old Sonoma Rd	Corridor Improvement- Class IV	Class I or IV on Hwy 12 from Duhig Rd to Old Sonoma Rd with intersection improvements to aid bicyclists traveling through this corridor	$$	TOP
Nap-121-X01	Napa	121	4.73		Napa	Minahen St	Intersection Improvement at uncontrolled intersection	Provide flashing beacon or other crossing improvement on Hwy 121 at Minahen St	$	LOW
Nap-121-X02	Napa	121	4.28		Napa	Stanly Ln	Intersection Improvement at controlled intersection	Improve crossing of Hwy 12 at Stanley Ln, potential square intersection to reduce crossing lengths and provide clearer space for bicyclists and pedestrians.	$	LOW
Nap-121-X03	Napa	121	7.45		Napa	Silverado Trail/3rd/East/Coombsville	Intersection Improvement at controlled intersection	Improve 5-way intersection. Consider a roundabout, Class IV or other similar improvement that supports bicycling. .	$	TOP
Nap-128-C01	Napa	128	0.04	0.04		N Fork Bennett Rd - Napa/ Sonoma County border	Corridor Improvement- Class II	Provide Class II bike lanes on Hwy 128 from Bennett Ln to Sonoma County border	$	LOW
Nap-128-C02	Napa	128	23.66	23.9	Moskowite Corner	Steele Canyon Rd	Corridor Improvement- Shoulder improvements	Provide signage and other improvements at junction of Hwy 128 and Hwy 121	$	LOW
Nap-128-C03	Napa	128	23.73	32.05	Moskowite Corner	Hwy 128 - Lake Berryessa	Corridor Improvement- Shoulder improvements	Provide shoulder improvements on Hwy 128 from Hwy 128 to Lake Berryessa	$$	LOW
Nap-128-C04	Napa	128	11.41	18.44		Chiles Pope Valley Rd - Monticello Rd	Corridor Improvement- Shoulder improvements	Provide shoulder treatments or similar improvements on Hwy 128 from Chiles Pope Valle Rd to Monticello Rd (Hwy 121)	$$	LOW
Nap-128-C05	Napa	128	4.56	7.38	Rutherford	Silveradro Trl S - Hwy 29/St Helena Hwy	Corridor Improvement- Class II	Class II bicycle lanes on SR 128	$	LOW

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Num	County	Route	BPM	EPM	City	Location	Improvement Type	Description	Cost	Tier
Nap-128-C06	Napa	128	7.38	7.51	St Helena	Sage Canyon Rd - Conn Creek Rd	Corridor Improvement- Class IV	When Silverado Trail bridge over Conn Creek is replaced, add Class IV or Class I facilities to better accommodate bicyclists turning from Safe Creek Road on to Silverado Trail and then onto Conn Creek Rd. Long term improvements for Project 255.	$$	TOP
Nap-128-C07	Napa	128	7.51	7.51	St Helena	Silverado Trail - Chiles Pope Valley Rd	Corridor Improvement- Class II	Provide Class II bike lanes on Hwy 128 from Silverado Trail to Chiles Pope Valley Rd. May require some Class III segments and signage.	$$	LOW
Nap-128-C08	Napa	128	0.01	4.55	Calistoga	Lincoln Ave - Napa/Sonoma county line	Corridor Improvement- Class I	Construct extension of the Vine Trail from Calistoga to Sonoma County line	$$$	LOW
Nap-128-X01	Napa	128	11.26			Chiles Pope Valley Rd	Intersection Improvement at uncontrolled intersection	Class III bicycle route on SR 128	$	LOW
Nap-128-X02	Napa	128	7.38			Silverado Trl S	Intersection Improvement at uncontrolled intersection	Improve crossing of Hwy 128 where it turns from Conn Creek Rd on to Silverado Trail, including evaluating potential for a two way Class I or Class IV facility on the north side.	$	LOW
Nap-221-C01	Napa	221	0	2.68	Napa	Imola Ave - Hwy 12	Corridor Improvement- Class II	Provide bike lanes on Hwy 221. Consider edgeline rumble strips to increase awareness of bicycle travel in the corridor.	$	LOW
Nap-221-X01	Napa	221	1.96			Streblow Dr	Intersection Improvement at controlled intersection	Mark bicycle crossings, improve access to River to Ridge trail, and remove slip lanes from Streblow Dr on to Hwy 221.	$	MID
Nap-221-X02	Napa	221	2.54		Napa	Magnolia Dr	Intersection Improvement at controlled intersection	Provide intersection markings and bicycle turn boxes on Hwy 221 at Magnolia Dr	$	MID
Nap-29-C01	Napa	29	0.27	40.63		Tubbs Ln - Napa/Lake County line	Corridor Improvement- Class II	Provide bike lanes on Hwy 29 from Tubbs Ln to Lake County border	$$	LOW
Nap-29-C02	Napa	29	38.97	40.64		Silverado Trl - Tubbs Ln	Corridor Improvement- Class II	Class II bicycle lanes on SR 29	$	LOW
Nap-29-C03	Napa	29	37.93	38.97	Calistoga	Foothill Blvd/Hwy 29 - Silverado Trail	Corridor Improvement- Class II	Class II bicycle lanes on SR 29	$	LOW
Nap-29-C04	Napa	29	37.91	37.93		Dunaweal Ln - Bennett Rd	Corridor Improvement- Class II	Class II bicycle lanes on SR 128	$$	LOW
Nap-29-C05	Napa	29	6.64	7.38	Napa	Stanly Ln - Vista Point Dr	Corridor Improvement- Class I	Planned Class I path along Napa River and connecting to Vista Point Drive on either side, including crossing on the Butler bridge.	$$	MID

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Num	County	Route	BPM	EPM	City	Location	Improvement Type	Description	Cost	Tier
Nap-29-C06	Napa	29	0.01	0.01		Soscol Ferry Rd - Airport Blvd	Corridor Improvement- Class II	Provide Bike lanes on Hwy 29 from Airport Blvd to Soscol Ferry Rd	$	LOW
Nap-29-C07	Napa	29	0.01	0.01	American Canyon	American Canyon Rd - Jameson Canyon Rd	Corridor Improvement- Class I	Provide Class I on both sides of Hwy 29 through American Canyon.	$$$	TOP
Nap-29-X01	Napa	29	32.61			Bale Grist Mill	Intersection Improvement at uncontrolled intersection	Class II bicycle lanes on SR 128	$	LOW
Nap-29-X02	Napa	29	29.07		St. Helena	Mitchell Dr/Pope St	Intersection Improvement at controlled intersection	Provide bike boxes, green markings, and bike lanes thru offset intersection of Mitchell Dr/Pope St and Hwy 29	$	LOW
Nap-29-X03	Napa	29	15.59			Oak Knoll Ave	Intersection Improvement at controlled intersection	Provide signage, bike boxes and related improvements to better connect Oak Knoll Ave to the Vine Trail across Hwy 29	$	MID
Nap-29-X04	Napa	29	14.58		Napa	Salvador Ave	Intersection Improvement at controlled intersection	Class I path on west side of SR 29	$	LOW
Nap-29-X05	Napa	29	14.3		Napa	Wine Country Ave	Intersection Improvement at controlled intersection	Class I path along west side of SR 29	$$	LOW
Nap-29-X06	Napa	29	13.85		Napa	Trower Rd	Intersection Improvement at controlled intersection	Class I path on west side of SR 29	$	MID
Nap-29-X07	Napa	29	13.06		Napa	Trancas Rd/Redwood Rd	Minor interchange improvements (signage and striping)- Class II	Provide bike lanes on Trancas Rd/Redwood Rd interchange with Hwy 29	$	LOW
Nap-29-X08	Napa	29	11.54		Napa	1st St	Minor interchange improvements (signage and striping)- Class II	Provide bike lanes on 1st Street interchange with Hwy 29	$	TOP
Nap-29-X09	Napa	29	10.69		Napa	Old Sonoma Rd	Minor interchange improvements (signage and striping)- Class II	Improve striping on Old Sonoma Rd interchnage with Hwy 29	$	TOP
Nap-29-X10	Napa	29	34.28		Calistoga	Larkmead Ln	Intersection Improvement at uncontrolled intersection	Improve crossing of Hwy 29 using flashing beacons or similar to connect to Bothe Napa Valley State Park.	$	LOW
Nap-29-X11	Napa	29	10.39		Napa	Imola Ave W	Minor interchange improvements (signage and striping)- Class I	Provide striping and signage improvements on Imola Ave (Hwy 121) at Hwy 29	$$	TOP
Nap-29-X12	Napa	29	1.61		American Canyon	Rio Del Mar	Intersection Improvement at controlled intersection	Class II bicycle lanes on SR 29. Implement signal/intersection improvements to support bicyclist left turns	$	MID

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NaSol-12-C01	Napa,Solano	12	0	0		Hwy 29 - Napa/Solano County border	Corridor Improvement- Class I	Provide Class I path along Hwy 12 from jct with Hwy 29 to Solano County border (near Creston)	$$$	LOW

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Num	County	Route	BPM	EPM	City	Location	Improvement Type	Description	Cost	Tier
SC-101-C01	Santa Clara	101	35.27	35.52	San Jose	E San Antonio St	Corridor Improvement- Class IIB	Add continuous bikeways on streets under/over freeway. San Antonio Road is Cross County Bicycle Corridor and interchange is an Across Barrier Connection.	$	TOP
SC-101-C02	Santa Clara	101	6.57	10.28	Gilroy	Leavesley Rd - E Sixth St	Corridor Improvement- Class I	Install Class I path next to Highway 101 via Santa Clara County Water District Storm Channel	$$	TOP
SC-101-X01	Santa Clara	101	40.68		San Jose	De la Cruz Blvd	Interchange reconstruction - full reconstruction- Class IV	While existing conditions allow bicyclists to avoid the intersection via the Guadeloupe Trail, intersection/interchange improvements here can provide an alternative route and improved network efficiencies.	$$$$	LOW
SC-101-X02	Santa Clara	101	37.72		San Jose	Old Oakland Rd	Interchange reconstruction - ramps only- Class IV	Add continuous bikeways through interchange on Old Oakland Road. Square up ramps.	$$$$	MID
SC-101-X03	Santa Clara	101	28.63		San Jose	Blossom Hill Rd	Interchange reconstruction - ramps only- Class IV	Add continuous bikeways through interchange on Blossom Hill Boulevard. Square up ramps.	$$$$	TOP
SC-101-X04	Santa Clara	101	36.93		San Jose	Taylor St	Interchange reconstruction - full reconstruction- Class IV	Add new interchange at US 101/Maybury Road in San Jose to address regional access. Interchange should provide exceptional bicycle access. Maybury Road is one of the few crossings of 101 that do not travel through an interchange.	$$$$	MID
SC-101-X05	Santa Clara	101	17.84		Morgan Hill	Cochrane Rd	Interchange reconstruction - ramps only- Class IIB	Buffered bike lanes on Cochrane Rd and Malaguerra Ave from Monterey Rd to Coyote Creek Trailhead Timeframe: Highway 101 improvements 0-5 years; entire corridor 5-10 years	$$$$	LOW
SC-101-X06	Santa Clara	101	50.66		Palo Alto	Adobe Creek	New separated crossing	The Highway 101 Pedestrian Overpass Project at Adobe Creek will replace the existing seasonal Benjamin Lefkowitz Underpass that is available only half the year (on average) due to seasonal flooding.	$$$$	TOP
SC-101-X07	Santa Clara	101	33.02		San Jose	Tully Rd	Minor interchange improvements (signage and striping)- Class IV	Replace free-merging on/off ramps with stop-controlled ramps to improve bike and ped accommodation and safety. Add continuous sidewalks through interchange. Add continuous Class IV or I bikeways through interchange. Tully is Cross County Bicycle Corridor.	$$	TOP

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SC-101-X08	Santa Clara	101	34.54		San Jose	Story Rd	Interchange reconstruction - full reconstruction- Class IV	Replace free-merging on/off ramps with stop-controlled ramps to improve bike and ped accommodation and safety. Add continuous sidewalks through interchange. Add continuous Class IV or I bikeways through interchange. Story is a Cross County Bicycle Corridor and interchange is an Across Barrier Connection.	$$$$	TOP
SC-101-X09	Santa Clara	101	35.75		San Jose	Alum Rock Ave	Minor interchange improvements (signage and striping)- Class IV	Replace free-merging on/off ramps with stop-controlled ramps to improve bike and ped accommodation and safety. Add continuous sidewalks through interchange. Add continuous Class IV or I bikeways through interchange.	$$	MID
SC-101-X10	Santa Clara	101	36.15		San Jose	Mckee Rd	Minor interchange improvements (signage and striping)- Class IV	Replace free-merging on/off ramps with stop-controlled ramps to improve bike and ped accommodation and safety. Add continuous sidewalks through interchange. Add continuous Class IV or I bikeways through interchange. McKee is a Cross County Bicycle Corridor and interchange is an Across Barrier Connection.	$$	TOP
SC-101-X11	Santa Clara	101	39.42		San Jose	Airport Pkwy	Minor interchange improvements (signage and striping)- Class IV	Replace free-merging on/off ramps with stop-controlled ramps to improve bike and ped accommodation and safety. Add continuous sidewalks through interchange. Add continuous Class IV or I bikeways through interchange. Brokaw is Cross County Bicycle Corridor and interchange with 101 is Across Barrier Connection.	$$	MID
SC-101-X12	Santa Clara	101	37.41		San Jose	Hedding	Minor interchange improvements (signage and striping)- Class IIB	Add continuous bikeways on streets under/over freeway. Hedding is Cross County Bicycle Corridor.	$	TOP
SC-101-X13	Santa Clara	101	6.57		Gilroy	Gilman Rd	New separated crossing		$$$$	MID
SC-130-C01	Santa Clara	130	2.31	3.89	San Jose	White St - Mt Hamilton Rd	Corridor Improvement- Class I	Class I, shared frontage road marked for bikes, and some Class II buffered segments along Alum Rock Ave from White Rd to N Hamilton Ave	$$$	TOP
SC-152-C01	Santa Clara	152	7.91	9.43	Gilroy	Monterey Rd - Santa Teresa Blvd	Corridor Improvement- Class II	Provide Class II bike lanes on 1st St (Hwy 152) from Monterey Rd to Santa Teresa Blvd	$	LOW

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SC-17-X01	Santa Clara	17	10.46		Campbell	San Tomas Expwy	Interchange reconstruction - full reconstruction- Class IV	SR 17/San Tomas Expressway Improvements in Campbell to address mainline congestion and local circulation. Bicycle improvements are needed through the interchange. San Tomas Expressway is a Cross County Bicycle Corridor and the interchange is an Across Barrier Connection.	$$$$	MID
SC-17-X02	Santa Clara	17	12.29		San Jose, Campbell	Hamilton Ave	Interchange reconstruction - ramps only- Class IV	SR 17 SB/Hamilton Avenue Off-Ramp Widening Improvements in Campbell to address mainline congesiton and local circulation. San Jose comments: (1) Replace free-merging on/off ramps with stop-controlled ramps to improve bike and ped accommodation and safety; (2) add continuous sidewalks through interchange; (3) add continuous Class IV or I bikeways through interchange. San Jose request, but in City of Campbell	$$$$	MID
SC-237-X01	Santa Clara	237	0.01		Mountain View	Mountain View Alviso Rd	Intersection Improvement at controlled intersection	SR 85/SR237 Area Improvements in Mountain View to address mainline congestion and regional connectivity through the SR 85/SR 237 connector, SR 85/El Camino Real interchange and the SR 237/El Camino/Grant Road interchange. Improvements are needed at SR 85/ECR to facilitate bicycle travel. El Camino Real is Cross County Bicycle Corridor and interchange with 85 is an Across Barrier Connection. Grant Road is a Cross County Bicycle Corridor and SR 237/Grant/ECR is an Across Barrier Connection.	$	LOW
SC-237-X02	Santa Clara	237	2.99		Sunnyvale	Mountain View Alviso Rd	Interchange reconstruction - full reconstruction- Class IV	SR 237/US 101 Mathilda Avenue Area improvements in Sunnyvale to address local roadway congestion. Improvements are needed at both interchanges to facilitate bicycle travel. Moffet Park Drive bicycle access across 101 must be maintained or improved. Moffet Park Drive is Cross County Bicycle Corridor. 237/Mathilda and 101/Mathilda are Across Barrier Connections. VTA is developing final designs as of June 2017.	$$$$	TOP

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SC-237-X03	Santa Clara	237	5.85		Santa Clara	Great America Pkwy	Minor interchange improvements (signage and striping)- Class IV	SR 237 Corridor Improvements in the cities of San Jose, Santa Clara, and Milpitas to address mainline congestion and regional connectivity by additon of SR 237 westbound/eastbound ausiliary lanes between Zanker Road and North First Street, improvements at the SR 237 / Great America Parkway westbound off-ramp, and replacement/widening of the Calaveras Boulevard structures over the UPRR tracks.	$$	MID
SC-280-C01	Santa Clara	280	7.95	10.48	Sunnyvale, Cupertino	Mary Ave - Calabazas Creek	Corridor Improvement- Class I	City of Cupertino proposed I-280 Channel Trail (Junipero Serra Trail) from Mary Ave Bridge to Calabazas Creek	$$$	TOP
SC-280-X01	Santa Clara	280	5.94		San Jose	Saratoga Ave	Minor interchange improvements (signage and striping)- Class IV	Explore squaring up I-680 ramps on Saratoga Avenue and providing continuous Class IV or Class I bikeways through the interchange	$$	TOP
SC-280-X02	Santa Clara	280	18.4		Los Altos Hills	Page Mill Rd	Minor interchange improvements (signage and striping)- Class I	Short term interchange improvements can include signage and striping for active modes and in the long term, new Class I paths and widening/extension of existing paths and sidewalks.	$$	TOP
SC-280-X03	Santa Clara	280	6.72		San Jose	John Mise Ct	New separated crossing	New POC over 280 between Lawrence Expressway and Saratoga Avenue	$$$$	MID
SC-280-X04	Santa Clara	280	8.4		Cupertino	N Wolfe Rd	Minor interchange improvements (signage and striping)- Class IV	I-280/Wolfe Road Interchange Improvements in Cupertino to address mainline congestion and improve local traffic circulation. Improvements are needed through interchange to provide low-stress access for bicyclists.	$$	MID
SC-280-X05	Santa Clara	280	5.95		San Jose	Winchester Blvd	Minor interchange improvements (signage and striping)- Class IV	I-280/Winchester Bouelvard Area Improvements in Santa Clara and San Jose to address regional connectivity and local circulation. Improvements are needed through interchange to provide access for bicyclists. Winchester is a Cross County Bicycle Corridor.	$$	MID
SC-280-X06	Santa Clara	280	36.54		San Jose	Las Plumas Rd	New separated crossing	Class I Bikeway Pedestrian/Bicycle Bridge to replace railway bridge structure Project alignment is a future acquisition target. Acquisition now underway for parcels from William Street to Whitton Avenue.	$$$$	TOP
SC-280-X07	Santa Clara	280	2.86		San Jose	Bird Ave	Minor interchange improvements (signage and striping)- Class I	Add Class II bike lanes and pedestrian facilities, signing, and striping.	$$	MID

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SC-280-X08	Santa Clara	280	0.48		San Jose	McLaughlin Ave	Minor interchange improvements (signage and striping)- Class IV	Replace free-merging on/off ramps with stop-controlled ramps to improve bike and ped accommodation and safety. Add continuous sidewalks through interchange. Add continuous Class IV or I bikeways through interchange.	$$	TOP
SC-280-X09	Santa Clara	280	1.23		San Jose	11th St	Interchange reconstruction - ramps only- Class IV	Replace free-merging on/off ramps with stop-controlled ramps to improve bike and ped accommodation and safety. Add continuous sidewalks through interchange. Add continuous Class IV or I bikeways through interchange.	$$$$	TOP
SC-280-X10	Santa Clara	280	2.23		San Jose	Almaden Blvd	Minor interchange improvements (signage and striping)- Class IV	Replace free-merging on/off ramps with stop-controlled ramps to improve bike and ped accommodation and safety. Add continuous sidewalks through interchange. Add continuous Class IV or I bikeways through interchange.	$$	MID
SC-280-X11	Santa Clara	280	0.01		San Jose	I-880/I-280 interchange	Interchange reconstruction - full reconstruction- Class I	Improve bike/ped accommodation at connection of city street and crossing (e.g. provide safe and convenient bike/ped crossing of city street to reach POC, etc.)	$$$$	MID
SC-280-X12	Santa Clara	280	1.48		San Jose	10th St	Minor interchange improvements (signage and striping)- Class II	Add continuous bikeways on streets under/over freeway.	$	TOP
SC-280-X13	Santa Clara	280	11.08		Cupertino	Madera Dr	New separated crossing	Create new separated crossing of I-280 to support eventual extension of the Stevens Creek Trail. Incorporate bike/ped overcrossing in upcoming I-280/Hwy 85 interchange reconstruction.	$$$$	MID
SC-35,-X01	Santa Clara	35,	14.1	0		Hwy 9/Hwy 35 intersection	Intersection Improvement at controlled intersection	Explore intersection imrprovements such as removing slip lanes.	$	MID
SC-680-X01	Santa Clara	680	1.73		San Jose	Alum Rock Ave	Interchange reconstruction - ramps only- Class IV	Consistent with VTA's I-680 Corridor Study, add continuous Class IV or Class I bikeways through interchange and explore squaring up on/off ramps.	$$$$	TOP
SC-680-X02	Santa Clara	680	0.4		San Jose	S King Rd	Interchange reconstruction - ramps only- Class II	Consistent with VTA's I-680 Corridor Study, add continuous Class II bike lanes through interchange and explore squaring up on/off ramps. In the long term, modify interchange into diverging diamond.	$$$$	TOP

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SC-680-X03	Santa Clara	680	5.07		San Jose	Capitol Expy	Interchange reconstruction - ramps only- Class IIB	Consistent with VTA's I-680 Corridor Study, add continuous Class II bike lanes through interchange. Realign both Southbound and Northbound on-ramp to inserct Capital at 45 degrees. Install crosswalks and Class I path along the north side of Capitol.	$$$$	TOP
SC-680-X04	Santa Clara	680	4.79		San Jose	Hostetter Rd	Interchange reconstruction - ramps only- Class IV	Consistent with VTA's I-680 Corridor Study, add continuous bikeways through interchange and explore squaring up on/off ramps.	$$$$	TOP
SC-680-X05	Santa Clara	680	1.41		San Jose	Capitol Expy	Interchange reconstruction - ramps only- Class IV	Consistent with VTA's I-680 Corridor Study, add continuous bikeways through interchange and explore squaring up on/off ramps.	$$$$	TOP
SC-680-X06	Santa Clara	680	2.37		San Jose	Mckee Rd	Interchange reconstruction - full reconstruction- Class IV	Consistent with VTA's I-680 Corridor Study, add continuous bikeways through interchange. Square up ramps or modify free flow ramps to intersect McKee at 45 degrees. In the long term, convert full cloverleaf to partial cloverleaf.	$$$$	TOP
SC-680-X07	Santa Clara	680	3.84		San Jose	Berryessa Rd	Interchange reconstruction - ramps only- Class IIB	Consistent with VTA's I-680 Corridor Study, add continuous bikeways through interchange. Square up ramps or modify free flow ramps to intersect Berryessa at 45 degrees. In the long term, convert full cloverleaf to partial cloverleaf.	$$$$	LOW
SC-680-X08	Santa Clara	680	3.43		San Jose	Penetencia Creek	New separated crossing	Consistent with VTA's I-680 Corridor Study, upgrade Class I bike/pedestrian path under I-680 at Penetencia Creek	$$$$	MID
SC-680-X09	Santa Clara	680	6.18		Milpitas, San Jose	Montague Expy	Interchange reconstruction - full reconstruction- Class IV	Consistent with VTA's I-680 Corridor Study, upgrade bicycle facilities through interchange and convert Montague Expressway/Landess Avenue from a full cloverleaf to partial cloverleaf	$$$$	TOP
SC-680-X10	Santa Clara	680	5.86		San Jose	Trimble/Capewood	New separated crossing	Improve the Trimble/Capewood POC for bikes and pedestrians	$$$$	TOP
SC-680-X11	Santa Clara	680	2		San Jose	Madden Ave	New separated crossing	Per VTA's I-680 Corridor Study, improve the Madden Avenue POC for bicyclists and pedestrians.	$$$$	TOP
SC-680-X12	Santa Clara	680	6.99		Milpitas	Yosemite Dr	Minor interchange improvements (signage and striping)- Class IIB	Delineate Class II or enhanced bike lanes	$	TOP
SC-680-X13	Santa Clara	680	8.51		Milpitas	Jacklin Rd	Minor interchange improvements (signage and striping)- Class IIB	Delineate bike lanes through interchange	$	TOP

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SC-680-X14	Santa Clara	680	2.15		San Jose	Mather Dr	New separated crossing	Per VTA's I-680 Corridor Study, Construct a POC connecting Mather Drive and Mueller Avenue across I-680 or construct a 2-lane overcrossing and street	$$$$	TOP
SC-680-X15	Santa Clara	680	4.29		San Jose	Sierra Rd	New separated crossing	Construct a pedestrian overcrossing connecting Sierra Road to Old Abbey Place across I-680 or connecting Zoria Court to Camino Del Rey	$$$$	MID
SC-82-C01	Santa Clara	82	21.84	21.84	Mountain View	San Antonio Rd - Bernardo Ave	Corridor Improvement- Class IV	Provide a Class IV bikeway on El Camino Real (Hwy 82) from San Antonio Rd to Bernardo Ave	$$$	TOP
SC-82-C02	Santa Clara	82	14.36	14.36	Sunnyvale	Bernardo Ave - Lawrence Expwy	Corridor Improvement- Class IV	Provide a Class IV separated bikeway on El Camino Real (Hwy 82) from Bernardo Ave to Lawrence Expressway in the City of Sunnyvale.	$$$	TOP
SC-82-C03	Santa Clara	82	9.78	14.36	Santa Clara	Lawrence Expwy - I-880	Corridor Improvement- Class IV	Provide a Class IV separated bikeway on El Camino Real (Hwy 82) from Lawrence Expressway to I-880 in the City of Santa Clara	$$$	MID
SC-82-X01	Santa Clara	82	26.04		Palo Alto	Quarry Rd	New separated crossing	Per City of Palo Alto 2012 Bicycle + Pedestrian Transportation Plan, add roadway and intersection improvements that enhance access to existing station facilities, including widening underpasses along University Avenue	$$$$	TOP
SC-82-X02	Santa Clara	82	23.98		Palo Alto	Olive Ave	Intersection Improvement at uncontrolled intersection	Installation of a HAWK beacon across El Camino Real as part of mixed-use development project	$$	MID
SC-82-X03	Santa Clara	82	22.67		Palo Alto	Charleston Rd/Arastadero Rd	Intersection Improvement at controlled intersection	Explore curb extensions, roadway markings, upgraded traffic signal equipment, bicycle protection, green bike lane, raised crosswalk.	$	TOP
SC-82-X04	Santa Clara	82	25.44		Palo Alto	Embarcadero Rd	Intersection Improvement at controlled intersection	Provide protected intersection of Highway 82 and Embarcadero Road/Galvez St	$	TOP
SC-82-X05	Santa Clara	82	25		Palo Alto	Churchill Ave	Intersection Improvement at controlled intersection	Provide protected bike and pedestrian crossing, new traffic signal equipment, and roadway markings new right turn pocket, new signal and median on El Camino Real	$	LOW
SC-85-C01	Santa Clara	85	19.86	21.37	Sunnyvale	Dale Ave - Fremont Ave	Corridor Improvement- Class I	Construct a Class I path along Stevens Creek Trail from current end at Dale Ave to Fremont Ave, at least partially within Caltrans ROW.	$$$	MID
SC-85-X01	Santa Clara	85	22.29		Mountain View	Mountain View Alviso Rd	Interchange reconstruction - full reconstruction- Class IV	SR 85/SR237 Area Improvements in Mountain View to address mainline congestion and regional connectivity through the SR 85/SR 237 connector, SR 85/El Camino Real interchange and the SR 237/El Camino/Grant Road interchange.	$$$$	MID

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SC-85-X02	Santa Clara	85	19.09		Mountain View	Yuba Dr	Interchange reconstruction - full reconstruction- Class IV	SR 85/SR237 Area Improvements in Mountain View to address mainline congestion and regional connectivity through the SR 85/SR 237 connector, SR 85/El Camino Real interchange and the SR 237/El Camino/Grant Road interchange.	$$$$	TOP
SC-85-X03	Santa Clara	85	0.49		San Jose	Greak Oaks Blvd	Minor interchange improvements (signage and striping)- Class IV	Replace free-merging on/off ramps with stop-controlled ramps to improve bike and ped accommodation and safety. Add continuous sidewalks through interchange. Add continuous Class IV or I bikeways through interchange.	$$	MID
SC-85-X04	Santa Clara	85	3.9		San Jose	Blossom Hill Rd	Interchange reconstruction - ramps only- Class IV	Replace free-merging on/off ramps with stop-controlled ramps to improve bike and ped accommodation and safety. Add continuous sidewalks through interchange. Add continuous Class IV or I bikeways through interchange.	$$$$	TOP
SC-85-X05	Santa Clara	85	17.78		Cupertino	Stevens Creek Blvd	Minor interchange improvements (signage and striping)- Class IV	Explore interchange improvements on Stevens Creek Boulevard. May require some modification to on/off ramps	$$	MID
SC-85-X06	Santa Clara	85	17.92		Cupertino	Stevens Creek Blvd	New separated crossing	Potential overcrossing project as part of $8.7 million of community benefits provided by KT Urban for Oaks Shopping Center redevelopment	$$$$	MID
SC-85-X07	Santa Clara	85	20.48		Sunnyvale	Bryant Ave	New separated crossing	Create new bike/ped overcrossing of Hwy 85 at Bryant Ave to connect Mountain View High School to future Stevens Creek Trail	$$$$	MID
SC-85-X08	Santa Clara	85	18.84		Cupertino, Sunnyvale	Homestead Rd	Minor interchange improvements (signage and striping)- Class IV	Provide green striping and ideally Class IV across Hwy 85 ramps	$$	TOP
SC-87-X01	Santa Clara	87	4.73		San Jose	Captiol Corridor rail tracks	Interchange reconstruction - full reconstruction- Class I	Existing Class I Path may be impacted by proposed CA High Speed Rail and its major structures; City seeks sustained support for operation of this Class I Path upon Caltrans Right-of-way as CA HSR considers development in the narrow right-of-way.	$$$$	MID
SC-87-X02	Santa Clara	87	3.91		San Jose	Three Creeks Trail	New separated crossing	Class I Bikeway Pedestrian / Bicycle Bridge, with associated major ramp structure to the west, and sustained elevated alignment to the east. Subject of SkyLane Vision Study. Concept shared with CA High Speed Rail as part of environmental document scope development.	$$$$	TOP

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Num	County	Route	BPM	EPM	City	Location	Improvement Type	Description	Cost	Tier
SC-87-X03	Santa Clara	87	6.93		San Jose	Taylor St	Interchange reconstruction - full reconstruction- Class IV	Replace free-merging on/off ramps with stop-controlled ramps to improve bike and ped accommodation and safety. Add continuous sidewalks through interchange. Add continuous Class IV or I bikeways through interchange.	$$$$	LOW
SC-87-X04	Santa Clara	87	5.49		San Jose	W San Carlos St	Minor interchange improvements (signage and striping)- Class IV	Replace free-merging on/off ramps with stop-controlled ramps to improve bike and ped accommodation and safety. Add continuous sidewalks through interchange. Add continuous Class IV or I bikeways through interchange.	$$	MID
SC-87-X05	Santa Clara	87	1.36		San Jose	Capitol Expy	Interchange reconstruction - ramps only- Class IV	Replace free-merging on/off ramps with stop-controlled ramps to improve bike and ped accommodation and safety. Add continuous sidewalks through interchange. Add continuous Class IV or I bikeways through interchange.	$$$$	MID
SC-87-X06	Santa Clara	87	6.13		San Jose	Julian St	Interchange reconstruction - ramps only- Class IV	Replace free-merging on/off ramps with stop-controlled ramps to improve bike and ped accommodation and safety. Add continuous sidewalks through interchange. Add continuous Class IV or I bikeways through interchange.	$$$$	LOW
SC-87-X07	Santa Clara	87	5.38		San Jose	Azuerais Ave	Minor interchange improvements (signage and striping)- Class IV	Replace free-merging on/off ramps with stop-controlled ramps to improve bike and ped accommodation and safety. Add continuous sidewalks through interchange. Add continuous Class IV or I bikeways through interchange.	$$	MID
SC-87-X08	Santa Clara	87	8.4		San Jose	Guadalupe Pkwy	Minor interchange improvements (signage and striping)- Class IV	Add continuous bikeways on streets under/over freeway.	$$	MID
SC-880-X01	Santa Clara	880	9.33		Milpitas	Hwy 237/I-680/I-880 interchange	Interchange reconstruction - full reconstruction- Class IV	Short term interchange improvements can include signage and striping for active modes and in the long term, conversion from full cloverleaf interchanges to partial cloverleaf and/or a potential bicycle/pedestrian bridge over the highway.	$$$$	TOP
SC-880-X02	Santa Clara	880	0.4		San Jose	Stevens Creek Blvd	Interchange reconstruction - full reconstruction- Class IV	I-280/Lawrence Expressway/Stevens Creek Boulevard Interchange Improvements to address mainline and local roadway congestion. Construct Class IV Cycletracks	$$$$	TOP
SC-880-X03	Santa Clara	880	5.4		San Jose	O'Toole Ave	New separated crossing	Class I Bikeway (Trail) under-crossing. Project is defined by San Jose Council-approved master plan.	$$$$	TOP

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Num	County	Route	BPM	EPM	City	Location	Improvement Type	Description	Cost	Tier
SC-880-X04	Santa Clara	880	2.08		San Jose	The Alameda	Interchange reconstruction - ramps only- Class IV	Replace free-merging on/off ramps with stop-controlled ramps to improve bike and ped accommodation and safety. Add continuous sidewalks through interchange. Add continuous Class IV or I bikeways through interchange.	$$$$	LOW
SC-880-X05	Santa Clara	880	3.59		San Jose	N 1st St	Interchange reconstruction - ramps only- Class IV	Replace free-merging on/off ramps with stop-controlled ramps to improve bike and ped accommodation and safety. Add continuous sidewalks through interchange. Add continuous Class IV or I bikeways through interchange.	$$$$	TOP
SC-880-X06	Santa Clara	880	2.69		San Jose	Coleman Ave	Interchange reconstruction - ramps only- Class IV	Replace free-merging on/off ramps with stop-controlled ramps to improve bike and ped accommodation and safety. Add continuous sidewalks through interchange. Add continuous Class IV or I bikeways through interchange.	$$$$	MID
SC-880-X07	Santa Clara	880	5.35		San Jose	Brokaw Rd	Interchange reconstruction - ramps only- Class IV	Replace free-merging on/off ramps with stop-controlled ramps to improve bike and ped accommodation and safety. Add continuous sidewalks through interchange. Add continuous Class IV or I bikeways through interchange.	$$$$	TOP
SC-880-X08	Santa Clara	880	1.27		San Jose	Bascom Ave	Interchange reconstruction - full reconstruction- Class IV	Replace free-merging on/off ramps with stop-controlled ramps to improve bike and ped accommodation and safety. Add continuous sidewalks through interchange. Add continuous Class IV or I bikeways through interchange.	$$$$	MID
SC-880-X09	Santa Clara	880	4.29		San Jose	Old Bayshore Hwy	Interchange reconstruction - ramps only- Class IV	Replace free-merging on/off ramps with stop-controlled ramps to improve bike and ped accommodation and safety. Add continuous sidewalks through interchange. Add continuous Class IV or I bikeways through interchange. Old Bayshore is a Cross County Bicycle Corridor.	$$$$	TOP
SC-880-X10	Santa Clara	880	0.68		San Jose	Forest Ave	Minor interchange improvements (signage and striping)- Class IV	Add continuous bikeways on streets under/over freeway.	$$	TOP
SC-9, 17-X01	Santa Clara	9, 17	11.45		Los Gatos	Los Gatos-Saratoga Rd	Interchange reconstruction - full reconstruction- Class IV	Upgrade Highway 17/9 interchange to improve pedestrian and bicycle safety, mobility, and roadway operations.	$$$$	MID
SC-9-C01	Santa Clara	9	7.43	7.43	0	Los Gatos-Saratoga Rd - Hwy 35	Corridor Improvement-Shoulder improvements	Explore shoulder improvements along this segment of SR-9. When possible provide separate bike facilities	$$	MID

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Num	County	Route	BPM	EPM	City	Location	Improvement Type	Description	Cost	Tier
SF-1,35-X01	San Francisco	1,35	3.16		San Francisco	Sloat Blvd/19th Ave	Intersection Improvement at controlled intersection	Improve existing Class III facility by extending markings through the intersection on Sloat Boulevard crossing 19th Avenue.	$	MID
SF-101-C01	San Francisco	101	4.51	5.14	San Francisco	Duboce St - Market St - Divison St	Corridor Improvement- Class IV	Study underway to evaluate Class IV separated bicycle facility under the freeway to provide connections to Market and Valencia streets.	$$	TOP
SF-101-X01	San Francisco	101	3.03		San Francisco	Cesar Chavez St	Interchange reconstruction - full reconstruction- Class IV	Studying a number of potential solutions to improve safety for people biking and walking at the intersection of 101, Potrero Avenue, and Cesar Chavez including closing ramp and extending sidewalk.	$$$$	TOP
SF-101-X02	San Francisco	101	1.99		San Francisco	Alemany Blvd	Minor interchange improvements (signage and striping)- Class I	Existing project planning underway that includes Class I muli-use path from Alemany Farmer's Market to interesection of Alemany Boulevard and San Bruno Avenue.	$$	MID
SF-1-X01	San Francisco	1	5.86		San Francisco	Lake St	Intersection Improvement at controlled intersection	Improve crossing and address issues with people biking turning onto highway 1.	$	LOW
SF-1-X02	San Francisco	1	0.32		San Francisco	Brotherhood Way	New separated crossing	Create a new separated crossing, also a priority for the City.	$$$$	TOP
SF-1-X03	San Francisco	1	4.94		San Francisco	Fulton St	Intersection Improvement at controlled intersection	At intersection with Futlon, bike path from the park meets the roadway. Consider right turn phase and bike signal. Also improve crossing for bicyclists on Fulton St	$	MID
SF-1-X04	San Francisco	1	4.09		San Francisco	MLK Jr Dr	Intersection Improvement at controlled intersection	Improve intersection and address conflicts. Proposed bicycle priority phasing.	$	MID
SF-1-X05	San Francisco	1	3.65		San Francisco	Kirkham St	Intersection Improvement at controlled intersection	Continue Kirkham Street Class II bicycle lane through the intersection of 19th Avenue.	$	LOW
SF-1-X06	San Francisco	1	3.13		San Francisco	Ortega St	Intersection Improvement at controlled intersection	Provide bicycle accommodation on Ortega Street through the intersection of 19th Avenue (Hwy 1). Potentially extend bike lanes on Ortega from 20th Ave to (and through) Hwy 1.	$	LOW
SF-280-X01	San Francisco	280	5.66		San Francisco	Cesar Chavez St	Minor interchange improvements (signage and striping)- Class IIB	Improve bicycle accommodations at I-280 interchange at intersection of existing Class II facility along Cesar Chavez Street.	$	LOW
SF-280-X02	San Francisco	280	1.64		San Francisco	Ocean Ave/Geneva Ave	Interchange reconstruction - ramps only- Class IIB	I-280 ramps intersect with existing bicycle facilities on Ocean Avenue and Geneva Avenue. Explore potential for Class IV bicycle facility upgrades.	$$$$	TOP

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SF-280-X03	San Francisco	280	6.64		San Francisco	Mariposa St	Minor interchange improvements (signage and striping)- Class IIB	Improve existing Class III facility on Mariposa Street near the I-280 ramps.	$$	MID
SF-280-X04	San Francisco	280	27.4		Daly City	Saint Charles Ave	New separated crossing	Class III bike facility planned on St. Charles Avenue from Niantic Avenue to I-280 by San Mateo County.	$$$$	MID
SF-35-C01	San Francisco	35	1.95	3.16	San Francisco	19th Ave - Skyline Blvd	Corridor Improvement- Class IIB	Implement corridor improvements, potentially upgrading bike lanes to Class IV.	$	LOW
SF-35-C02	San Francisco	35	2.01	31.51	San Francisco	Sloat Blvd - San Francisco/San Mateo county line	Corridor Improvement- Class IIB	Provide bike lanes on Skyline Boulevard, potentially remove slip lanes.	$$	MID
SF-35-X01	San Francisco	35	1.25		San Francisco	Great Highway	Interchange reconstruction - ramps only- Class I	Improvements at intersection of Skyline Boulevard and Great Highway, including connection from Lake Merced path to the Great Highway. Part of Ocean Beach Master Plan.	$$$$	TOP
SF-35-X02	San Francisco	35	2		San Francisco	Sloat Ave/Skyline Blvd	Intersection Improvement at uncontrolled intersection	Improvements to crossing at intersection with Sloat and Skyline boulevards. Interchange reconfiguration proposed as part of the Ocean Beach Master Plan.	$$	TOP
SF-35-X03	San Francisco	35	2.11		San Francisco	Sunset Blvd	Interchange reconstruction - ramps only- Class II	Improve bicycle facilities at existing interchange.	$$$$	TOP
SF-35-X04	San Francisco	35	2.24		San Francisco	34th Ave/Clearfield Dr	Intersection Improvement at controlled intersection	Improve crossings and intersection with 34th Avenue/Clearfield Drive to provide access to Ocean Avenue.	$	TOP
SF-35-X05	San Francisco	35	3.06		San Francisco	21st Ave	Intersection Improvement at controlled intersection	Consider a two stage turn box to accompany new signal being installed at Sloat Boulevard and 21st Ave.	$	TOP
SF-35-X06	San Francisco	35	3.11		San Francisco	20th Ave	Intersection Improvement at controlled intersection	Explore the option for a bicycle path through existing median with a bike signal tied into the 19th Avenue and Sloat Boulevard intersection.	$	TOP
SF-80-C01	San Francisco	80	7.67	7.67	San Francisco	SF touchdown to Yerba Buena Island	Corridor Improvement- Class I	New separated Class I path along the Western span of the Bay Bridge	$$$$	TOP
SF-82-C01	San Francisco	82	0.16	0.17	San Francisco	Alemany BLvd	Corridor Improvement- Class IV	Corridor improvement Class IV facility crosses existing Class II facility on Alemany Boulevard	$	TOP

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SM-101-X01	San Mateo	101	20.41		San Bruno	San Bruno Ave E	New separated crossing	Potential San Mateo County project to install Class I adjacent to San Bruno Avenue over US 101	$$$$	TOP
SM-101-X02	San Mateo	101	17.96		Millbrae, Burlingame	E Millbrae Ave	New separated crossing	Construct a new separated crossing of Highway 101 parallel to the Millbrae Avenue vehicle bridge. Eliminates a critical barrier to the Millbrae Caltrain/BART station linking over 25 Bay Trail miles through 6 cities between Millbrae and San Carlos.	$$$$	TOP
SM-101-X03	San Mateo	101	16.14		Burlingame	Rollins Rd	New separated crossing	Potential San Mateo County Project to install Class IV on Oak Grove/Winchester between Ansel and Airport Boulevard	$$$$	MID
SM-101-X04	San Mateo	101	14.73		San Mateo	Peninsula Ave	Minor interchange improvements (signage and striping)- Class IV	Potential San Mateo County project to install Class IV facility on Peninsula Avenue from Bayshore Boulevard to Dwight/Delaware.	$$	MID
SM-101-X05	San Mateo	101	22.03		South San Francisco	E Grand Ave	Minor interchange improvements (signage and striping)- Class IIB	Potential San Mateo County project to install Class II bike facility on Grand Avenue between Airport Boulevard and Gateway Boulevard	$	TOP
SM-101-X06	San Mateo	101	22.81		South San Francisco	Sister Cities Blvd	Minor interchange improvements (signage and striping)- Class IV	Potential San Mateo County project to improve crossing with signage and striping at Oyster Point/US 101 interchange.	$$	TOP
SM-101-X07	San Mateo	101	25.82		Menlo Park	Marsh Rd	Minor interchange improvements (signage and striping)- Class IIB	Proposed Class II bike lanes on Marsh Road per San Mateo County Bicycle and Pedestrian Master Plan. Implement bicycle priority merge treatments on Marsh Road.	$	TOP
SM-101-X08	San Mateo	101	6.64		Redwood City	Whipple Ave	Minor interchange improvements (signage and striping)- Class II	Signage and striping improvement on Whipple Road overcrossing.	$	TOP
SM-101-X09	San Mateo	101	5.53		Redwood City	Chestnut/Seaport	New separated crossing	Proposed undercrossing from Chestnut to Seaport. Included in US 101/Woodside Rd interchange project (in design).	$$$$	TOP
SM-101-X10	San Mateo	101	11.17		San Mateo	E Hillsdale Blvd	New separated crossing	Potential San Mateo County project to install overcrossing from Norfolk Street to Franklin Parkway	$$$$	TOP
SM-101-X11	San Mateo	101	12		San Mateo	Lodi Ave/Haddon Dr	New separated crossing	Potential San Mateo County project to install new overcrossing from Lodi Avenue and Norton Street to Haddon Drive	$$$$	TOP
SM-101-X12	San Mateo	101	13.5		San Mateo	3rd Ave/4th Ave	Interchange reconstruction - ramps only- Class IV	Potential San Mateo County project to improve crossing at 3rd and 4th avenues and 101 interchange.	$$$$	TOP

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SM-101-X13	San Mateo	101	9.57		Belmont	Ralston Ave	Minor interchange improvements (signage and striping)- Class II	Improve bicycle accommodations at interchange and consider squaring up ramps as this is near Belmont bicycle and pedestrian overcrossing.	$	LOW
SM-101-X14	San Mateo	101	3.72		Redwood City, Menlo Park	Marsh Rd	New separated crossing	New separated crossing north of Marsh Road. New Class II bike lanes planned for Marsh Road by Menlo Park as well as newly installed bike facilities on Haven Avenue.	$$$$	TOP
SM-101-X15	San Mateo	101	15.96		Burlingame	Winchester Dr	New separated crossing	San Mateo County considering project to construct new Class IV facilities on Oak Grove Avenue and Winchester Drive.	$$$$	MID
SM-101-X16	San Mateo	101	0.89		East Palo Alto	University Ave	New separated crossing	Construct new Class I bicycle and pedestrian bridge over the 101 north of University Avenue.	$$$$	TOP
SM-109-C01	San Mateo	109	1.1	1.87	Menlo Park, East Palo Alto	Hwy 84 - Notre Dame Ave	Corridor Improvement- Class IIB	Consider narrowing lanes to reduce vehicle speeds and improve comfort on existing bike lanes.	$	MID
SM-109-X01	San Mateo	109	1.5		Menlo Park	University Ave	Intersection Improvement at uncontrolled intersection	Consider future connection to pedestrian and bicycle trail on the Dumbarton Bridge	$	MID
SM-114-C01	San Mateo	114	5.93	5.93	Menlo Park, East Palo Alto	Hwy 84 - US 101	Corridor Improvement- Class IV	Connect new protected bike lanes on Willow Road to Bay Trail and Facebook campus.	$$	TOP
SM-114-C02	San Mateo	114	5.57	5.57	Menlo Park, East Palo Alto	Ivy Dr	Corridor Improvement- Class IV	Improvements to pedestrian crossings (interval timing), maintenance of crosswalk markings, and crosswalk alignment.	$	TOP
SM-114-X01	San Mateo	114	5.81		Menlo Park	Dumbarton rail line	Intersection Improvement at uncontrolled intersection	Consider future connection to pedestrian and bicycle trail on the Dumbarton Bridge	$	MID
SM-1-C01	San Mateo	1	27.81	31.01	Half Moon Bay	Roosevelt Blvd - Higgins Canyon Rd	Corridor Improvement- Class I	Potential San Mateo County project to install Class I facility on SR 1.	$$$	MID
SM-1-C02	San Mateo	1	30.92	30.92	Half Moon Bay	Hwy 92 - Wavecrest Rd	Corridor Improvement- Class I	Complete Class I bikeways on both sides of Hwy 1 to connect neighborhoods along the both sides of the Hwy to controlled crossings.	$$$	MID
SM-1-C03	San Mateo	1	37.97	38.47	Unincorporated	Gray Whale Cove parking area - Devils Slide Trail	Corridor Improvement- Class I	Provide a Class I connection from Grey Whale Cove to Devils Slide Trail along Hwy 1	$$	TOP
SM-1-C04	San Mateo	1	40	40.71	Pacifica	San Pedro Ave - Devils Slide Trail	Corridor Improvement- Class I	Provide connection from Pacifica to Devils Slide Trail along Hwy 1 or other option	$$	TOP

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SM-1-C05	San Mateo	1	34.92	34.92	Montara, Half Moon Bay	Grey Whale Cove - Half Moon Bay Airport	Corridor Improvement- Class I	Proivde Class I path in Hwy 1 ROW	$$$	MID
SM-1-C06	San Mateo	1	23.62	23.62	San Gregorio	Cowell- Purisma Trail - San Gregorio Beach parking lot	Corridor Improvement- Class I	Provide a Class I trail in Hwy 1 ROW from Cowell-Purisma Trailhead to San Gregorio Beach parking lot	$$$	MID
SM-1-C07	San Mateo	1	26.17	26.67	Half Moon Bay	Wave Crest Rd - Dehoff Ln	Corridor Improvement- Class I	Complete Class I on both sides of Hwy 1 from Wave Crest Rd to Half Moon Bay City limits (just north of Dehoff Canyon Rd).	$$$	LOW
SM-1-X01	San Mateo	1	43.51		Pacifica	Sharp Park Rd	Interchange reconstruction - ramps only- Class IIB	Potential San Mateo County project to improve crossing at Sharp Park Road/Highway 1 interchange.	$$$$	LOW
SM-1-X02	San Mateo	1	44.94		Pacifica	Palmetto Ave	Minor interchange improvements (signage and striping)- Class IIB	Potential San Mateo County project to install Class II bike lane on Palmetto Avenue between Avalon Drive and SR 35.	$	LOW
SM-1-X03	San Mateo	1	28.82		Half Moon Bay	Kelly Ave	Intersection Improvement at controlled intersection	Potential San Mateo County project to improve crossing at Kelly Avenue and SR 1 intersetion.	$	LOW
SM-1-X04	San Mateo	1	28.29		Half Moon Bay	Poplar St	Intersection Improvement at controlled intersection	Potential San Mateo County project to improve crossing at Poplar Street and SR 1 intersection.	$$	LOW
SM-1-X05	San Mateo	1	32.95		El Granada	Capistrano Rd	Intersection Improvement at controlled intersection	Potential San Mateo County project to install Class III bike route on Capistrano Road between Prospect Way and SR 1. Also improve crossing at Capistrano Road and SR 1 intersection.	$	LOW
SM-1-X06	San Mateo	1	0		Half Moon Bay	Hwy 92	Intersection Improvement at controlled intersection	Potential San Mateo County project to improve crossing at SR 1 and SR 92 intersection.	$$	LOW
SM-1-X07	San Mateo	1	35.94		Moss Beach	Carlos St	Intersection Improvement at uncontrolled intersection	Potential San Mateo County project to install Class II bike lanes on Carlos Street from SR 1 to Vermont Avenue.	$$	LOW
SM-1-X08	San Mateo	1	33.45		Moss Beach, El Granada	Capistrano Rd	Intersection Improvement at uncontrolled intersection	Potential San Mateo County Project to improve crossing at Capistrano and SR 1 intersection. Consider closing or reconfiguring free right turn lane.	$$	LOW
SM-1-X09	San Mateo	1	32.09		El Granada	Coronado St	Intersection Improvement at controlled intersection	Potential San Mateo County project to improve crossing at Coronado Street and SR 1 intersection.	$	LOW
SM-1-X10	San Mateo	1	35.06		Moss Beach	Cypress Ave	Intersection Improvement at uncontrolled intersection	Potential San Mateo County project to improve crossing at Cypress Avenue and SR 1 intersection.	$$	LOW

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SM-1-X11	San Mateo	1	33.91		Moss Beach	Half Moon Bay Airport entrance	Intersection Improvement at uncontrolled intersection	Potential San Mateo County project to improve crossing at Half Moon Bay Airport and SR 1 intersection.	$$	LOW
SM-1-X12	San Mateo	1	31.27		El Granada	Mirada Rd	Intersection Improvement at uncontrolled intersection	Potential San Mateo County project to improve crossing at Mirada Road and SR 1 intersection	$$	LOW
SM-1-X13	San Mateo	1	27.81		Half Moon Bay	Higgins Canyon Rd	Intersection Improvement at controlled intersection	Provide crossing improvements of Hwy 1 including striping bike facilities and improving pedestrian crossing at Higgins Ranch Rd.	$	LOW
SM-1-X14	San Mateo	1	37.95		Unincorporated	Gray Whale Cove	Intersection Improvement at uncontrolled intersection	Provide flashing beacon, pedestrian hybrid beacon, or other improvement along Hwy 1 at Gray Whale Cove beach parking lot to connect to Gray Whale Cove State Beach. Primarily pedestrian focused crossing.	$	MID
SM-1-X15	San Mateo	1	36.68		Montara Rd	2nd St	Intersection Improvement at uncontrolled intersection	Provide flashing beacons or other advance warning for bicyclists crossing Hwy 1 at 2nd St in Montara	$	LOW
SM-1-X16	San Mateo	1	36.44		Montara Rd	7th St	Intersection Improvement at uncontrolled intersection	Provide flashing beacons or other advance warning for bicyclists crossings of Hwy 1 at 7th St in Montara	$	LOW
SM-1-X17	San Mateo	1	35.27		Moss Beach	Virginia Ave	Intersection Improvement at uncontrolled intersection	Provide Ped Hybrid Beacon or flashing beacons for an improved bike and ped crossing of Hwy 1 in Moss Beach - exact location TBD	$	LOW
SM-280-C01	San Mateo	280	25.79	48.36	Daly City	John Daly Blvd - San Pedro Rd	Corridor Improvement- Class II	Potential San Mateo County project to install Class II on Junipero Serra Boulevard	$	LOW
SM-280-X01	San Mateo	280	25.97		Daly City	Washington St	Minor interchange improvements (signage and striping)- Class IIB	Potential San Mateo County project to install Class III facility on Washington Street between Junipero Serra Boulevard and Heather Road.	$	TOP
SM-280-X02	San Mateo	280	24.63		Daly City	Serramonte Blvd	Minor interchange improvements (signage and striping)- Class IV	Potential San Mateo County project to install Class IV on Serramonte Boulevard between Hillside Boulevard and Gellert Boulevard.	$$	TOP
SM-280-X03	San Mateo	280	24.2		Daly City	Hickey Blvd	Minor interchange improvements (signage and striping)- Class II	Potential San Mateo County project to install Class III on Hickey Boulevard between Longford and Skyline Boulevard. Consider including dashed markings through intersection.	$	LOW
SM-280-X04	San Mateo	280	18.54		Millbrae	Larkspur Dr	Minor interchange improvements (signage and striping)- Class II	Potential San Mateo County project to install Class II on Larkspur Drive under I 280	$	LOW
SM-280-X05	San Mateo	280	22.62		South San Francisco	Westborough Blvd	Minor interchange improvements (signage and striping)- Class IIB	Potential San Mateo County project to install Class III bike route on Westborough Boulevard between Callan Boulevard and I 280.	$$	TOP

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SM-280-X06	San Mateo	280	4.65		Woodside	Farm Hill Blvd	Minor interchange improvements (signage and striping)- Class I	Potential San Mateo County Project to install new Class I facility from Farm Hill Boulevard to Canada Road	$$	LOW
SM-280-X07	San Mateo	280	20.75		San Bruno	San Bruno Ave W	Minor interchange improvements (signage and striping)- Class IIB	City is proposing the conversion of vehicle lanes into a Class II buffered bike lane where San Bruno Avenue crosses under I-280.	$	MID
SM-280-X08	San Mateo	280	21.29		San Bruno	Sneath Ln	Interchange reconstruction - ramps only- Class II	Improve bicycle accommodations at intersection with Sneath Lane which is being improved by the City of San Bruno. Proposed improves may include widening or conversion to a roundabout to accommodate Class II bike lane.	$$$$	LOW
SM-280-X09	San Mateo	280	1.59		Menlo Park	Sand Hill Rd	Minor interchange improvements (signage and striping)- Class IIB	Improvements to existing intersection with Sand Hill Road which is a popular bicycle route.	$	TOP
SM-280-X10	San Mateo	280	6.67		Unincorporated	Edgewood Rd	Minor interchange improvements (signage and striping)- Class IIB	Provide bike lanes, conflict markings, minor ramp improvements and signage along Edgewood Rd at I-280 interchange	$	LOW
SM-35-C01	San Mateo	35	29.27	46.74	Daly City	Shelbourne Ave - Hwy 1	Corridor Improvement- Class IV	Potential San Mateo County project to Class IV on Skyline Boulevard between where the shoulder widens and Gateway Drive.	$$	TOP
SM-35-C02	San Mateo	35	24.35	24.35	San Bruno	Berkshire Dr - San Bruno Ave	Corridor Improvement- Class IV	Potential San Mateo County project to install Class IV facility. May need to consider Class II or Class I facility instead (existing parallel to Highway 35).	$$	TOP
SM-35-C03	San Mateo	35	26.6	26.6	Pacifica, San Bruno	Berkshire Dr - San Bruno Ave	Corridor Improvement- Class II	Potential San Mateo County project to install Class II bike lane on Skyline Boulevard between bike path and Berkshire Drive.	$	LOW
SM-35-C04	San Mateo	35	10.66	11.03	Woodside	Morse Ln - Hwy 84	Corridor Improvement- Class II	Potential San Mateo County project to install Class II bicycle facilities on SR 35 from city boundary to SR 84.	$	LOW
SM-35-C05	San Mateo	35	24.35	26.34	Pacifica, San Bruno	Sneath Ln - San Andreas Trail	Corridor Improvement- Class II	City Bike Plan calls for Class II facilities on the existing shoulder. Considering upgrading to a Class I or Class IV facility to provide connection from Sneath Lane to the San Andreas Trail.	$	LOW
SM-35-X01	San Mateo	35	29.7		Daly City	Westmoor Ave	Intersection Improvement at controlled intersection	Potential San Mateo County project to install Class III on Westmoor Avenue between Southgate and Skyline Drive.	$	TOP
SM-35-X02	San Mateo	35	27.92		Daly City	Hickey Blvd	Intersection Improvement at controlled intersection	Potential San Mateo County project to install Class III on Hickey Boulevard between Skyline Boulevard and Highway 1.	$	TOP

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Num	County	Route	BPM	EPM	City	Location	Improvement Type	Description	Cost	Tier
SM-35-X03	San Mateo	35	26.22		Pacifica, San Bruno	Sharp Park Rd	Intersection Improvement at controlled intersection	Potential San Mateo County project to improve facilities on Skyline Boulevard/Sharp Park Road intersection	$	TOP
SM-35-X04	San Mateo	35	24.35		San Bruno	San Bruno Ave	Intersection Improvement at controlled intersection	Potential San Mateo County project to install Class II on San Bruno Avenue between SR 35/Skyline Boulevard and Huntington Avenue	$	LOW
SM-380-X01	San Mateo	380	5		San Bruno	Cherry Ave	New separated crossing	Potential San Mateo County project to install Class II bike lane on Cherry Avenue between Sneath Lane and San Bruno Avenue. Consider improvements to lighting.	$$$$	LOW
SM-380-X02	San Mateo	380	6.6		South San Francisco	S Airport Blvd	Minor interchange improvements (signage and striping)- Class IIB	Potential San Mateo County project to install Class I adjacent to Airport Boulevard under intersection with I 380	$	MID
SM-82-C01	San Mateo	82	22.59	24.86	Daly City, Colma	John Daly Blvd - Collins Ave	Corridor Improvement- Class IV	San Mateo county recommends Class III	$$$	TOP
SM-82-C02	San Mateo	82	3.75	4.5	Redwood City	Broadway - Beech St	Corridor Improvement- Class II	Proposed Class II bike lanes on El Camino Real from Broadway to Beech Street.	$	LOW
SM-82-C03	San Mateo	82	3.25	4	Redwood City	Lincoln Ave - Main St	Corridor Improvement- Class II	Proposed Class II bike lanes on El Camino Real from Lincoln Avenue to Main Street.	$	MID
SM-82-C04	San Mateo	82	7.07	7.71	Belmont, San Carlos	Ralston Ave - F St	Corridor Improvement- Class II	Potential San Mateo Country project to install Class II facilities on El Camino Real between Ralston Avenue and San Carlos city limit.	$	LOW
SM-82-C05	San Mateo	82	4.7	5.59	San Bruno	I-280 - El Camino Real	Corridor Improvement- Class I	Class I multi-use path long-term project from San Bruno Walk and Bike Plan from Commodore Park to El Camino Real.	$$	LOW
SM-82-C06	San Mateo	82	11.4	11.95	San Mateo	Baldwin Ave - 9th Ave	Corridor Improvement- Class IV	Improvements on El Camino Real per City Sustainable Streets Plan including a road diet removing a travel lane and converting to a Class IV separated bicycle facility.	$$	TOP
SM-82-C07	San Mateo	82	7.51	7.76	Belmont	Oneill Ave - Ralston Ave	Corridor Improvement- Class IV	Proposed grade-separated multi-use path along eastern frontage of El Camino Real along the Caltrain station parking lot from Oneill Avenue to Ralston Avenue. Proposed improvements are part of the Ralston Avenue Corridor Plan and Belmont Village Specific Plan.	$	TOP
SM-82-C08	San Mateo	82	1.99	1.99	Atherton, Menlo Park	Atherton Ave - Encinal Ave	Corridor Improvement- Class I	Proposed Class I two-way shared-use trail for southbound direction with planted buffer and enhanced bus stop per Town of Atherton Bicycle and Pedestrian Master Plan.	$$	TOP

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SM-82-C09	San Mateo	82	2.73	5.17	Redwood City	Cordilleras Creek to Berkshire Ave	Corridor Improvement- Class IV	Class IV on El Camino Real throughout Redwood City (~ Cordilleras Creek to Berkshire Ave) under study by Grand Boulevard Initiative	$$	TOP
SM-82-C10	San Mateo	82	2.74	2.74	Atherton	Selby Ln - Encinal Ave	Corridor Improvement- Class IV	Class IV on El Camino Real in Atherton - Atherton study is on hold.	$$	TOP
SM-82-C11	San Mateo	82	0.38	1.27	Menlo Park	Encinal Ave - Middle Ave	Corridor Improvement- Class IV	Class IV on El Camino Real in Menlo Park - Encinal Ave to Middle Ave. Menlo Park study was put on hold in May of 2016	$$	TOP
SM-82-X01	San Mateo	82	23.77		Daly City	Market St	Intersection Improvement at controlled intersection	Planned San Mateo County project to install Class II bike lanes on Market Street and San Pedro Road between Hillside Boulevard and Baldwin Avenue.	$	TOP
SM-82-X02	San Mateo	82	23.29		Colma	F St	Intersection Improvement at uncontrolled intersection	Potential San Mateo County project to install Class III on F Street between El Camino Real and Hillside Boulevard	$	MID
SM-82-X03	San Mateo	82	22.76		Colma	Serramonte Blvd	Intersection Improvement at controlled intersection	Potential San Mateo County project to install Class IV on Serramonte Boulevard between Hillside Boulevard and Gellert Boulevard.	$	MID
SM-82-X04	San Mateo	82	22.24		South San Francisco	Arlington Dr	Intersection Improvement at uncontrolled intersection	New uncontrolled crossing. Potential San Mateo County project to install Class I parallel to and crossing El Camino Real.	$$	TOP
SM-82-X05	San Mateo	82	18.65		San Bruno	San Bruno Ave	Intersection Improvement at controlled intersection	Potential San Mateo County project to install Class II on San Bruno Avenue between SR 35/Skyline Boulevard and Huntington Avenue	$	LOW
SM-82-X06	San Mateo	82	16.89		Millbrae	Center ST	Intersection Improvement at controlled intersection	Potential San Mateo County project to install Class III on Center Street between San Anselmo Avenue and Broadway	$	TOP
SM-82-X07	San Mateo	82	16.35		Millbrae	Hillcrest Blvd	Intersection Improvement at controlled intersection	Potential San Mateo County project to install Class III on Hillcrest Boulevard between Broadway and Aviador	$	TOP
SM-82-X08	San Mateo	82	15.99		Millbrae, Burlingame	Millbrae Ave	Intersection Improvement at controlled intersection	Potential San Mateo County project to install Class III on Millbrae Avenue between Magnolia Avenue and Old Bayshore	$	TOP
SM-82-X09	San Mateo	82	14.84		Burlingame	Hillside Dr	Intersection Improvement at controlled intersection	Potential San Mateo County Project to install Class II on Hillside Drive between El Camino Real and Alvarado Avenue.	$	TOP
SM-82-X10	San Mateo	82	13.73		Burlingame	Floribunda	Intersection Improvement at controlled intersection	Potential San Mateo County project to install Class III bike route on Floribunda between Ansel and Highgate	$	TOP

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SM-82-X11	San Mateo	82	13.27		Burlingame	Howard Ave	Intersection Improvement at controlled intersection	Potential San Mateo County project to improve crossing at Howard and El Camino Real intersection.	$	TOP
SM-82-X12	San Mateo	82	24.86		Daly City	John Daly Blvd	Intersection Improvement at controlled intersection	Provide roundabout or Class IV at complex intersection	$	MID
SM-82-X13	San Mateo	82	19.26		San Bruno	Sneath Ln	Intersection Improvement at controlled intersection	Potential San Mateo County project to improve crossing at Sneath Lane/SR 82.	$	TOP
SM-82-X14	San Mateo	82	0.38		Menlo Park	Middle Ave	New separated crossing	Proposed undercrossing on Middle Avenue below El Camino Real per San Mateo County Bicycle and Pedestrian Master Plan.	$$$$	LOW
SM-82-X15	San Mateo	82	1.27		Menlo Park	Encinal Ave	Minor interchange improvements (signage and striping)- Class II	Proposed Class II bike lanes along El Camino Real between Alejandra Avenue and Valparaiso Avenue per San Mateo County Bicycle and Pedestrian Master Plan.	$	LOW
SM-82-X16	San Mateo	82	20.72		South San Francisco	Chestnut Ave	Intersection Improvement at controlled intersection	Potential San Mateo County project to improve crossing at Chestnut Avenue and Westborough Boulevard intersection.	$	TOP
SM-82-X17	San Mateo	82	16.04		Millbrae	Linden Ave	Intersection Improvement at uncontrolled intersection	Potential San Mateo County Project to construct Class II bike lanes on Linden Avenue between Millbrae Caltrain station and SR 82.	$$	TOP
SM-82-X18	San Mateo	82	4.1		Redwood City	Jefferson Ave	Intersection Improvement at controlled intersection	Bike lanes cross through intersection on Jefferson Avenue.	$	TOP
SM-82-X19	San Mateo	82	3.72		Redwood City	Roosevelt Ave	Intersection Improvement at controlled intersection	Improve crossing at Roosevelt Avenue	$	TOP
SM-82-X20	San Mateo	82	8.78		San Mateo	41st Ave	Intersection Improvement at controlled intersection	Potential San Mateo Country project to install Class II facilities on 41st Avenue from Edison Street to SR 82.	$	TOP
SM-82-X21	San Mateo	82	11.63		San Mateo	5th Ave	Intersection Improvement at controlled intersection	Potential San Mateo County project to install Class III facilities on 5th Avenue from 3rd Avenue to SR 82.	$	TOP
SM-82-X22	San Mateo	82	10.05		San Mateo	25th Ave	Intersection Improvement at controlled intersection	Potential San Mateo County project to improve crossing at 25th Avenue and SR 82 intersection	$	TOP
SM-82-X23	San Mateo	82	4.53		Redwood City	Brewster Ave	Intersection Improvement at controlled intersection	Improve crossing at Brewster Avenue.	$	TOP
SM-82-X24	San Mateo	82	4.98		Redwood City	Edgewood Rd	Intersection Improvement at controlled intersection	Improve crossing at Edgewood Road.	$	TOP
SM-82-X25	San Mateo	82	12.11		San Mateo	El Cerrito Ave	Intersection Improvement at controlled intersection	Potential San Mateo County project to improve crossing at El Cerrito Avenue and SR 82.	$	TOP
SM-82-X26	San Mateo	82	6.45		San Carlos	San Carlos Ave	Intersection Improvement at controlled intersection	Improve crossing from San Carlos Avenue to Caltrain Station.	$	TOP

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SM-82-X27	San Mateo	82	6.58		San Carlos	Holly St	Minor interchange improvements (signage and striping)- Class IIB	Improve crossing with Holly Street.	$	TOP
SM-82-X28	San Mateo	82	5.83		San Carlos	Brittain Ave	Intersection Improvement at controlled intersection	San Mateo County Bicycle and Pedestrian Master Plan proposes improvements to crossing.	$	TOP
SM-82-X29	San Mateo	82	2.49		Atherton	5th Ave	Intersection Improvement at controlled intersection	San Mateo County Bicycle and Pedestrian Master Plan proposes Class II bike lanes on 5th Avenue. Consider improvements at intersection with El Camino Real	####	TOP
SM-82-X30	San Mateo	82	9.8		San Mateo	28th Ave	Intersection Improvement at controlled intersection	Improve bicycle access to Hillsdale Multimodal Transit Center. New signalized intersection at entrance to transit center.	$	TOP
SM-82-X31	San Mateo	82	7.88		Belmont	Middle Rd	Intersection Improvement at uncontrolled intersection	Improvements along this segment are part of the Belmont Village Specific Plan.	$$	TOP
SM-82-X32	San Mateo	82	7.71		Belmont	Ralston Ave	Intersection Improvement at controlled intersection	Project crosses Ralson Avenue which is slated for improvements in the Belmont Village Specific Plan.	$	TOP
SM-82-X33	San Mateo	82	1.61		Atherton, Menlo Park	Watkins Ave	Intersection Improvement at uncontrolled intersection	Enhancements including sidewalk treatment on northbound side, hybrid pedestrian signal, median, bus stop, and crosswalk at Watkins Avenue and Isabella Avenue.	$$	MID
SM-82-X34	San Mateo	82	2.62		Atherton	Selby Ln	Intersection Improvement at uncontrolled intersection	Installation of new hybrid beacon with crosswalk and center median upgrades. Consider coordinated bicycle detection at Selby Lane.	$$	MID
SM-82-X35	San Mateo	82	26.32		Palo Alto	Sand Hill Rd	Intersection Improvement at controlled intersection	Improvements proposed to Class II bike lane and connection to Class IV path per Palo Alto Bicycle and Pedestrian Master Plan.	$	TOP
SM-82-X37	San Mateo	82	15.84		Millbrae, Burlingame	Murchison Dr	Intersection Improvement at controlled intersection	Possible connection to potential Class III facility on Murchison Drive by County.	$	TOP
SM-82-X38	San Mateo	82	24.92		Daly City	Hillcrest Dr	Intersection Improvement at controlled intersection	Possible connection to potential Class IV project for Hillcrest Drive and Vendome Avenue by County.	$	MID
SM-82-X39	San Mateo	82	7.65		Belmont	Emmett Ave	Intersection Improvement at uncontrolled intersection	Proposed enhanced bicycle crossing at El Camino Real and Emmett Avenue with HAWK signal as part of the Ralston Avenue Corridor Plan.	$$	TOP
SM-84,82-X01	San Mateo	84,82	24.65		Redwood City	SR 82/SR 84 intersection	Minor interchange improvements (signage and striping)- Class II	San Mateo County Bicycle and Pedestrian Master Plan proposed crossing improvement. Consider removing slip lanes and traffic islands to increase safety.	$$	TOP

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SM-84-C01	San Mateo	84	1.87	1.87	Menlo Park	University Ave	Corridor Improvement- Class I	Corridor improvement and connection to Dumbarton Bridge, removing the signalized crossing at University Avenue for Bay Trail users.	$$	LOW
SM-84-C02	San Mateo	84	10.66	10.66	Unincorporated	I-280 - Hwy 35	Corridor Improvement- Shoulder improvements	Corridor improvement to provide accommodation for bicycles on popular recreational route particularly focusing on curves.	$$	MID
SM-84-C03	San Mateo	84	24.12	25.72	Redwood City	US 101 - Hudson St/Central Ave	Corridor Improvement- Class IV	Class IV and II facility from US 101 to Hudson St/Central Ave in Redwood City. Include ramp improvements at Hwy 82.	$$	TOP
SM-84-C04	San Mateo	84	24.12	24.12	Redwood City	Central Ave - Alameda de las Pulgas	Corridor Improvement- Class IIB	Class II buffered bike lanes on Hwy 84 from Central Ave to Alameda de las Pulgas	$$	LOW
SM-84-X01	San Mateo	84	25.03		Redwood City	Middlefield Rd	Intersection Improvement at controlled intersection	Improve highway crossing.	$	TOP
SM-84-X02	San Mateo	84	24.12		Redwood City	Hudson St/Central Ave	Intersection Improvement at controlled intersection	Proposed bike lanes on Hudson Street and Central Avenue.	$	TOP
SM-84-X03	San Mateo	84	23.18		Redwood City	Massachusetts Ave/San Carlos Ave	Intersection Improvement at controlled intersection	Improve crossing at intersection with existing bike facilities on Massachuesetts Avenue and San Carlos Avenue.	$	MID
SM-84-X04	San Mateo	84	19.68		Woodside	Kings Mountain Rd	Intersection Improvement at uncontrolled intersection	Potential San Mateo County Project to install Class II bike lane on Kings Mountain Road from city boundary to SR 84.	$	MID
SM-84-X05	San Mateo	84	20.45		Woodside	Canada Rd	Intersection Improvement at uncontrolled intersection	Potential project by San Mateo County to improve crossing at Canada Road and SR 84. Town of Woodside interested in narrowing travel lane to widen shoulder in front of Roberts Market to accommodate parking.	$	LOW
SM-84-X06	San Mateo	84	10.66		Woodside	La Honda Rd/Hwy 35	Intersection Improvement at uncontrolled intersection	Potential project by San Mateo County to improve crossing at La Honda Road and SR 35 intersection.	$	TOP
SM-84-X08	San Mateo	84	21.38		Woodside	I-280 ramp - I-280 ramp	Intersection Improvement at controlled intersection	Provide continuous Class IV separated bicycle facility with green paint on SR 84 through I-280 interchange and consider posting warning signs and lower speed limits.	$	TOP
SM-84-X09	San Mateo	84	26.97		Menlo Park	Chilco St	New separated crossing	Proposed pedestrian overpass as part of the Facebook Campus expansion. Project is funded locally and under review by Caltrans.	$$$$	TOP
SM-84-X10	San Mateo	84	8.97		La Honda	Entrada Rd/Sears Ranch Rd	Intersection Improvement at uncontrolled intersection	Improve bicycle access across Hwy 84 along Entrada Rd/Sears Ranch Rd, including potentially a flashing beacon.	$	LOW

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SM-92-C01	San Mateo	92	0.2	1.12	Half Moon Bay	Main St - HMB town limit	Corridor Improvement- Class II	Potential San Mateo County project to install Class II bike lanes on San Mateo Road/SR 92 between Main Street and city boundary.	$	LOW
SM-92-C02	San Mateo	92	0	0	Half Moon Bay	Hwy 1 - Half Moon Bay border	Corridor Improvement- Class I	Potential San Mateo County project to install Class I facility on SR 92.	$$	TOP
SM-92-C03	San Mateo	92	0	0	Half Moon Bay	Hwy 1 - Main St	Corridor Improvement- Class I	Consider Class II bike lane or shoulder improvements on SR 92 between highway 1 and Main Street in Half Moon Bay to connect to existing bike routes.	$	TOP
SM-92-X01	San Mateo	92	7.93		San Mateo	Ralston Ave	Minor interchange improvements (signage and striping)- Class IIB	Potential San Mateo County project to improve crossing at Polhemus, Ralston Avenue, SR 92 interchange. Consider Class II bike lanes near the ramps for SR 92 at Ralson Avenue.	$	MID
SM-92-X02	San Mateo	92	10.83		San Mateo	Borel Pl/Spuraway Dr	New separated crossing	Potential San Mateo Country project to construct overcrossing from Borel Place to Spuraway Drive	$$$$	MID
SM-92-X03	San Mateo	92	8.65		San Mateo	De Anza Blvd	Minor interchange improvements (signage and striping)- Class IIB	Potential San Mateo County project to install Class III facilities on De Anza Boulevard from SR 92 to Polhemus Road	$	LOW
SM-92-X04	San Mateo	92	10.53		San Mateo	Alameda de Las Pulgas	Minor interchange improvements (signage and striping)- Class IV	Potential San Mateo County project to improve crossing at Alameda de las Pulgas and SR 92 interchanges	$$	MID
SMAI-84-C01	San Mateo,Alameda	84	0.71	29.15	Menlo Park, Fremont	San Francisco Bay Trail - Marshlands Rd	Corridor Improvement- Class I	Widen existing Class I path on Dumbarton Bridge along Bay Trail to meet standards.	$$$$	MID
SMAI-92-C01	San Mateo,Alameda	92	4.47	4.47	San Mateo, Hayward	Foster City - Hayward	Corridor Improvement- Class I	Potential San Mateo County project to install Class I facility on SR 92 between Foster City and Hayward	$$$$	TOP
SMSC-35-C01	San Mateo,Santa Clara	35	10.23	14.03	Unincorporated	Hwy 35 (Sky Londa) - Hwy 39	Corridor Improvement- Shoulder improvements	Corridor improvement to increase safety for people biking on this popular route.	$$	MID
SMSC-82-C01	Santa Clara,San Mateo	82	21.84	26.36	Palo Alto	Sand Hill Rd - San Antonio Rd	Corridor Improvement- Class IV	Provide Class IV bikeway in Palo Alto from Sand Hill Rd to San Antonio Rd	$$$	TOP

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Sol-113-C01	Solano	113	13.1	13.35		Binghamton Rd	Corridor Improvement- Class I	STA-planned Class III bicycle route on Hawkins Road from Pitt School Road to SR-113	$$	LOW
Sol-113-C02	Solano	113	17.13	17.38		Midway Rd	Corridor Improvement- Class II	STA-planned Class II bicycle lanes on Midway Road from Timm Road to Pedrick Road	$	LOW
Sol-113-C03	Solano	113	10.9	11.15		Maine Prairie Rd	Corridor Improvement- Class II	STA-planned Class II bicycle lanes on Maine Prairie Road from SR 113 to Pedrick Road	$	LOW
Sol-113-C04	Solano	113	0.12	0.12	0	Rio Vista Rd (Hwy 12) - Parkway Blvd	Corridor Improvement- Shoulder improvements	STA-planned Class III bicycle route on SR-113 from Dixon City Limit to SR-12	$$	LOW
Sol-12-C01	Solano	12	0.04	22.73		Azevedo Rd - Rio Vista Bridge	Corridor Improvement- Class I	STA-planned Class I shared use path on SR-12 from Azevedo Road to the Rio Vista Bridge	$$$	LOW
Sol-12-C02	Solano	12	0.16	2.43		Red Top Rd - Solona/Napa County border	Corridor Improvement- Class IIB	STA-planned Class II bicycle lanes as part of SR 12 Jameson Canyon Road widening project. Explore buffered bike lanes.	$$	LOW
Sol-12-C03	Solano	12	0.13	7.49	Suisun City	N Front Rd - Walters Rd	Corridor Improvement- Class II	STA-planned Class II bicycle lanes or Class III bicycle route	$$$	LOW
Sol-12-C04	Solano	12	25.73	25.73	Rio Vista	Hillside Ter - New Front St	Corridor Improvement- Class IV	City of Rio Vista is considering Class II or IV bikewas as part of roadway rehabilitation project on Route 12	$$	LOW
Sol-12-C05	Solano	12	0.24	2.56		I-80 - Sonoma County line	Corridor Improvement- Class I	Planned STA study: Class I shared use path alignment along SR 12	$$$	LOW
Sol-12-X01	Solano	12	23.77		Rio Vista	Summerset Rd	Intersection Improvement at controlled intersection	STA-planned Class II bike lanes on Summerset Road from SR 12 to Liberty Island Road	$$	LOW
Sol-12-X02	Solano	12	6.29		Suisun City	McCoy Creek	New separated crossing	STA-planned Class I shared use path along McCoy Creek passing under SR-12	$$$$	TOP
Sol-12-X03	Solano	12	5.14		Suisun City	Marina Blvd	Intersection Improvement at controlled intersection	Explore reopening crosswalk across Hwy 12 on west leg of intersection and provide bike signals or other crossing improvements to better connect Class I shared use paths on different intersection corners.	$	TOP
Sol-12-X04	Solano	12	3.21		Fairfield	Beck Ave	Intersection Improvement at controlled intersection	Explore removing slip lanes at intersection to provide improved crossing for bikes	$	TOP
Sol-12-X05	Solano	12	5.77		Fairfield	Sunset Ave	Intersection Improvement at controlled intersection	Provide enhanced connection between Grizzly Island Trail and Central County Bikeway on either side of Hwy 12	$	TOP
Sol-29,37-X01	Solano	29,37	4.89		Vallejo	Hwy 37	Interchange reconstruction - ramps only- Class IIB	Explore reconfiguring interchange to consolidate ramps, eliminate high-speed ramp entries, and provide dedicated bicycle space along SR 37	$$$$	TOP

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Sol-29-C01	Solano	29	0.25	2.02	Vallejo	Curtola Pkwy - Maritime Academy Dr	Corridor Improvement- Class II	STA-planned Class II bike lanes on SR-29 from Curtola Parkway to Maritime Academy Drive. Bay Trail recommends Class I if possible	$	MID
Sol-29-C02	Solano	29	2.47	2.47	Vallejo	Louisiana St - Carolina St	Corridor Improvement- Class II	Explore road diet on Sonoma Boulevard to provide dedicated bicycle facilities.	$	MID
Sol-29-X01	Solano	29	2.27		Vallejo	Georgia St	Intersection Improvement at controlled intersection	STA-planned Class II bike lanes on Georgia Street from Columbus Parkway to Mare Island Way	$	LOW
Sol-29-X02	Solano	29	4.76		Vallejo	Lewis Brown Rd	Intersection Improvement at controlled intersection	Provide safer bicycle connection thru interchange - consider removing slip lanes, a protected intersection or other similar improvement.	$	TOP
Sol-37-C01	Solano	37	8.67	8.67	Vallejo	Wilson Ave - Sacramento St	Corridor Improvement- Class I	Provide Class I shared use path to connect the existing trail at White Slough Path with trail along Mare Island Strait.	$$	TOP
Sol-37-X01	Solano	37	8.55		Vallejo	Sacramento St	Minor interchange improvements (signage and striping)- Class II	STA-Planned Class II bike lanes on Sacramento Street from Valle Vista Street to SR-37	$	TOP
Sol-37-X02	Solano	37	10.97		Vallejo	Fairgrounds Dr	Minor interchange improvements (signage and striping)- Class II	Explore removing slip lanes for on ramps and other bicycle improvements	$	TOP
Sol-680-C01	Solano	680	0.99	1.24	Benicia	Industrial Way	Corridor Improvement- Class II	Improve crossing under I-680 to support City of Benicia-planned Class I path on Industrial Way from Lake Herman Road to Park Road and on Park Road from E. 2nd to Industrial Way	$	LOW
Sol-680-X01	Solano	680	2.88		Benicia	Lake Herman Rd	Minor interchange improvements (signage and striping)- Class II	STA-planned Class II bike lanes on Lake Herman Road from Industrial Way to the Benicia City Limit. Project is developer-funded. Class III facilities may be provided in short-term.	$	LOW
Sol-780-X01	Solano	780	6.65			Home Acres Ave	New separated crossing	STA-planned replacement of existing bike/ped overcrossing structure.	$$$$	TOP
Sol-780-X02	Solano	780	7.44		Vallejo	Lemon St	Intersection Improvement at controlled intersection	Explore intersection improvements including bicyle pockets and removing free right turn slip lanes. Consider creating cut-through to access Reis Avenue cul-de-sac at the intersection.	$$	MID
Sol-780-X03	Solano	780	1.61		Benicia	5th St	Minor interchange improvements (signage and striping)- Class II	Explore installing bicycle facilities on 5th Street through I-780 interchange	$	LOW
Sol-80-C01	Solano	80	0.81	0.81	Vallejo	Maritime Academy Dr	Corridor Improvement- Class I	Install Class I path to connect the Bay Area Ridge Trail, San Francisco Bay Trail, and Carquinez Strait Loop Trail.	$$	MID

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Num	County	Route	BPM	EPM	City	Location	Improvement Type	Description	Cost	Tier
Sol-80-X01	Solano	80	36.9		Dixon	Pitt School Rd	Minor interchange improvements (signage and striping)- Class II	Explore bike facility installation on Pitt School Road over I-80 to connect to continuous Class II bike lanes on Pitt School Road between Vacaville and Dixon	$	LOW
Sol-80-X02	Solano	80	26.59		Vacaville	Elmira Rd	New separated crossing	STA-planned Ulatis Creek Trail segment connecting Ulatis Drive to Leisure Town Road. Phase I is Class I path along creek alignment; Phase II is bicycle facilities on Allison Drive to I-80. Cost estimate around 1 million.	$$$$	MID
Sol-80-X03	Solano	80	11.4		Fairfield	Red Top Rd	Minor interchange improvements (signage and striping)- Class II	Explore improved bicycle facilities at interchange.	$$	LOW
Sol-80-X04	Solano	80	29.85		Vacaville	Leisure Town Rd	Interchange reconstruction - ramps only- Class I	STA-planned Class I shared use path on Leisure Town Road from I-80 to Ulatis Creek	$$$$	LOW
Sol-80-X05	Solano	80	8.1		Vallejo	American Canyon Rd	Minor interchange improvements (signage and striping)- Class II	STA-planned Class II bike lanes on McGary Road from Vallejo City Limits to Hiddenbrooke Parkway	$	LOW
Sol-80-X06	Solano	80	2.87		Vallejo	Georgia ST	Minor interchange improvements (signage and striping)- Class II	Consider minor ramp reconfiguratoin to eliminate slip lanes	$	TOP
Sol-80-X07	Solano	80	3.49		Vallejo	Tennessee St	Interchange reconstruction - ramps only- Class II	Explore reconfiguring to diamond interchange, and providing bicycle facility on Tennessee Street across the freeway	$$$$	TOP
Sol-80-X08	Solano	80	1.25		Vallejo	Maritime Academy Dr	New separated crossing	STA is working with Caltrans to include Class I undercrossing at the SR-29 off ramp when the bridge is replaced	$$$$	MID
Sol-80-X09	Solano	80	19.15		Fairfield	Air Base Pkwy	Interchange reconstruction - ramps only- Class IV	Complete gap in existing bike lanes across interchange. Reconstruct and square up ramps. Explore installing Class IV separated bikeway if possible becaues of high speeds and wide ROW thru interchange.	$$$$	TOP
Sol-80-X10	Solano	80	17.9		Fairfield	Travis Blvd	Interchange reconstruction - ramps only- Class II	Install bike lanes across interchange to connect with bike lanes on Travis Boulevard. Reconstruct and square up ramps.	$$$$	TOP
Sol-80-X11	Solano	80	17.19		Fairfield	W Texas St	Minor interchange improvements (signage and striping)- Class II	Provide bike signal and phase for Linear Bike Trail movement through interchange area. Coordinate with City of Fairfield's West Texas Gateway Project.	$	MID
Sol-80-X12	Solano	80	25.27		Vacaville	Alamo Dr	Interchange reconstruction - ramps only- Class II	Explore reconstructing ramps to and from northbound I-80	$$$$	TOP

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Num	County	Route	BPM	EPM	City	Location	Improvement Type	Description	Cost	Tier
Sol-80-X13	Solano	80	27.14		Vacaville	Allison Dr	Minor interchange improvements (signage and striping)- Class II	Improve bicycle accomodation at interchange on Allison Drive	$	MID
Sol-80-X14	Solano	80	3.22		Vallejo	Solano Ave	Minor interchange improvements (signage and striping)- Class II	Improve bicycle accomodation at interchange on Solano Avenue	$	TOP
Sol-84-C01	Solano	84	2.67	13.67		Solano/Yolo County line to Ryer Road/SR-84 Ferry	Corridor Improvement-Shoulder improvements	STA-planned Class II bicycle route on SR-84 from Solano/Yolo County line to Ryer Road/SR-84 Ferry	$$	LOW
Sol-84-C02	Solano	84	2.42	2.42	Rio Vista	Hwy 12 - Ryer Rd Ferry	Corridor Improvement-Shoulder improvements	STA-planned Class III bicycle route on SR-84 from SR-84/River Road Ferry to Front Street	$	LOW

Num	County	Route	BPM	EPM	City	Location	Improvement Type	Description	Cost	Tier
Son-101-X01	Sonoma	101	20.1		Santa Rosa	3rd St	Minor interchange improvements (signage and striping)- Class IIB		$	MID
Son-101-X02	Sonoma	101	18.49		Santa Rosa	Hearn Ave	Minor interchange improvements (signage and striping)- Class II	Install bike lanes on Hearn Avenue across US-101 interchange as proposed in Sonoma County Bicycle and Pedestrian Plan (currently in design)	$	TOP
Son-101-X03	Sonoma	101	21.74		Santa Rosa	Steele Ln	Minor interchange improvements (signage and striping)- Class IV	Explore low stress bicycle facility and bike signal in are with significant traffic and multiple turn lanes	$$	TOP
Son-101-X04	Sonoma	101	22.51		Santa Rosa	Bicentennial Way	Interchange reconstruction - ramps only- Class II	Explore replacing free flow off-ramps from 101 NB with single, signalized crossing. Potentially signalize 101 SB on ramps	$$$$	TOP
Son-101-X05	Sonoma	101	13.51		Cotati, Rohnert Park	Copeland Creek	New separated crossing	Explore separated crossing to connect nearby existing and planned creek trails	$$$$	TOP
Son-101-X06	Sonoma	101	14.9		Rohnert Park	Golf Course Dr	Minor interchange improvements (signage and striping)- Class II	Install low stress bicycle facilities through interchange on Commerce Boulevard. Consider Class II buffered bike lanes if possible. Consider bicycle signal.	$	MID
Son-101-X07	Sonoma	101	35.03		Cotati	Gravenstein Hwy/Hwy 116	Minor interchange improvements (signage and striping)- Class IV	Area has existing bike lanes through intersection. Explore reducing curb radii of on and off ramps	$$	TOP
Son-101-X08	Sonoma	101	12		Cotati	W Sierra Ave	Minor interchange improvements (signage and striping)- Class II	Reduce curb radii and square up the existing ramps where they meet with W Sierra Ave to shorten crossing distance for bicyclists. Add stop sign on Sierra Ave at ramp entrances to eliminate free right movement	$	LOW
Son-101-X09	Sonoma	101	4.75		Petaluma	E Washington St	Minor interchange improvements (signage and striping)- Class IIB	Consider realigning NB 101 on ramp from west side of Washington to the T intersection of the NB 101 off ramp and eliminating the slip ramp. Consider bike signal phasing on e side of washington to allow bikes to get ahead of merging traffic.	$	LOW
Son-101-X10	Sonoma	101	3.25		Petaluma	Petalum Blvd S	New separated crossing	Install Class I path on existing grade under the US 101 Petaluma River Bridge on the north side of the river to contect Riverfront Development to the Petaluma Marina.	$$$$	LOW
Son-101-X11	Sonoma	101	4.54		Petaluma	McKenzie Dr	New separated crossing	Explore improving overcrossing with accessible approaches and improved lighting	$$$$	MID
Son-101-X12	Sonoma	101	30.69		Windsor	Arata Ln	Interchange reconstruction - full reconstruction- Class II	Reconstruct the US 101 interchange at Arata Ln to accommodate bike lanes. Provide sidewalks connecting to interchange (may be a local project)	$$$$	MID

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Num	County	Route	BPM	EPM	City	Location	Improvement Type	Description	Cost	Tier
Son-101-X13	Sonoma	101	29.37		Windsor	Old Redwood Hwy/Healdsburg Ave	New separated crossing	Provide separated bike/ped crossing of US 101 in Windsor at Old Redwood Highway	$$$$	TOP
Son-101-X14	Sonoma	101	27.62		Windsor	Shiloh Rd	Intersection Improvement at controlled intersection	Improve bicycle facilities on Shiloh Road through intersection.	$	TOP
Son-101-X15	Sonoma	101	26.11		Larkfield-Wikiup	Mark West Creek	New separated crossing	Proposed Mark West Creek Trail provides an east-west connection from Old Redwood Highway to the Santa Rosa Airport. Crossing below Airport Boulevard off-ramp and Highway 101.	$$$$	LOW
Son-101-X16	Sonoma	101	15.53			Santa Rosa Ave/Roberts Lake Rd	New separated crossing	Proposed Bellevue Creek Trail provides an east-west connection starting at Petaluma Hill Road and continues west to the proposed Laguna de Santa Rosa Trail. An overhead crossing of Hwy 101 is needed.	$$$$	MID
Son-101-X17	Sonoma	101	34.9		Healdsburg	Westside Rd	Minor interchange improvements (signage and striping)- Class II	Class III bike route as proposed in Sonoma County Bicycle and Pedestrian Plan	$	TOP
Son-101-X18	Sonoma	101	36.3		Healdsburg	Dry Creek Rd	Minor interchange improvements (signage and striping)- Class II		$	LOW
Son-101-X19	Sonoma	101	33.52		Healdsburg	Healdsburg Ave	Interchange reconstruction - ramps only- Class II	Explore minor ramp reconfiguration to square up off-ramps and on-ramps, remove slip lanes	$$$$	LOW
Son-101-X20	Sonoma	101	24.79		Larkfield-Wikiup	River Rd	Interchange reconstruction - ramps only- Class II	Improve bicycle facilities on Mark West Springs Road and River Road through interchange	$$$$	TOP
Son-101-X21	Sonoma	101	21.23		Santa Rosa	Bear Cub Way	New separated crossing	Build separated crossing over US-101 as proposed in Santa Rosa Project Study Report	$$$$	TOP
Son-101-X22	Sonoma	101	20.75		Santa Rosa	College Ave	Minor interchange improvements (signage and striping)- Class II	Explore minor interchange improvements on College Avenue through the interchange	$	TOP
Son-101-X23	Sonoma	101	18.96		Santa Rosa	Colgan Ave	Interchange reconstruction - full reconstruction- Class I	Connect proposed Colgan Creek trail to bike lanes. Reconstruct offset interchange or provide separate bike/ped overcrossing consistent with Sonoma County Bicycle and Pedestrian Plan	$$$$	TOP
Son-101-X24	Sonoma	101	16.53			Todd Rd	Minor interchange improvements (signage and striping)- Class II	Provide low stress crossing on existing bridge or on new facility. Provide striping on bridge approach	$	TOP
Son-101-X25	Sonoma	101	13.88		Rohnert Park	Rohnert Park Expy	Interchange reconstruction - ramps only- Class II	Minor ramp reconfiguration to square up the ramps and reduce conflicts with bicyclists.	$$$$	TOP
Son-101-X26	Sonoma	101	38.57	0		Lytton Springs Rd	Minor interchange improvements (signage and striping)- Class II	Provide signage, conflict marking, and bike lanes on Lytton Springs Rd thru US 101 interchange.	$	LOW

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Num	County	Route	BPM	EPM	City	Location	Improvement Type	Description	Cost	Tier
Son-101-X27	Sonoma	101	41.44			0 Geyserville Ave	Minor interchange improvements (signage and striping)- Class II	Provide signage, striping, and bike lanes on Geyserville Ave thru US 101 interchange.	$	LOW
Son-101-X28	Sonoma	101	43.36			0 Canyon Rd	Minor interchange improvements (signage and striping)- Class II	Provide signage, striping, and bike lanes on Canyon Rd thru US 101 interchange	$	LOW
Son-101-X29	Sonoma	101	49.07			0 Theresa Dr	Minor interchange improvements (signage and striping)- Class II	Provide signage, striping, and bike lanes on Theresa Dr thru US 101 interchange	$	LOW
Son-116-C01	Sonoma	116	34.9	35.03	Cotati	Redwood Dr	Corridor Improvement- Class IV	Provide continuous bicycle facility from Redwood Drive through US-101 interchange area	$	MID
Son-116-C02	Sonoma	116	35.04	37.77	Petaluma	US 101 - Browns Ln	Corridor Improvement- Class IIB	Install Class IV separated bikeway on Lakeville Highway	$$	MID
Son-116-C03	Sonoma	116	9.23	33.6	Sebastopol	Sebastapol Ave - Stony Point Rd	Corridor Improvement- Class I	Petaluma Sebastopol Trail Feasibility Study is evaluating a Class I path connecting Sebastopol and Petaluma, primarily along Hwy 116.	$$$$	TOP
Son-116-C04	Sonoma	116	0	0	Guerneville, Forestville	Hwy 1 - River Rd	Corridor Improvement- Class I	Proposed Russian River Trail from the Sonoma County Bicycle and Pedestrian Plan alon gHwy Hwy 116 from Hwy 1 to River Road. Proposed trail continues along the river outside Caltrans ROW	$$$$	MID
Son-116-C05	Sonoma	116	19.61	19.61	Forestville	Pajaro Ln - Mirabel Rd	Corridor Improvement- Class I	Proposed West County Trail extension from Pajaro Lane to Mirabel Road requies improvements to Hwy 116 between Mirabel Road and 2nd Street in downtown Forestville, including roundabout at the intersection of Mirabel Road and Hwy 116.	$$	TOP
Son-116-C06	Sonoma	116	12.28	25.28	Guerneville	Drake Rd - Occidental Rd	Corridor Improvement- Class II	Proposed Class II bike lanes in the Sonoma County Bicycle and Pedestrian Plan (2010)	$$	MID
Son-116-C07	Sonoma	116	34.21	34.21	Sebastopol, Cotati	Cooper Rd - Madrone Ave	Corridor Improvement- Class II	Provide bike lanes on Hwy 116 from Sebastopol city limits to Cotati city limits	$$	LOW
Son-116-C08	Sonoma	116	25.16	25.16	Guerneville, Sebastapol	River Rd - Mill Station Rd	Corridor Improvement- Class II	Provide bike lanes on Hwy 116 from Guernville to Sebastapol. Alternate (short term) for proposed Class I.	$$	LOW
Son-116-C09	Sonoma	116	0	12.28	Guerneville	Hwy 1 - River Rd	Corridor Improvement- Class II	Provide bike lanes on Hwy 116 from Hwy 1 to Guerneville. Alternate (short term) to proposed Class I	$$	LOW
Son-121-C01	Sonoma	121	9.16	9.16		8th St E - Burndale Rd	Corridor Improvement- Class I	The Sonoma County Bay Trail Corridor Plan identified SF Bay Trail along Hwy 12/121 between 8th Street E and Burndale Road.	$$	MID

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Num	County	Route	BPM	EPM	City	Location	Improvement Type	Description	Cost	Tier
Son-121-C02	Sonoma	121	0	46.73		Redwood Hwy/US 101 - Sears Pt Rd/Hwy 37	Corridor Improvement- Class II	Class II bike lanes as proposed in Sonoma County Bicycle and Pedestrian Plan	$$	MID
Son-128-C01	Sonoma	128	5	24.43	Geyserville, Unincorporated	Napa/Sonoma County line - Geyserville Ave	Corridor Improvement- Class I	Provide a Class I path along Hwy 128 (extension of proposed Vine Trail) from Napa/Sonoma County border to Geyserville	$$$$	LOW
Son-12-C01	Sonoma	12	7.38	41.36		Napa Rd - Farmers Ln (turn in Hwy 12)	Corridor Improvement- Class II	Class II bike lanes as proposed in Sonoma County Bicycle and Pedestrian Plan	$$$	MID
Son-12-C02	Sonoma	12	21.22	21.22	Santa Rosa, Fetters Hot Springs-Agua Caliente	Melita Rd - Auga Caliente Rd	Corridor Improvement- Class I	Sonoma Valley Trail Feasibility Study recommends a separated Class I bike path along Hwy 12 between Melita Road and Agua Caliente Road.	$$$$	TOP
Son-12-X01	Sonoma	12	16.26		Santa Rosa	Santa Rosa Ave	Minor interchange improvements (signage and striping)- Class II	Explore installing low stress bicycle facility through interchange	$	MID
Son-12-X02	Sonoma	12	16.94		Santa Rosa	Brookwood Ave	Minor interchange improvements (signage and striping)- Class IIB	Explore installing low stress bicycle facility through interchange	$	MID
Son-12-X03	Sonoma	12	9.69		Sebastopol	Laguna de Santa Rosa	New separated crossing	Improved crossing below the Highway 12 bridge that crosses the Laguna de Santa Rosa connecting the Laguna de Santa Rosa Trail to the Joe Rodota Trail.	$$$$	LOW
Son-1-C01	Sonoma	1	9.6	9.6	Bodega Bay	W King Trail - Mendocino County border	Corridor Improvement- Class I	The Sonoma County Local Coastal Plan and County Bicycle and Pedestrian Plan identifies the Coastal Trail and the Bodega Bay Trail that follows the California coastline.	$$$$	MID
Son-1-C02	Sonoma	1	0.21	20.26	Jenner	Willow Creek Rd - Valley Ford Rd	Corridor Improvement- Class II	Class II bike lanes as proposed in Sonoma County Bicycle and Pedestrian Plan	$$$	LOW
SoSoMa-37-C01	Solano,Sonoma,Marin	37	4.87	11.2	Novato, Vallejo	US 101 - Hwy 29	Corridor Improvement- Class I	Explore bicycle acess along SR-37 as part of the SR-37 Transportation and Sea Level Rise Corridor Improvement Plan.	$$$$	MID

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Caltrans District 4 Bike Plan

for the San Francisco Bay Area

APPENDIX B

Vision, Goals, Objectives, and Strategies

2018

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MEMORANDUM

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Oakland, CA 94607
(510) 540-5008
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To: Sergio Ruiz, Caltrans District 4

From: Hugh Louch and Dara O'Byrne, Alta Planning + Design

Date: July 25, 2017

Re: Caltrans District 4 Bicycle Plan: Vision, Goals, & Objectives

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The Caltrans District 4 Bicycle Plan Vision, Goals, & Objectives will build on the California State Bicycle and Pedestrian Plan – *Toward an Active California*. The District 4 Bicycle Plan complements the statewide plan, as well as local and regional plans being developed across the nine county Bay Area.

This memo describes:

- The overall purpose of the District 4 Bicycle Plan
- The framework of vision, goals, objectives, and strategies developed as part of the California State Bicycle and Pedestrian Plan
- Several areas of emphasis within that framework for the District plan.

District 4 Bicycle Plan Purpose

The following purpose statement will guide the work conducted on the District 4 Bicycle Plan:

> **The Plan will identify and prioritize investments to improve bicycling on and across the State-owned transportation network. This Plan complements and builds on statewide, regional and local planning efforts to help create a connected, comfortable, and safer bicycle network for the Bay Area.**

California State Bicycle and Pedestrian Plan Framework

The District 4 Bicycle Plan is being developed within the framework of *Toward an Active California*, the California State Bicycle and Pedestrian Plan. This framework includes an overall vision, goals, objectives, and strategies that are intended to shape the statewide policy direction in California. The District 4 Bicycle Plan adopts this framework. The following section identifies specific emphasis areas for the District plan.

Vision

By 2040, people in California of all ages, abilities, and incomes can safely, conveniently, and comfortably walk and bicycle for their everyday transportation needs.

Goals

The goals for *Toward an Active California* were adopted from the multimodal California Transportation Plan (CTP), adopted in 2016, providing consistency with state transportation planning. Specific CTP/*Toward an Active California* goals include:

1. Improve multimodal mobility and accessibility for all people
2. Preserve the multimodal transportation system
3. Support a vibrant economy
4. Foster livable and healthy communities and promote social equity
5. Improve public safety and security
6. Practice environmental stewardship

Objectives

Toward an Active California includes four objectives:

- Safety – Reduce the number, rate, and severity of bicycle and pedestrian involved collisions
- Mobility - Increase walking and bicycling in California
- Preservation - Maintain a high quality active transportation system
- Social Equity - Invest resources in communities that are most dependent on active transportation and transit

Strategies

The following strategies were identified in *Toward an Active California*. These strategies are in the process of being finalized and may change somewhat before the plan is finalized.

Safety

- S1: Safer Streets & Crossings – Address safety of vulnerable users in roadway design and operations
- S2: Education - Provide consistent, accessible, and universal education about the rights and responsibilities of all roadway users
- S3: Safety Data - Invest in the quality, completeness, timeliness, and availability of data on bicycle and pedestrian collisions
- S4: Enforcement - Focus state and local enforcement of safety laws on highest risk behaviors by all road users

Mobility

- M1: Connected and Comfortable Network - Develop local and regional networks of high-quality bicycle and pedestrian facilities for all ages and abilities
- M2: Multimodal Access – Integrate bicycle and pedestrian needs in planning and design of multimodal transportation systems and services
- M3: Efficient Land Use and Development – Support regional and state efforts to integrate land use and transportation planning to maximize the effectiveness of active transportation investments
- M4: Network and Travel Data - Develop consistent, high quality data on bicycle and pedestrian travel and facilities
- M5: Statewide & Regional Trails - Support low-stress or physically separated pedestrian and bicycle trail routes of statewide or regional significance for tourism, recreation, and utilitarian transportation
- M6: Encouragement - Promote bicycling and walking for everyday transportation, recreation, improved health, and active living

Preservation

- P1: Quality of Condition - Establish and meet an expected quality of condition for bicycle and pedestrian infrastructure
- P2: Program Integration - Pursue internal and external partnerships to address bicycle and pedestrian needs in maintenance and preservation activities

Social Equity

- E1: Community Support - Strengthen engagement with disadvantaged communities by proactively seeking input on needs and providing technical guidance
- E2: Equity Lens - Address social equity when implementing all strategies from this plan
- E3: Access to Funding - Provide disadvantaged communities with the opportunity to participate in active transportation funding programs

Emphasis Areas for District 4 Bicycle Plan

While the District 4 Bicycle Plan will build upon all of the strategies identified in *Toward an Active California*, there are areas that are particularly important to District 4 that deserve emphasis. These areas of emphasis can be incorporated into strategies or actions throughout the plan and will help inform implementation priorities. Four emphasis areas include:

1. **Prioritize safety and comfort in creating complete bicycle networks.**
   Safety is a high priority for community members, local agencies, regional agencies, and the state, so safety and comfort of the bicycle network will be prioritized in the District 4 Bicycle Plan. The plan will include safety criteria for identification of needs and prioritization of projects. These criteria will identify areas where higher levels of fatalities or injuries have occurred, along with a systemic safety analysis for areas that may not currently be used by many bicyclists. Development of safe and comfortable bicycle networks will require integration with internal programs and partnerships with local jurisdictions. This Emphasis Area is particularly relevant to Strategies S2, M1, M3, P1, and P2.
2. **Design safer and more intuitive highway crossings and interchanges**
   State highways can act as barriers to the overall bicycle network, often separating communities. The District 4 plan will include an equity-focused approach to identifying opportunities for improved crossings, working with local communities and agencies to plan, design, and implement improved crossings and interchanges. These improvements will include both interim improvements to existing interchanges and crossings and longer term solutions that may require more capital investment. This Emphasis Area is particularly relevant to Strategies S2, M1, and E2.
3. **Streamline and communicate the process for local agencies to engage with Caltrans and for Caltrans to engage with local communities**
   From early planning processes through project implementation, local agencies and Caltrans will benefit from a clear, predictable, and transparent process for engagement and collaboration, ultimately resulting in better projects. By streamlining and communicating a clear and predictable process, local agency staff can understand who within Caltrans to engage and at what times in the process. The Plan will include information to help establish consistent checkpoints within Caltrans' processes to engage local agencies and communities within project timelines. The Plan will also explore developing guidance on how Caltrans can

support local agencies on placemaking initiatives in coordination with transportation projects. This Emphasis Area is relevant to all of the strategies listed above.

4. **Promote innovation through design and testing new bicycle treatments**

   Many Bay Area communities are testing newer bicycle facility designs through pilot projects and experimental treatments in order to gauge their efficacy and to solicit feedback from the public. Caltrans District 4 can build off this energy through collaborations with local agencies to advance and test innovative designs on the State highway system. In order to do this, District 4 can work more closely or partner with local agencies and guide them through the permitting process, as outlined in Emphasis Area 3, for pilot projects that would require Caltrans District 4 approval. This Emphasis Area is particularly relevant to Strategy M3.

5. **Increase investment in bicycle facilities on state highways.**

   A key role of the District 4 plan will be to identify specific projects that can be incorporated into various Caltrans programs, including both routine maintenance projects funded by SHOPP and bigger picture projects funded by other programs. Pursue opportunities to incorporate bicycle improvements with regular resurfacing projects that can be done without significantly impacting the costs of projects, including adding bike lanes, colored pavement, and other low cost safety improvements for bicyclists. Also identify bigger picture projects for implementation through various funding mechanisms (ATP, STP, HSIP) that may require separate or larger projects. This Emphasis Area is particularly relevant to Strategy M1.

6. **Incorporate social equity into the prioritization process for the District 4 plan.**

   Equity is one of the four objectives of *Toward an Active California*, including recognizing the importance of considering equity analysis within active transportation planning efforts like the District 4 Bike Plan. The District 4 Bike Plan will include equity as a prioritization criteria within the project prioritization process. This Emphasis Area is particularly relevant to the Social Equity objective and in Strategy M1 and S2.

Caltrans District 4 Bike Plan

for the San Francisco Bay Area

APPENDIX C

Public Outreach Summary

2018

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CALTRANS DISTRICT 4

Bike Plan

OUTREACH SUMMARY

Caltrans District 4 Bike Plan Outreach

The California District 4 Bike Plan (Plan) identifies and prioritizes investments to improve bicycling on and across the State-owned transportation network. District 4 includes Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma counties. This Plan complements and builds on statewide, regional, and local planning efforts to help create a connected, comfortable, and safer bicycle network for the Bay Area.

Caltrans sought MIG's assistance in designing and facilitating an inclusive outreach process with the goal of collecting input from a broad cross-section of Bay Area communities. Using a variety of dynamic tools and methods, Caltrans gathered robust public and partner agency input on bicycling needs, priorities and recommended improvements.

As a result, the Plan – the first of its kind for the Bay Area region- includes bicycle improvements that reflect local and stakeholder priorities.

Focus Group participants from Cycles of Change at The Bikery in Oakland

Community Outreach by the Numbers

3,498
Survey Responses

6
Community Workshops

240+
Workshop Attendees

6
Focus Groups

5
Technical Advisory Commitee Meetings

Public Engagement Tools

Engagement with Traditionally Under-represented Communities

Caltrans hosted six focus groups across the Bay Area to collect targeted input from diverse, low-income residents on their experiences biking in their community. Caltrans worked with local community-based organizations to recruit interested participants. Three of the six focus groups were conducted in Spanish.

Technical Advisory Committee

Caltrans established a Technical Advisory Committee (TAC), comprised of stakeholders and public agency representatives, from all nine Bay Area counties. The TAC provided strategic guidance and recommendations on the technical analysis and community outreach.

Online Survey

An interactive mapping survey collected public input on bicycle needs and barriers across the Bay Area. Over 3,490 respondents answered questions and provided 20,157 map "pins" to indicate where they currently bike along or across the State transportation network, potential barriers to bicycling, where they would be interested in biking, and related infrastructure improvements.

Community Workshops & Webinar

Caltrans hosted two rounds of workshops and a webinar, one in May 2017 and again in November 2017. The first workshops introduced the planning process and gathered input for the bicycle needs analysis. The second round of workshops informed participants about the project prioritization process and solicited feedback on a draft list of project priorities by county.

Online Project Comment Tools

The Project Team developed two web tools during the process. The tools allowed participants to identify projects for potential evaluation, and then prioritize those projects. Both tools significantly expanded the reach of the public engagement program.

Success Factors

- **High Touch/ High Tech Strategy** to engage participants using a creative mix of in-person and online outreach strategies
- **Partnerships with Community-Based Organizations** to engage and recruit diverse, low-income bicyclists for focus groups
- **Engagement of Traditionally Under-Represented Community** based on race, ethnicity and income
- **Multilayered Process** of robust community and agency partner engagement
- **Use of Interactive Web-Based Tools** to reach more participants and collect geo-specific input

Focus Group participants from Rich City Rides in Richmond

Community workshop at the West Oakland Youth Center in Oakland

Caltrans District 4 Bicycle Plan
Summary of Survey Results

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June 2017

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Introduction

The Caltrans District 4 Bicycle Plan will identify and prioritize investments to improve bicycling on and across the State-owned transportation network. Through this planning process, Caltrans has an opportunity to develop bicycle facilities that are safe, comfortable and convenient.

The State transportation network, owned and operated by Caltrans, includes more than 700 miles of freeways and expressways and over 1500 miles of non-freeway State highways throughout the Bay Area region. While cities and other local jurisdictions have responsibility for many more streets and roads, this Bicycle Plan will address barriers to bicyclists on and across State highways that are typically higher speed and have higher volumes of automobile traffic.

Caltrans conducted a survey to collect public input on bicycle needs and issues across the Bay Area and recommendations to address existing barriers. This report summarizes the key findings from the online interactive mapping survey implemented by MIG, Inc. The interactive map and survey interface provided an opportunity for bicyclists and others to share their on-the-ground knowledge about mobility, barriers and safety on and across the State-owned transportation network. A total of 4,721 people visited the survey between February and June 2017.

Key Themes

The following overall trends emerged from the survey analysis:

- The majority of respondents live in the same county in which they most frequently ride bicycles.
- Collectively, respondents report that they cross or travel along nearly the entire State-owned transportation network in District 4, from Cloverdale at the north end and south all the way to Gilroy.
- When asked where they wanted to cross or travel along the State-owned transportation network, respondents selected locations adjacent to the San Francisco Bay, especially along the Bayshore Freeway and over the San Francisco - Oakland Bay Bridge.
- Frequently mentioned safety concerns highlighted by respondents include heavy traffic, street crossings and intersections, motorists, the absence of dedicated bike lanes and the speed of traffic.
- Dedicated bike lanes, paths and/or wider shoulders were consistently identified as the improvements that respondents would most like to see.

Summary Organization

The analysis of survey results is divided into five sections:

I. About the Survey Tool
II. Outreach Methodology
III. Overview of Survey Responses
IV. Key Findings
V. Survey Participant Profile

Most of the survey results are summarized across the entire District 4, with targeted analysis for findings within individual counties. This dataset can be used for deeper analysis of needs and to inform specific projects or recommendations.

A copy of the survey is included in Appendix A. Raw survey data is available as an Excel file the Caltrans District 4 Bicycle Plan website.

I. About the Survey Tool

The interactive map is a web-based application developed by Mapita, a spinoff of a research group at Aalto University in Helsinki, Finland, for use in social science research regarding the quality of environments and specific ideas for improvements. Following extensive testing of the technology and methodology, Mapita partnered with MIG, Inc. to make this tool available to enrich community input methods in North America.

This tool allows participants to identify and reference specific geographic locations when answering a wide range of questions. Answers to questions are marked with "pins" directly onto an online map. More traditional survey questions and open-ended questions follow, collecting more specific data about the "pinned" locations on the map. This approach allows for respondents to answer questions about places they know or care about the most. The tool is designed to be open access and represents a self-selecting sample of respondents (rather than a randomized sample). A copy of the survey is included in Appendix A.

II. Outreach Methodology

The Planning Team conducted a robust outreach effort to publicize the survey including e-blasts, targeted flyer distribution, news media articles, social media and outreach to key partners such as bicycle coalitions, school districts, community-based organizations, and established civic groups. The survey was made available in an online format.

To promote the survey, the Planning Team used the following outreach channels:

- Caltrans District 4 Bicycle Plan website
- Outreach through the Technical Advisory Committee (TAC)
- Announcements distributed through bicycle coalitions, transit agencies, and other partners
- Regular e-blasts to the District 4 Bicycle Plan list-serv
- Communications via Twitter and Facebook
- Survey promotions at popular community events (e.g., Bike to Work Day)
- Announcements at the District 4 Bicycle Plan workshops
- Targeted communications with local media outlets
- Flyer postings and distribution

III. Overview of Survey Responses

Although there were 4,721 visitors to the survey website, some respondents dropped out of the survey early and others chose to skip individual questions. Some did not answer any questions at all. A total of 3,498 respondents completed at least one question in the survey. Some questions provided opportunities to select multiple answers, resulting in total counts greater than the number of respondents. Where percentages are provided in the results, they are calculated based on the total number of respondents who provided answers to the particular question (n).

Respondents placed a total of 20,157 "pins" on the map to indicate where they bike in the District, where they would like to bike, the locations of barriers they experience, the locations of good bike facilities and the locations of desired improvements. For pin-based questions, the number of responses may vary widely because respondents could place as many pins as they wanted but were not required to provide open-ended comments.

To provide an "at-a-glance" view of the thousands of pins, some of the pin-based questions are summarized visually using a heat map. Colors on heat maps intensify (move from blue to red) as more points are stacked in that area.

IV. Key Findings

A. Live, Work, Bike

This series of questions asked in which counties respondents live, work and/or go to school. It also asked whether they ride a bicycle in the Bay Area and in which county they most frequently ride.

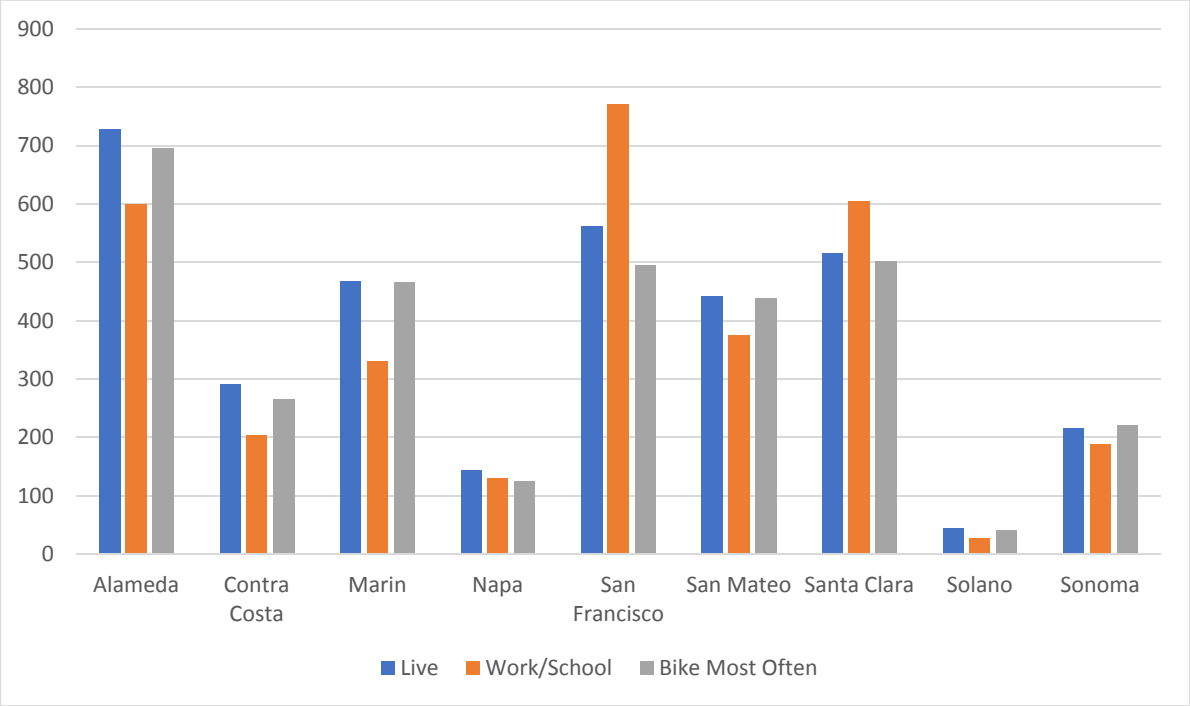
Overall, about half of the respondents indicated they live in Alameda, San Francisco or Santa Clara Counties, three of the four most populous counties in the Bay Area. Marin County was the fourth-most common answer to this question, although it has the second smallest population. Contra Costa County, on the other hand, has the third highest population in the Bay Area but accounted for the sixth-most respondents. Table 1 provides the number of respondents by county.

Table 1. County of Residence of Respondents

County	Count
Alameda	728
San Francisco	561
Santa Clara	516
Marin	468
San Mateo	441
Contra Costa	290
Sonoma	216
Napa	143
Solano	43

More than 90 percent of respondents indicated that they ride a bicycle in the Bay Area. Of the respondents who provided details about where they live and most frequently ride, more than half reported that they live and most frequently ride in Alameda, San Francisco and Santa Clara, the three top answers. The fourth most frequently selected was Marin County. This is notable since it has the second smallest county population. Figure 1 illustrates these responses by county.

Figure 1. Counties Where Respondents Live, Work/Attend School and Most Frequently Ride



Respondents overwhelmingly reported that they live and most frequently ride their bike in the same county, as shown in Table 2. For example, among respondents who live in Sonoma County, only two percent ride most often in another county. Among those who live in San Francisco, 15 percent ride most frequently in another county.

Table 2. Counties Where Respondents Live vs. Where They Ride Most Often

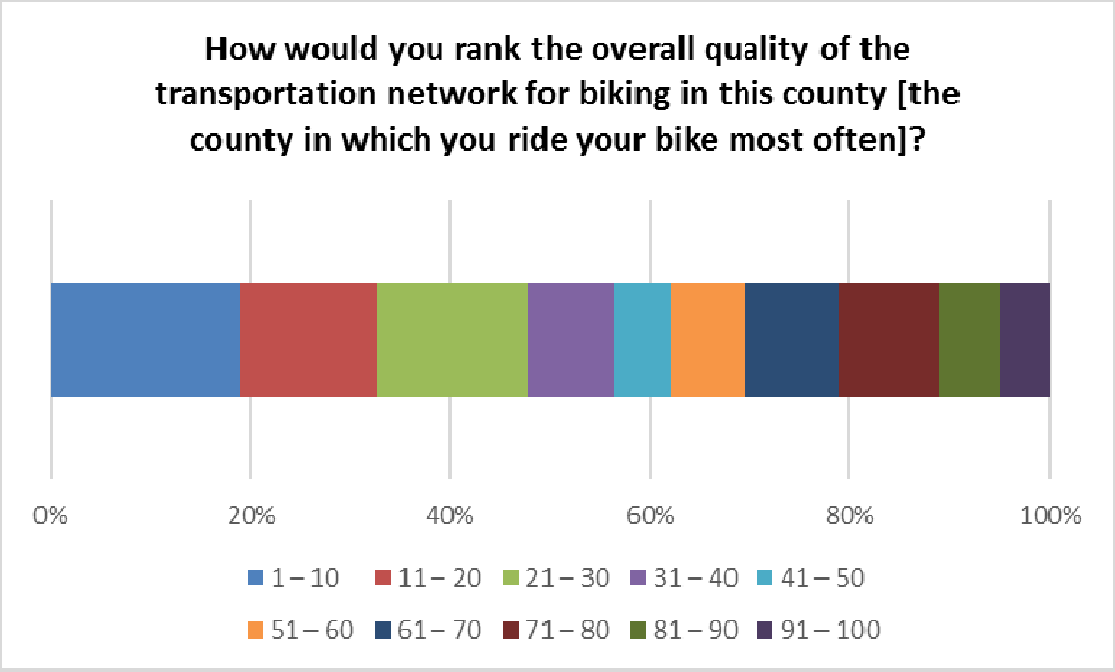
County of Residence / *County - Ride Most Often*	Alameda	Contra Costa	Marin	Napa	San Francisco	San Mateo	Santa Clara	Solano	Sonoma
Alameda	646	29	2	2	4	2	1	1	1
Contra Costa	17	236	1	1	3	2	1	1	0
Marin	3	0	406	3	44	1	1	1	1
Napa	0	2	0	120	1	0	0	0	1
San Francisco	11	3	3	2	451	16	1	0	0
San Mateo	5	1	0	1	25	355	45	1	0
Santa Clara	10	0	0	0	2	24	454	0	0
Solano	0	0	0	2	0	0	0	35	1
Sonoma	2	2	0	1	3	1	1	0	206
Totals	**728**	**290**	**468**	**143**	**561**	**441**	**516**	**43**	**216**
Out of County*	48	37	6	12	82	46	50	4	4
Out of County*	7%	13%	1%	8%	15%	10%	10%	9%	2%

*Note: "Out of County" is the number and percentage of respondents who most frequently ride outside of the county in which they reside. These numbers exclude respondents who did not provide both the county in which they live and the county to which they most often ride.

B. Issues and Opportunities

For questions about bicycling behavior and preferences, the State-owned transportation network was highlighted on the map. First, respondents ranked the overall quality of the county in which they ride most often on a sliding scale. A score of one indicates the worst ranking and a score of 100 indicates the best ranking. When rankings are unfiltered by county, nearly half of all respondents ranked the transportation network between one and 30, indicating low overall quality. Nearly one-fifth provided a ranking between one and 10, almost the same proportion that ranked the transportation network between 71 and 100. This again suggests negative views of the State-owned transportation network. These rankings are illustrated in Figure 2.

Figure 2. Quality Ranking of Transportation Network in County Where Respondents Most Frequently Ride (Entire System)

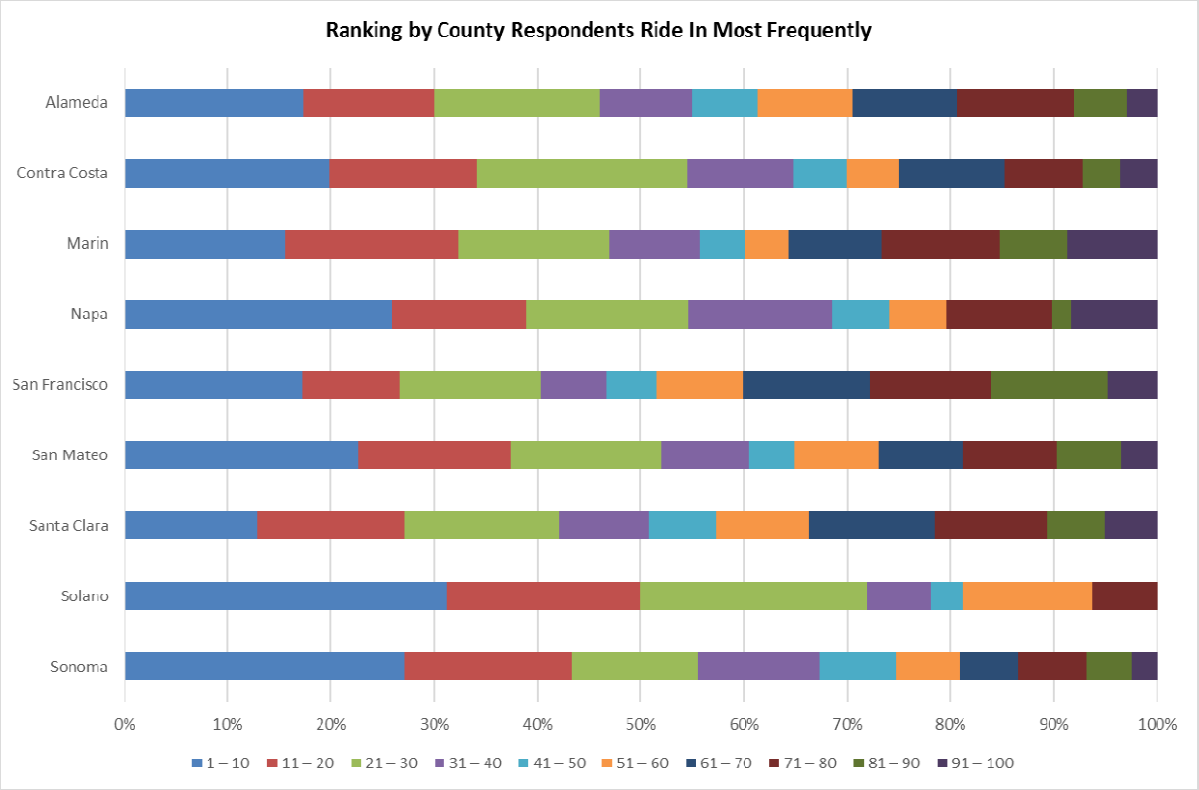


Note: Scores range from one ("Not Good") to 100 ("Very Good").

Filtering these results by county provides a more nuanced view of the perceived quality of the State-owned transportation network, particularly because respondents tend to live and most frequently ride in the same county. This suggests a greater degree of familiarity with the local transportation network. Figure 3, below, uses the same color scheme and scale as Figure 2 above but illustrates the quality rankings by county.

In all nine counties, at least 40 percent of respondents ranked the State-owned transportation network between one and 30. In five counties (San Mateo, Contra Costa, Napa, Sonoma and Solano), at least 50 percent of respondents ranked the transportation network at this low level. Conversely, in all nine counties, fewer than 30 percent of respondents ranked the county transportation networks between 71 and 100. This ranged from six percent of Solano respondents who rated the transportation network at this level to 28 percent in San Francisco County. In five counties (Sonoma, Contra Costa, Alameda, San Mateo and Napa), between 14 and 20 percent of respondents rated the transportation network at this level.

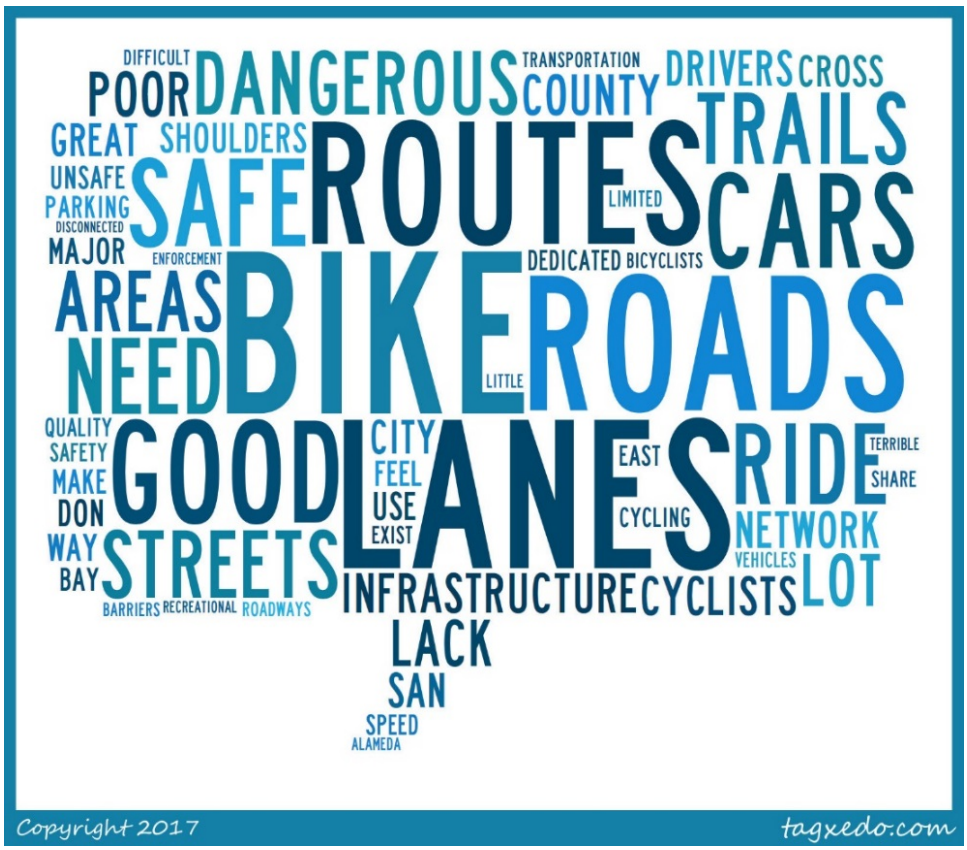
Figure 3. Quality Ranking of Transportation Network in County Where Respondents Most Frequently Ride (by County)



Note: Scores range from one ("Not Good") to 100 ("Very Good").

After ranking the State-owned transportation network for the county in which they ride most frequently, respondents were asked why they selected this ranking. Rankings were often associated with perceived safety, the presence or absence of dedicated lanes, routes, paths and trails for bicycles. Many respondents noted safety concerns, describing the transportation network with terms such as "dangerous, difficult, disconnected and terrible." Although fewer respondents ranked the State-owned transportation network highly, some did note sections that were of high quality, safe and well-connected. Figure 4 illustrates the words most frequently used by respondents in the rationales for their rankings.

Figure 4. Words Most Frequently Associated with the State-owned Transportation Network Rankings



Note: The word cloud only illustrates the frequency of word usage. It does not convey whether a word was used in a positive or negative manner. This context is provided in the narrative of this summary.

Riding Behavior and Preferences

The next questions asked respondents to identify where they cross and travel along the State-owned network and then also where they want to do so. As Figures 5-6 illustrate, respondents primarily cross or travel along the State-owned network near major population centers across all nine counties. On the other hand, respondents wish to cross or travel along the State-owned network in a more limited geography, primarily clustered in locations immediately adjacent to the San Francisco Bay. This is illustrated in Figure 7.

Respondents especially indicated their desire for a greater ability to travel along the State-owned networks over bridges. Figure 8 shows large concentrations of responses on the Golden Gate Bridge, Richmond -San Rafael Bridge, San Francisco-Oakland Bay Bridge and the San Mateo-Hayward Bridge. This pattern aligns with open-ended responses, where bridges were mentioned more than 1,000 times.

Barriers to Bicycling

The next set of questions requested feedback on barriers to bicycling on the State-owned transportation network. Identified barriers were primarily concentrated around the major population centers adjacent to the San Francisco Bay. A total of 4,533 pins were placed on the map to identify barriers, distributed relatively evenly between the three options provided as potential barriers. Figures 9-11 illustrate the general locations of barriers identified by respondents.

Cross or Travel

Figure 5. Where do you cross the State-owned network?

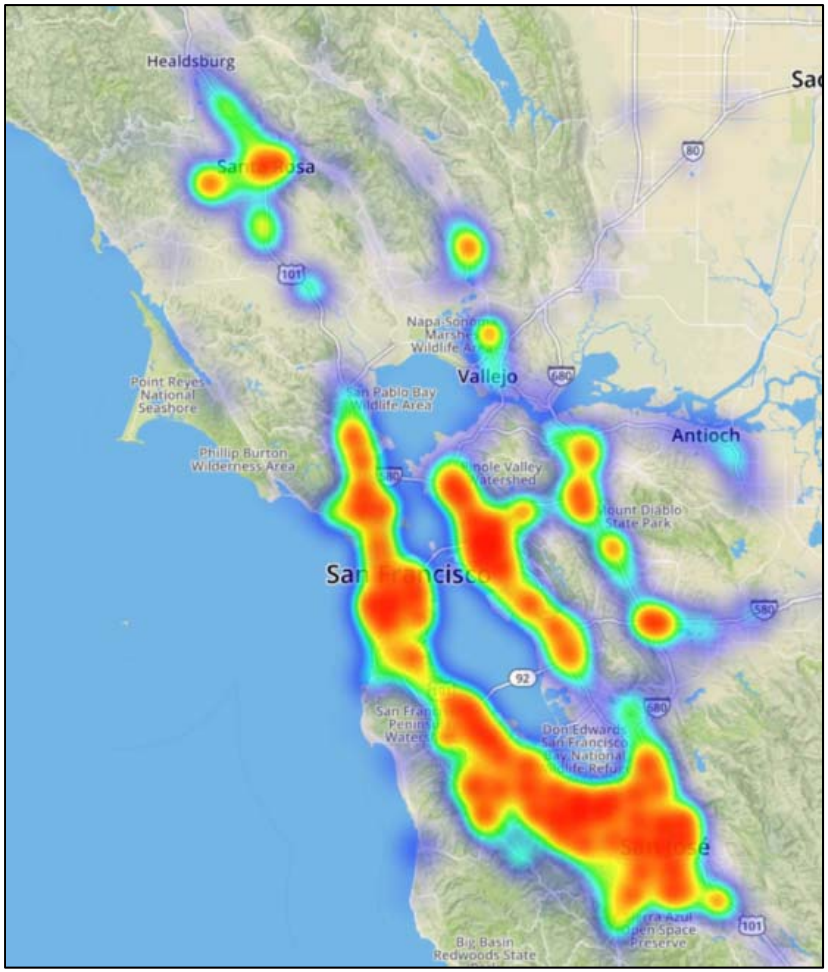


Figure 6. Where do you travel along the State-owned network?

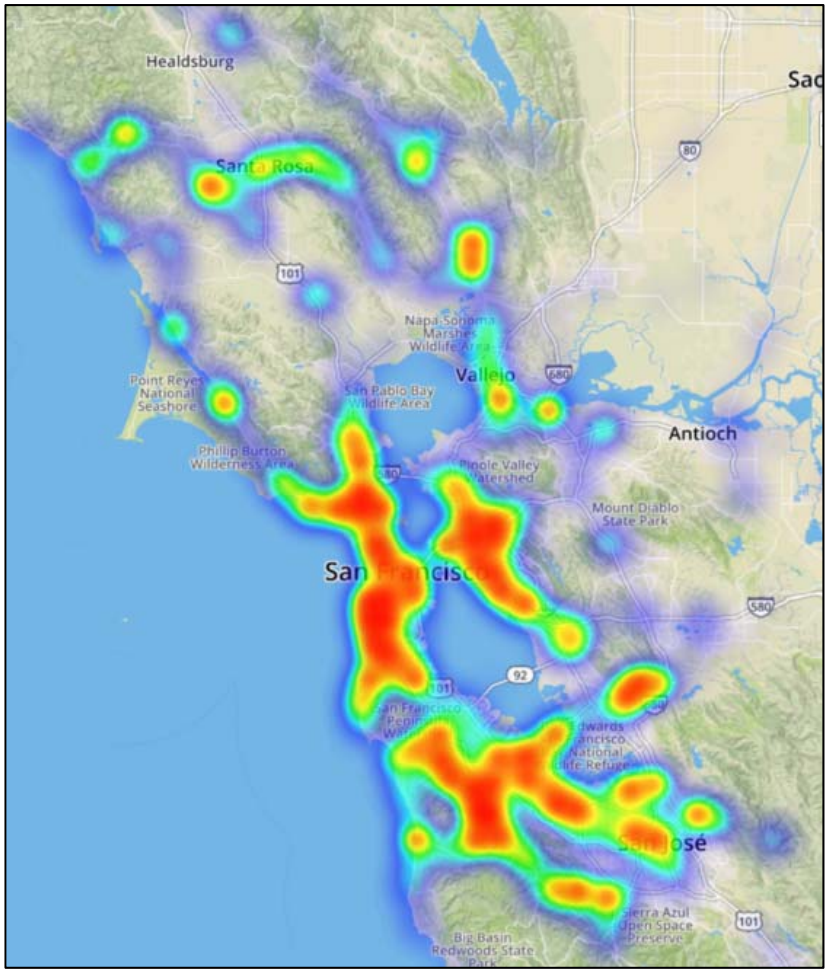


Figure 7. Where would you like to cross the State-owned network?

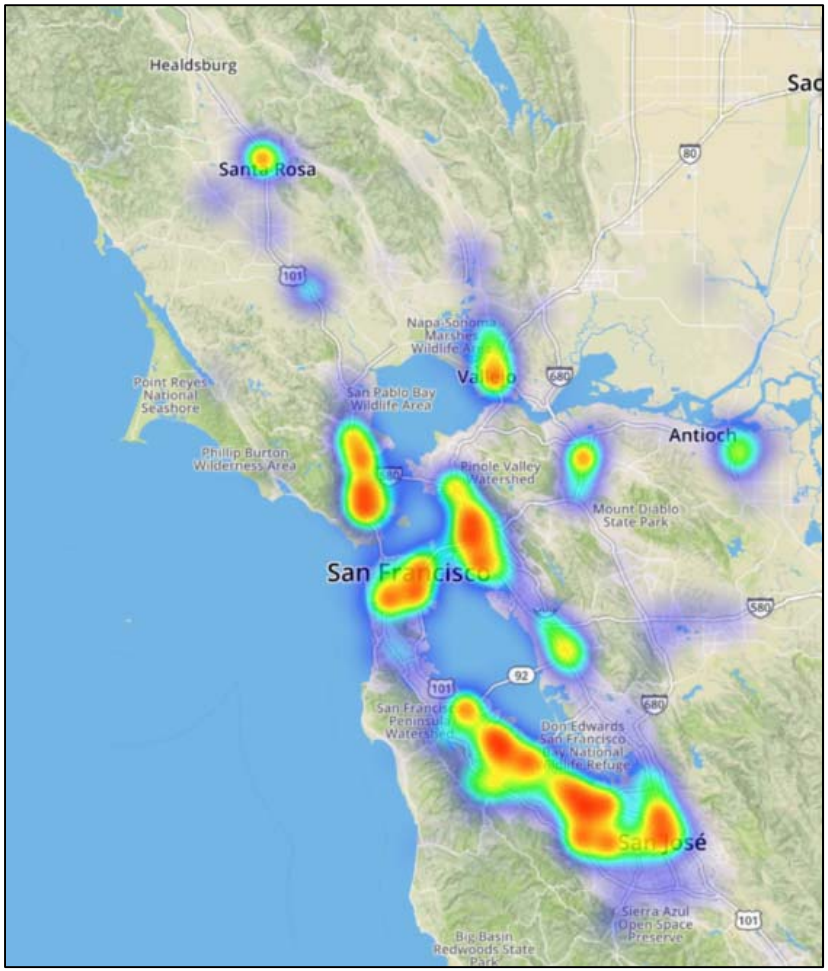
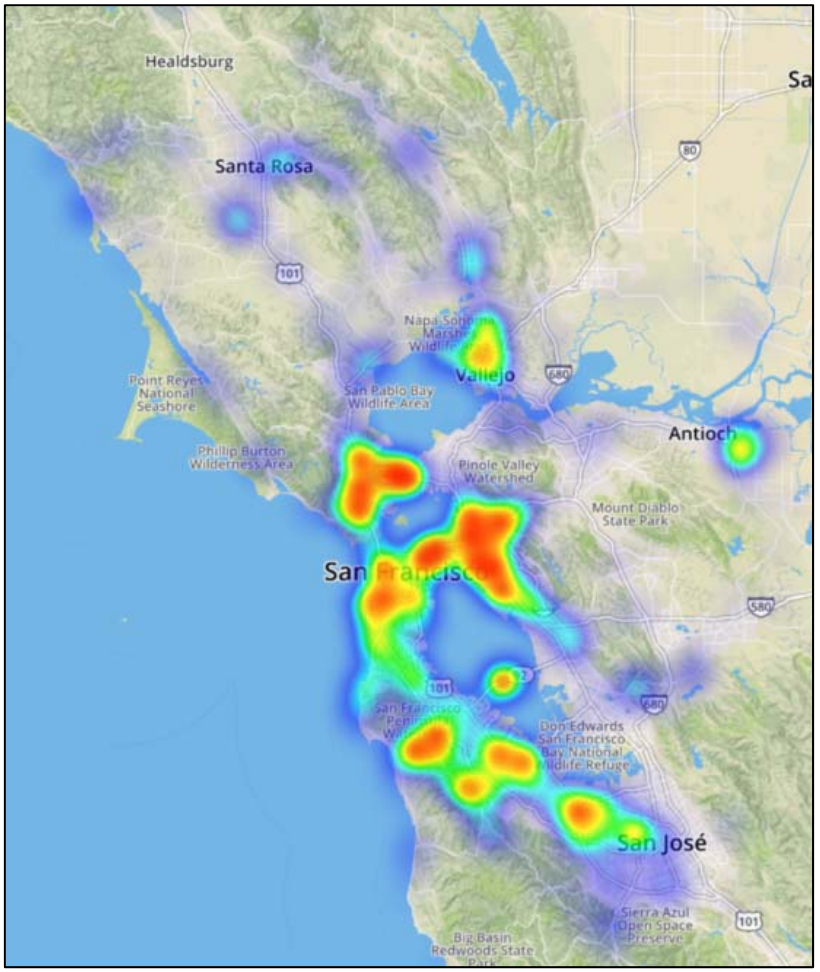


Figure 8. Where would you like to travel along the State-owned network?



Why is it difficult to ride in this area?

Figure 9. Difficult Intersections.

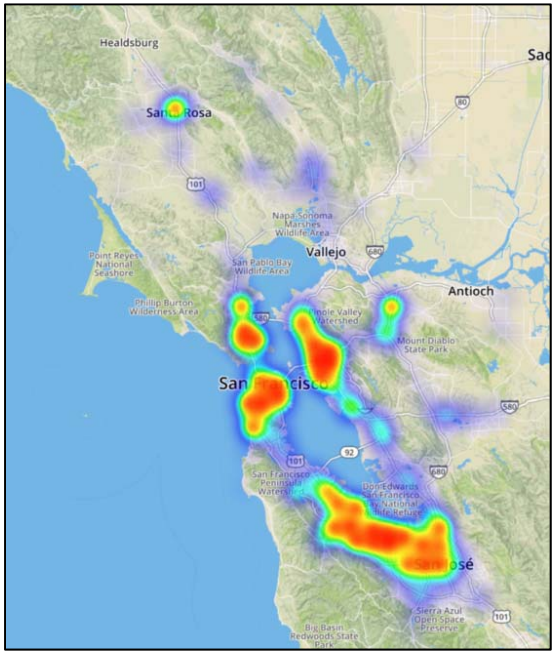


Figure 10. Lack of Path or Trail to Ride On.

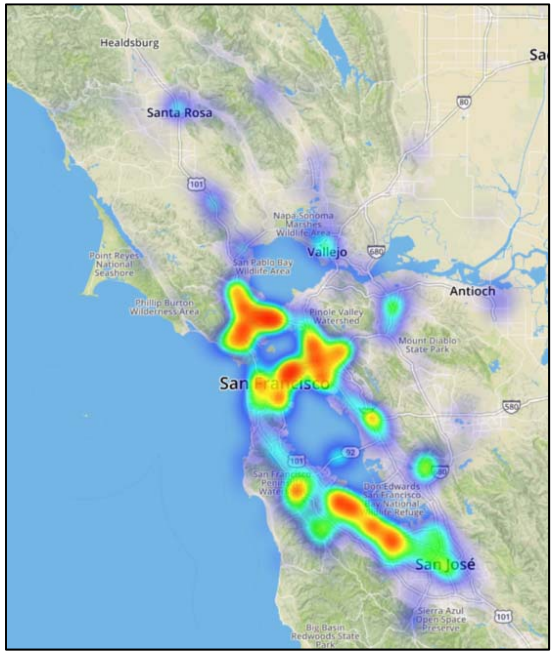
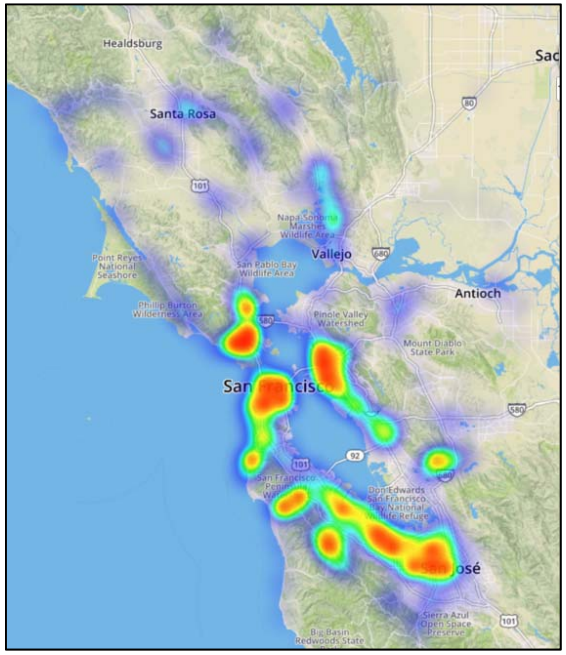


Figure 11. I Would Have to Ride Too Close to Traffic.



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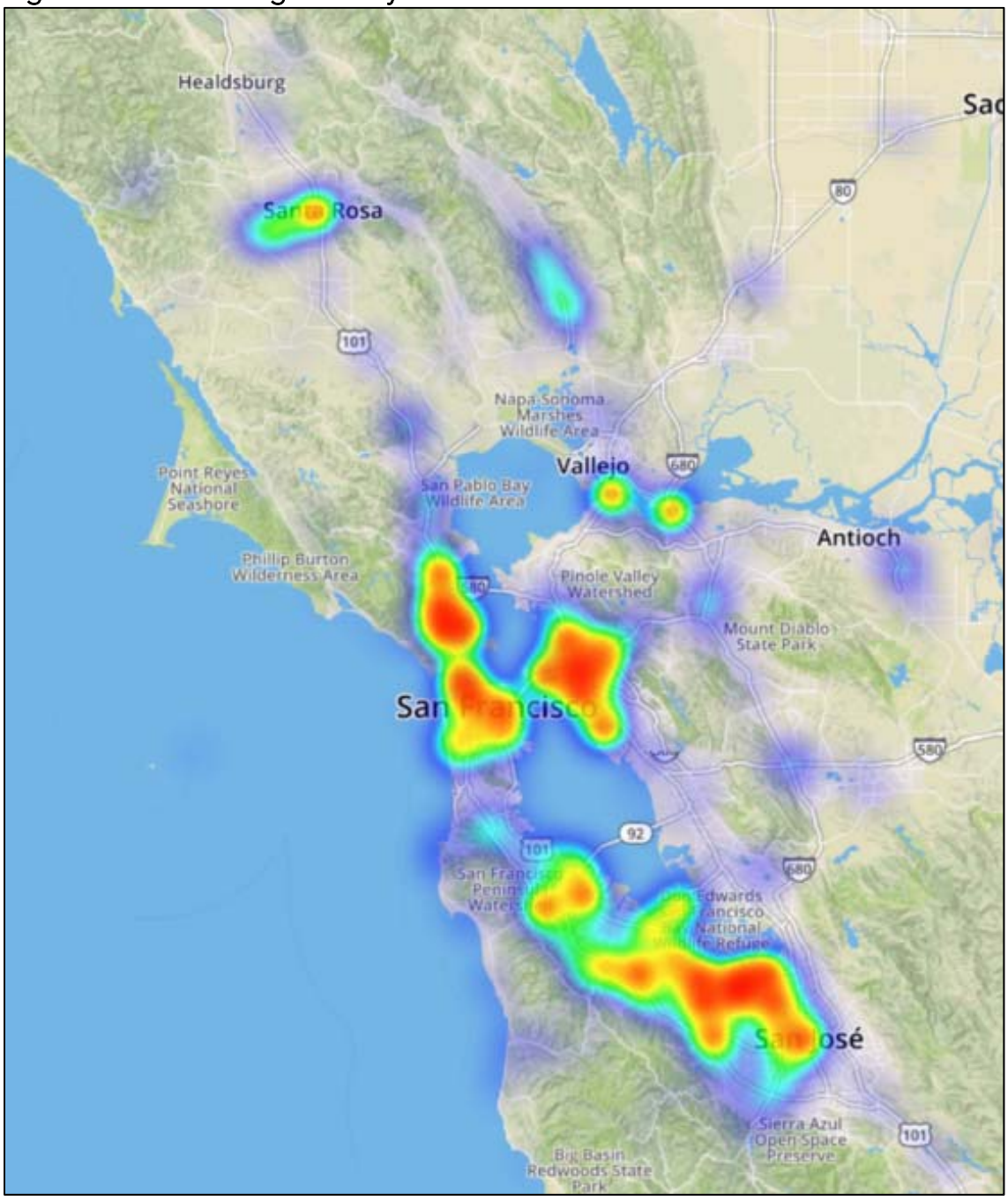
Well-Designed Facilities

For the next question, respondents identified examples of well-designed bicycle facilities, placing 1,610 pins on the map. Like many previous questions, responses were clustered around the San Francisco Bay. This is illustrated in Figure 12.

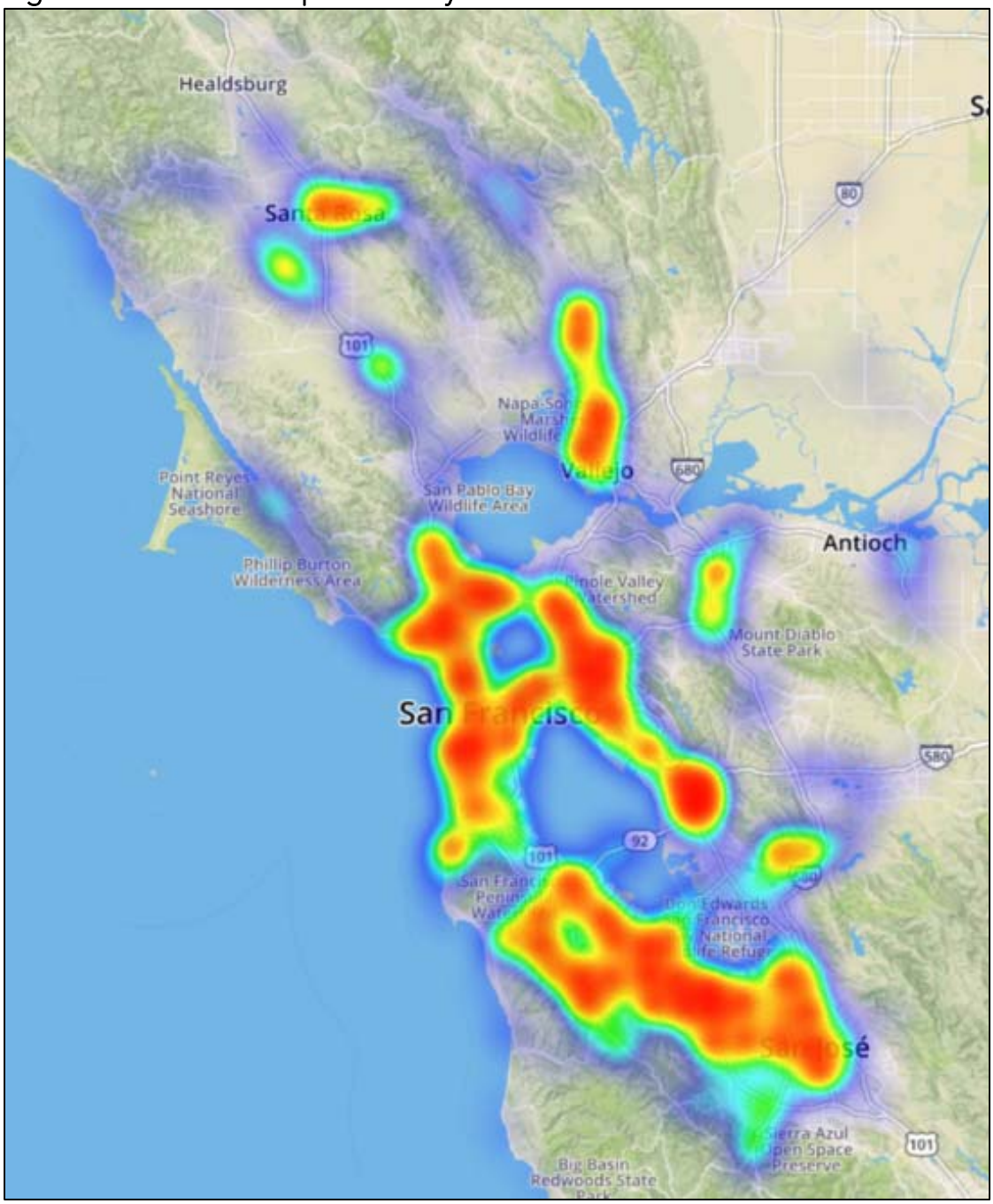
Figure 12. Well-Designed Bicycle Facilities.



C. New and Improved Bicycle Facilities

In this section, respondents marked where they would like to see new or improved bicycle facilities in the county they most frequently ride on and/or across the State-owned transportation network. Responses were again clustered in locations adjacent to the Bay.

Figure 13. New and Improved Bicycle Facilities.



In addition to providing potential locations for new and improved bicycle facilities, respondents wrote in more than 3,000 comments describing the improvements they would like to see. Dedicated bike lanes, paths and/or wider shoulders were most consistently identified, reinforcing the need for adequate space to facilitate cyclist safety. Figure 14 illustrates the words most frequently used in responses about improvements.

Figure 14. Words Most Frequently Associated with Recommendations for New and Improved Bicycle Facilities

Note: The word cloud only illustrates the frequency of word usage. It does not convey whether a word was used in a positive or negative manner. This context is provided in the narrative of this summary.

D. Additional Comments

Respondents were provided with several opportunities to share their comments in an open-ended format. To assess the thousands of comments provided, a sorted word analysis was undertaken. Responses were thoroughly reviewed to identify key terms and themes and a textual search was conducted to determine the frequency with which these ideas were noted.

The words listed in Table 3 are not necessarily the words appearing most frequently in responses, as generic terms such as 'the' or 'and' would likely top such a list. Instead, these words were selected because they best capture the critical information

the survey was designed to collect. Finally, the presence of any word on this list does not imply a positive or negative connotation. The word 'good,' for example, could refer to the presence or absence of good connections.

The counts noted in Table 3 are not the number of times a particular word appeared, but rather the number of responses in which it appeared. For example, a response that included the word 'bridge' three times was counted only once for this term. Additionally, the search tool could return results for matches where the key term was incorporated in another word. For example, the 1,024 total search results for the word 'danger' includes 979 instances of the word 'dangerous.'

As noted in previous sections of this summary, safety concerns predominated in the responses. Although responses including words such as "death, dead, die and kill" did not individually reach 200 mentions, the combined responses surpassed this threshold. Assessing the words conveying death or danger in conjunction with the words in Table 3, specific areas of concern begin to emerge. Heavy traffic, street crossings and intersections, motorists, the absence of dedicated bike lanes and the speed of traffic are major issues for respondents.

Table 3. Frequency of Key Terms in Open-Ended Responses

Word(s)	Total Mentions in Non-Pin Questions[1]	Total Mentions in Pin Questions[2]	Total Mentions
bike lane	843	2,032	2,875
path	423	1,514	1,937
safe	582	1,295	1,877
traffic	297	1,432	1,729
trail	278	1,117	1,395
bridge	100	1,237	1,337
crossing	113	1,195	1,308
need	362	836	1,198
very	365	746	1,111
danger	278	746	1,024
intersection	116	665	781
shoulder	137	618	755
good	361	381	742
protect	218	475	693
speed	110	564	674
access	88	554	642
separate	130	500	630
better	174	430	604
great	194	380	574
wide	77	443	520
improve	214	300	514
narrow	85	408	493
poor	199	223	422
commute	145	250	395
driver	170	217	387
design	110	258	368
enough	219	118	337
direct	47	286	333
pave	84	244	328
lack	162	131	293
connection	55	217	272
green	53	214	267
few	187	73	260
difficult	66	193	259
infrastructure	176	71	247
lots	121	120	241
BART	46	187	233
bad	88	113	201

[1] Each respondent is counted once if their comments included any of the search terms.
[2] Respondents could place as many pins as they needed so this is number may represent multiple comments on different pins by the same respondent.

V. Survey Participant Profile

The following tables provide a snapshot of survey respondents who provided demographic information. Data is provided in terms of all survey respondents and filtered by county of residence where the additional nuance may be useful.

Overall, respondents tended to be older than 40 (Table 4), white (Table 8) and male (Table 11), with incomes over $100,000 (Table 6). For respondents who provided zip codes, six of the 12 most common responses indicated a residence in one of three sections of Marin County (around Mill Valley, San Rafael and Belvedere Tiburon) or one of three San Francisco neighborhoods (the Mission District, the Castro and Haight-Ashbury). These six zip codes accounted for more than 10 percent of all responses (Table 10).

Table 4. Age of Respondents

Age	Count
Under 18	4
19-29	221
30-39	458
40-49	468
50-59	434
60-69	317
Over 70	99

Respondent ages filtered by county provide a slightly different view. Whereas 68-89 percent of all respondents were over the age of 40 in six counties, the proportion that identified as older than this age ranged from only 48-58 percent in Alameda, San Francisco and Santa Clara Counties.

Table 5. Age of Respondents by County of Residence

County of Residence / Age	Alameda	Contra Costa	Marin	Napa	San Francisco	San Mateo	Santa Clara	Solano	Sonoma
Under 18	0	2	0	0	0	0	1	0	1
19-29	68	10	6	5	58	21	47	2	4
30-39	129	30	23	21	104	46	83	7	15
40-49	89	28	88	23	74	68	64	8	26
50-59	86	45	68	26	44	61	73	5	26
60-69	57	30	49	19	28	53	35	3	43
Over 70	10	12	32	3	6	14	7	3	12
Totals	439	157	266	97	314	263	310	28	127

Table 6. Income of Respondents

Income	Count
Less than $25,000	51
$25,000 - $49,999	111
$50,000 - $74,999	176
$75,000 - $99,999	251
$100,000 - $149,999	406
$150,000 or more	674
Decline to state	316

Table 7. Income of Respondents by County of Residence

County of Residence / *Income*	Alameda	Contra Costa	Marin	Napa	San Francisco	San Mateo	Santa Clara	Solano	Sonoma
Less than $25,000	15	9	7	2	8	5	2	1	2
$25,000 - $49,999	34	11	9	5	19	5	16	2	10
$50,000 - $74,999	51	19	18	6	29	17	16	5	15
$75,000 - $99,999	56	25	30	19	38	23	23	7	30
$100,000 - $149,999	93	30	39	26	65	54	64	6	29
$150,000 or more	141	33	106	28	113	106	122	3	22
Decline to state	49	29	55	11	42	45	63	3	19
Totals	**439**	**156**	**264**	**97**	**314**	**255**	**306**	**27**	**127**

Respondents overwhelmingly identified themselves as White/Caucasian in all counties. No respondents self-identified as American Indian or Alaskan Native.

Table 8. Self-Identification of Respondents

Self-Identification	Count
American Indian or Alaskan Native	0
Asian, Asian Indian or Pacific Islander	157
Black or African American	26
Hispanic/Latino	91
White/Caucasian	1453
Decline to state	230

Table 9. Self-Identification by County of Residence

County of Residence / *Self-Identification*	Alameda	Contra Costa	Marin	Napa	San Francisco	San Mateo	Santa Clara	Solano	Sonoma
American Indian or Alaskan Native	0	0	0	0	0	0	0	0	0
Asian, Asian Indian or Pacific Islander	29	13	4	4	39	22	38	5	3
Black or African American	10	2	3	2	3	3	2	1	0
Hispanic/Latino	22	6	7	8	12	15	17	0	4
White/Caucasian	328	112	209	72	213	192	203	19	105
Decline to state	43	20	38	10	42	24	40	3	10
Totals	432	153	261	96	309	256	300	28	122

Table 10. Top Zip Codes of Respondents

Zip Codes	Count
94941	129
94110	88
94062	87
94901	66
94561	58
94501	57
94608	52
94117	47
94025	46
94920	46
94114	44
94577	42
All others	2,328

Please see Appendix B for a map illustrating the spatial analysis of responses by zip code.

Almost two-thirds of respondents who provided their gender self-identified as male. However, it is worth noting that 1,455 respondents did not complete this question despite providing other data.

Table 11. Gender of Respondents

Gender	Count
Male	1299
Female	682
Other/decline to state	49

Next Steps

The Planning Team will incorporate the survey findings into the bicycle needs analysis and the overall development of the Caltrans District 4 Bicycle Plan. The survey points will be associated with specific State highways by survey question and other variables. Survey points that were more than 500 feet from a state highway will not be included in the needs analysis. Where possible (because of subsidiary questions) the survey points will be separated into direction of travel (across the highway versus along) and trip purpose (non-recreational versus recreational).

Trips identified as crossing the state highway will also be linked to specific crossing points. Turning the survey points into features associated with the state highway allows them to be compared to several other data sources -- related to safety, demand, and level of traffic stress -- that were collected through the needs analysis.

The Bicycle Plan will result in a prioritized list of projects and strategies to improve safety and mobility for bicyclists on and across the State-owned transportation network in District 4.

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Caltrans District 4

Bicycle Plan

Caltrans
Focus Group Summary
April 2017

I. Executive Summary

The Caltrans District 4 Bicycle Plan will identify and prioritize investments to improve bicycling on and across the State-owned transportation network. District 4 includes Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma counties. Through this planning process, Caltrans has an opportunity to develop bicycle facilities that are safe, comfortable and convenient.

The State-owned transportation network, owned and operated by Caltrans, includes more than 700 miles of freeways and expressways and over 1500 miles of non-freeway State highways throughout the Bay Area region. While cities and other local jurisdictions have responsibility for many more streets and roads, this Bicycle Plan will address barriers to bicyclists on and across State highways that are typically higher speed and have higher volumes of automobile travel.

As part of the outreach process, Caltrans hosted six focus groups across the Bay Area to collect targeted input from a diverse cross-section of residents on their experiences biking in their community. Caltrans worked with local community-based organizations to recruit interested participants. A total of 87 individuals participated in the focus groups.

Several key themes emerged across the six focus group conversations regarding participants' main reasons for biking, barriers to biking and priority improvements for bicycling.

Main Reasons for Biking

- Increased mobility
- Economical form of transportation
- Convenient and reliable form of transportation
- Health benefits
- Family friendly activity
- Social connections

Local Barriers to Biking

- Lack of bike network connectivity
- Concerns sharing the road with vehicles
- Safety concerns at intersections
- Bike theft
- Limitations of public transit connectivity
- Conflicts with drivers
- Highways are barriers
- Lack of bike storage

Priority Improvements

- Dedicated bike lanes
- Bike-friendly transit options
- Expanded bike network with improved connectivity
- Safe bike storage
- Cycling amenities (e.g., repair stations)
- Education of drivers and cyclists on sharing the road
- Community bike events

II. Focus Group Overview and Recruitment

During March and April 2017, a series of six focus groups were conducted across the Bay Area. Caltrans worked with local community-based organizations and nonprofit agencies to recruit participants. The criteria for identifying and recruiting participants included the following characteristics:

- Bicycle rider (at least once a year)
- Low-income community member
- Ethnically diverse
- Ages 12 and older
- Dependent on alternative transit (e.g., bicycle, public transit, walking, carpool, etc)

Each organization was provided a stipend of $500 for their assistance recruiting participants, securing focus group locations and following-up with participants to ensure their attendance.

Format

All six focus groups were 90 minutes in length and followed the same format. Three focus groups were conducted in Spanish and three focus groups were led in English. Participants were given a brief introduction to the purpose and goals of the Plan. Participants were then asked to introduce themselves, identify the general neighborhood where they live and indicate if they were a bicycle rider. Next, they were asked a series of discussion questions to collect input on their experiences bicycling in their local community, as well as their ideas on bicycle needs and priorities. At the end of the session, participants were thanked for their time and provided with information on how to remain involved in the planning process.

Approximately 11-18 participants attended each focus group. Each participant was offered a stipend payment of $25 for their time and thoughtful feedback, and refreshments were provided.

Figure 1: Focus Group Schedule

Date/Time	County	City	Organization	Language	Number of Participants
March 14, 2017 6:00 - 8:00 pm	Alameda	Oakland	Cycles of Change	English	16
March 28, 2017 5:00 - 7:00 pm	Contra Costa	Richmond	Rich City Rides	English	12
March 29, 2017 6:00 - 8:00 pm	San Mateo	San Mateo	Peninsula Conflict Resolution Center	Spanish	14
March 30, 2017 4:00 - 6:00 pm	Contra Costa	Concord	Bike Concord	Spanish	11
April 4, 2017 5:30 - 7:30 pm	Sonoma	Santa Rosa	Sonoma County Bicycle Coalition	Spanish	16
April 5, 2017 3:00 - 5:00 pm	Santa Clara	San Jose	First Community Housing	English	18

III. Participant Profile

At the beginning of each focus group, participants completed a brief questionnaire which included questions about the participant's demographic characteristics, bicycle habits, and employment status to help ensure that the groups had a mix of participants. Although 87 individuals participated in the focus groups, approximately 79 surveys were collected.

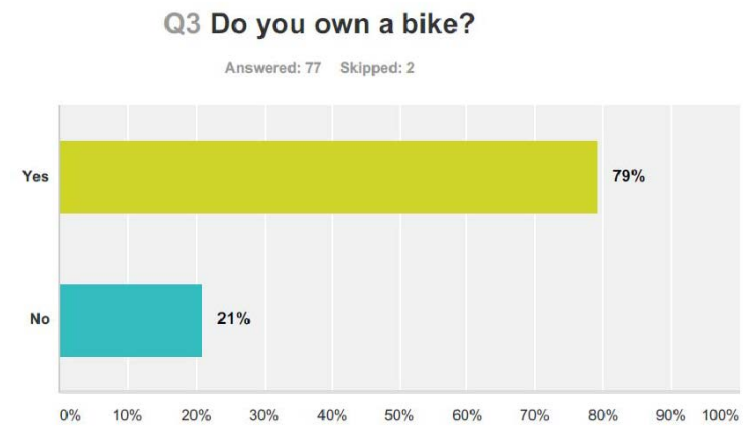
Some participants did not answer all the survey questions; therefore, the total number of responses varies for each question. Since respondents were not limited to one response for certain questions, the percentages of each response selected add up to more than 100%, and the response count total is larger than the number of respondents.

Several focus group participants included individuals from low-income minority households, families with children, single female-headed householders, persons with Limited English Proficiency (LEP), and persons with disabilities. Through the questionnaire, participants were asked to share basic demographic information to ensure that the input collected was representative of diverse viewpoints.

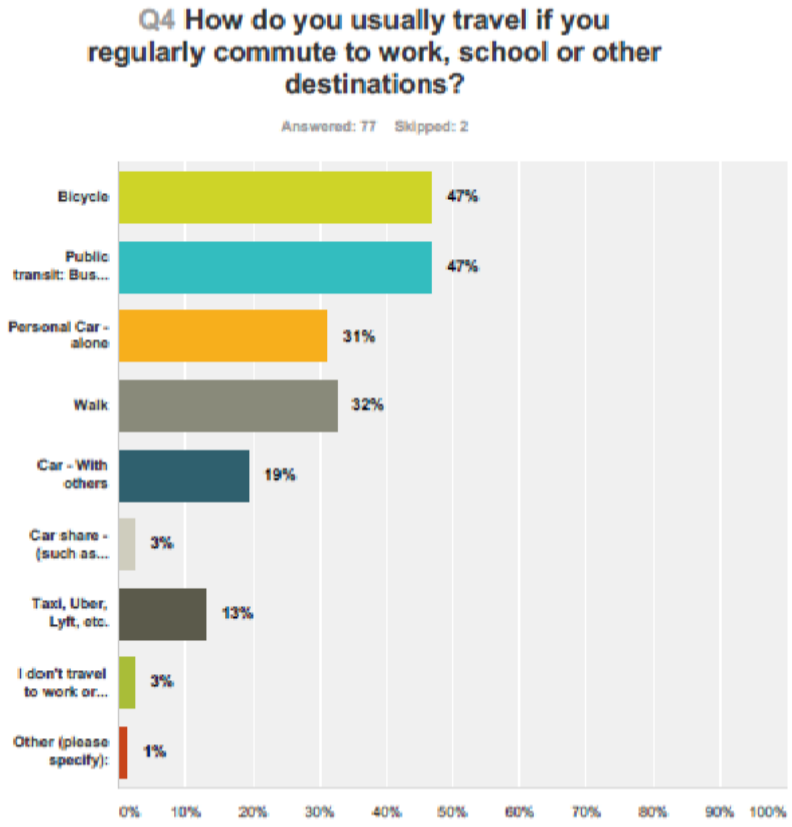
An analysis of the questionnaire revealed the following demographic characteristics of the focus group participants:

- 50% of participants were Latino, 27% were African American, 14% were White, 7% were Asian, 3% were Native American and 3% were "Other."
- Approximately 53% of participants identified as male and 44% identified as female.
- 36% of participants declared they earned under $15,000, 12% earned between $15,000-$24,000, 14% earned between $24,000-$34,000, 14% earned between $35,000-$49,000, 3% earned between $50,000-74,000, and 7% earned above $75,000.
- Participants ranged in age; 20% were between 18-25, 17% between 26-35, 19% between 46-55, 13% between 56-65, and 1% above 66 years of age.

Additional questionnaire responses are include on the following pages. The questionnaire tool is included in Appendix A.



- 79% of participants stated that they owned a bike, 21% did not own a bike. During the focus group, participants provided more insight into why they did not own a bike, sharing that they often borrowed bikes because they could not afford their own bike, they have nowhere to store a bike, or their bike was stolen.



- 47% of participants used a bike to travel to school/work or other destinations while 47% use public transportation.

IV. Key Findings by Individual Focus Groups

The following section describes the high level findings from individual focus group discussions. The focus group guide and discussion questions (in Spanish and English) are also available in Appendix A. The focus groups are summarized in the following order:

A. Oakland
B. Richmond
C. San Mateo
D. Concord
E. Santa Rosa
F. San Jose

A. Oakland Focus Group Summary

The Oakland focus group took place on March 14, 2017 from 6:00 - 8:00 p.m. at the Cycles of Change bike shop. Cycles of Change is a non-profit community bike shop that offers affordable bikes, repairs, classes and community events. Approximately 16 individuals who live in Oakland participated in the focus group. The meeting was facilitated by Jamillah Jordan and Sandra Caballero of MIG, Inc. The participants represented diverse ages ranging from high school students to seniors. The group was comprised of predominantly African American, Hispanic and Asian participants. Nearly all of the participants identified as bicycle riders.

Main Reasons for Biking

- **Mobility.** Participants shared that they bike because it allows for quick and convenient mobility especially to places where public transit doesn't go or doesn't pass by frequently enough.

- **Economical.** Biking allows participants to save money; it is a cheaper option compared to BART or bus transit.

- **Convenient for Short Trips**. Several participants reported that biking allows them to make quick trips around their neighborhood such as to the local market, friend's houses, or to the doctor. In many cases, the alternative would be walking which would take longer.

Barriers to Bicycling

Connectivity

- **Connectivity to Neighboring Cities**. Participants expressed a desire for Oakland to be better connected through bicycle infrastructure to neighboring East Bay cities such as Berkeley and Richmond.

- **Inconvenient Topography**. Several participants noted that the Oakland hills require too much physical exertion and elongate trips.

- **Expanded Bike Network.** Participants suggested that the bike network should be expanded to allow for greater connectivity and access. This includes adding more bicycle boulevards and trails.

Safety

- **Aggressive Drivers**. Several participants expressed concern about their safety while riding in bike lanes because drivers are often aggressive or ride too close to bike lanes.

- **Bike Theft.** Many participants commented on bike thefts in public areas, in homes, or at public transit stops. They expressed a desire for more subsidized bike cages/ storage units or more supervision at transit stops to ensure bikes and bike parts were not stolen.

Public Transit

- **Space Limitations of Transit**. Participants were frustrated that BART cars and ACTransit buses often have limited space to accommodate people with bikes, especially during peak commute times.

- **Theft at BART Stations**. Many participants ride their bikes to the BART station but some have experienced bike theft after leaving their bikes overnight or for a short period of time. They shared that it was discouraging to see other bikes with missing pieces left behind at BART.

- **Inconvenient Bus-Bike Racks**. Participants who ride AC Transit shared that it can be difficult and physically daunting to put a bike on the bus rack. It can be challenging to put bikes on the racks and to take them in off in a timely manner.

Top Priority Improvements

- **Sponsored Bike Resources**. All of the participants were familiar with the services and resources provided by the Cycles of Change community bike shop. They expressed support for continued or increased funding to the bike shop through the District 4 Bicycle Plan. Participants highlighted how Cycles of Change provided bike safety education and fostered a strong bike community among residents.

- **Calm Streets for Bike Lanes.** A few participants noted that cyclists want to avoid riding near a lot of cars, but they also want to get to places through a direct route. Dedicated bike lanes should be located along calmer, residential streets to avoid unnecessary conflicts with drivers.

- **Connect the Bay.** Participants would like a "Bay side trail" that runs from Oakland to Richmond. The trail should have a fork at the Bay Bridge and cross into San Francisco.

- **Repair Stations at BART/Transit**. Participants requested bike repair stations at BART stations or public transit hubs to ensure that cyclists have accessible locations to fix their bikes.

B. Richmond Focus Group Summary

On March 28, 2017, the Richmond focus group was convened from 5:00 pm -7:00 pm at Rich City Rides to discuss bicycle needs and priorities in the Richmond community. Rich City Rides is a non-profit community bike shop that offers affordable bikes, repairs, classes and community events. Approximately 12 individuals who live in or near Richmond in Contra Costa County participated in the focus group. Most the participants were African American men between the ages of 20-55 years old. The meeting was facilitated by Jamillah Jordan and Beth Martin of MIG, Inc.

Main Reasons for Biking

- **Convenience and reliability**. Richmond participants noted that they often choose to bike because they can reach their destination more quickly than taking the bus, and they can be sure that they will arrive on time.

- **Public health benefits**. Participants noted that biking provides a great way to exercise and to decrease stress. One participant highlighted that he bikes to "think more clearly."

- **Social connections**. Many participants shared that they enjoy bike riding because it can be a social activity. They like riding in groups for bike events, and being able to meet a wide range of people. Participants noted that biking can bring together people from different experiences and backgrounds.

Barriers to Bicycling

Safety and Connectivity

- **More trails and pathways**. Participants expressed interest in locating more bike routes and trails in Richmond, especially off-road scenic trails that separate bikes and cars.

- **Bike theft**. Participants noted that the concern of bike theft prevented them from biking to certain destinations.

- **Issues sharing the road with drivers.** Several participants highlighted that they do not always feel safe biking next to cars in Richmond. They noted that many drivers need more information and education on how to share the road with bicycles.

- **Information about the bike network**. One participant who was new to bicycling said that she didn't know what routes or streets are bike-friendly in Richmond. She noted that if she had more information on bike lanes and bike paths she would be more likely to ride.

Public Transit

- **Space limitations on BART**. Participants were frustrated that BART cars often have limited space to accommodate people with bikes, especially during peak commute times. One participant also recommended that BART create cars that accommodate bikes only.

Top Priority Improvements

- **Bike paths separated from cars**. Participants would like to see a greater investment in local off-road bike paths. One participant would like to see investment in a Richmond greenway.

- **Promote positive bike culture**. Participants recommended more bike-related events and programming that encourage people to start riding or to ride more often. One participant identified Rich City Rides as an important organization that plans events and group bike rides, allowing people to join regardless of skill level or ability.

- **More bike friendly transit options**. A top priority among participants was making other modes of transit (e.g., bus and BART) more bike friendly to expand multi-modal access to key destinations.

C. San Mateo Focus Group Summary

On March 29, 2017, the focus group was convened from 6:00 - 8:00 p.m. at the Peninsula Conflict Resolution Center, to discuss bicycle needs, priorities and opportunities in San Mateo County. Approximately 14 individuals who live in or near San Mateo participated in the discussion. The participants were recruited by staff of the Peninsula Conflict Resolution Center, a local nonprofit that provides trainings, facilitation and mediation services for a range of community topics. Sandra Caballero and Jamillah Jordan of MIG Inc, facilitated the bilingual conversation in Spanish and English.

The participants were diverse in age, gender and ethnic background. Half of the group consisted of monolingual Spanish-speakers, many were bilingual and a few participants were monolingual English-speakers. There were several middle-aged participants of diverse working class and professional backgrounds, as well as a few young professionals. Two participants were high school students and another participant attended Stanford University. Several participants owned bikes and stated that they ride frequently.

Main Reasons for Biking

- **Family-Friendly:** A few participants commented that biking is a family-friendly activity and a fun way for parents, children and other relatives to connect with one another.

- **Neighborhood Travel.** Many participants shared that biking was a convenient way to travel around the neighborhood for exercise and to visit friends. San Mateo and the surrounding area is generally flat so it is easy to get around by bike

- **Leisurely Pace.** Many participants like the speed of biking. It was faster than walking but not as stressful as driving.

- **Avoid Parking**. Biking eliminated the stress associated with locating and/or paying for parking.

Barriers to Bicycling

Safety and Connectivity

- **Lack of Bike Routes.** The existing bike routes are limited and often out of the way so cyclists either don't bike or take unsafe streets with no bike lanes because they are more efficient.

- **Police are not Bike Friendly**. Some participants expressed that police in San Mateo County were not informed of cyclists' rights or the "rules of haring the road."

Participants mentioned that they were stopped by police for biking on streets without bike lanes and some police often side with drivers during conflicts.

- **Children's Safety Issues.** A few parents expressed concern about the safety of their children when biking. Some parents allowed their children to bike but suggested they ride on the side walk to avoid cars.

Public Transit

- **Transit Stop Shelters.** Participants noted that many transit stops are uncovered which exposes them to the elements, both rain and sunshine.

- **Bike Parking at Transit Stations**. For participants that biked to their local bus stop or Caltrain station, bike safety was a concern. Many participants had their bike or bike parts stolen at transit stops.

Top Priority Improvements

- **Affordable Bike Options.** Some participants expressed a desire to bike but shared they could not afford to purchase a bike. They would like a range of options such as bike rentals, bike share facilities or build-a-bike programs.

- **Safe Routes to School Programs**. Several young participants already bike to school and created their own bike groups; however participants would like to see a formalized bike to school program to ensure children safety.

- **Bike Events on Popular Bike Corridors**. A few participants expressed an interest in having more community bike events, such as Ciclavia, to promote biking among local residents and to educate cyclists about bike safety.

D. Concord Focus Group Summary

On March 30, 2017, the Concord focus group was convened from 4:00 - 6:00 p.m. at the Keller House to discuss bicycle needs, priorities and improvements across Concord. Bike Concord partnered with First 5 Contra Costa and the Keller House to recruit participants from the target demographic. Approximately 11 individuals who live in or near Concord participated in the focus group. The meeting was facilitated by Noé Noyola and Sandra Caballero of MIG Inc.

The group consisted primarily of Latino participants, nearly all of which were women between the ages of 30-45 years old. Many of the women were mothers with one of more young children and most of them participated in activities at First 5 Contra Costa. Several of the participants shared that they did not bike often but their children and other family members enjoy bike riding.

Main Reasons for Biking

- **Family-Friendly.** Nearly all participants shared that biking was a family activity. Either the whole family would go biking to local parks or the children would go biking to their afternoon activities.

- **Exercise.** Participants viewed biking as a good way to exercise outside when the weather was agreeable. Many participants enjoyed biking to local parks or out to open spaces.

- **Biking Saves Money.** Gasoline is expensive and if gas prices continue to rise, then biking will emerge as a more economical option for many residents.

Barriers to Bicycling

Safety and Connectivity

- **Safe Routes to School.** Parents spend a lot of time dropping off and picking up children from school. The parking lot and pick-up/drop-off zones are very inconvenient and drivers are aggressive. Many parents do not feel safe letting their children bike to school.

- **Incomplete Bike Routes.** There are existing bike routes in Concord, however there are gaps in the routes or routes suddenly end. This causes some cyclists to ride on sidewalks or to terminate their trips prematurely..

- **Safety Concerns at Intersections.** Participants shared that some intersections were particularly confusing for cyclists and drivers.

- **Homeless Activity on Bike Routes.** The participants expressed concern about homeless encampments on bike routes. Some participants feel uncomfortable walking by or biking along routes with sizable homeless populations.

- **Poor Visibility.** Many participants noted that cyclists were difficult to see especially during evening and night hours.

Public Transit

- **Infrequency.** Only a few of the participants used public transit. They stated that transit options were limited and buses passed by far too infrequently. One woman shared a story about how her daughter had to wait three hours for a bus to go to work.

Top Priority Improvements

- **Creating School Bus and Bike Options.** All participants expressed a desire for local school bus transportation. Participants indicated they would be willing to pay for their child to use the school bus. Currently, this option doesn't exist so parents spend hours picking up and dropping off their children at school. Students could also bike to the school bus locations to expand multi-modal options.

- **Community Bike Events.** Participants were familiar with Ciclavia in Latin America and would like similar events to take place in their community. They noted that it can offer a fun activity for families and expand the bike culture.

- **Bike Repair Shops.** Participants would like to see bike repair stations at schools or bike repair shops in community centers. Ideally, the shops would offer free classes on how to fix your bike.

E. Santa Rosa Focus Group Summary

On April 4, 2017, the focus group was convened from 5:30 - 7:30 pm at the Santa Rosa Boys and Girls Club, to discuss bicycle needs, opportunities and priorities. The Sonoma County Bicycle Coalition recruited local participants with assistance from the Santa Rosa Boys and Girls Club. To accommodate the Spanish and English speaking participants, the facilitators led two separate focus groups – one for the monolingual Spanish speakers and one for the English participants. Sandra Caballero and Noé Noyola of MIG, Inc conducted the focus groups. A total of 16 participants attended both the focus groups.

Most participants lived in East Santa Rosa, which is a predominantly working class Latino community separated from other areas of Santa Rosa. Most of the Spanish-speaking participants were Latina mothers, while the English-speaking participants were young adults in high school or in college with the exception of two middle-aged Caucasian women. Several of the English-speaking participants reported that they rode their bikes often while the Spanish speaking group rode their bikes once or twice a year.

Main Reasons for Biking

- **Saves Money.** Many of the young participants shared that biking is a cheaper form of transportation than using public transit or paying for gas.

- **Exercise, Health and Fun.** Several participants viewed biking as a recreational activity that provides a physical outlet and helps maintain their physical fitness. Participants noted that they often bike along nearby nature trails for fun and recreation.

- **Primary Form of Transportation**. One participant reported the biking was her primary form of transportation.

- **Convenient for Short Trips.** Many participants used their bikes to go to school, work or sports activities. These destinations are close to their homes so biking is a convenient form of transportation.

Barriers to Bicycling

Safety and Connectivity

- **Lack of Bike Routes.** Several participants commented that there are not enough bike routes to Downtown Santa Rosa or to local schools.

- **Highways as Barriers**. Participants noted that East Santa Rosa is separated from the rest of Santa Rosa by US 101, Highway 12, and River Road. It can be intimidating for cyclists to cross highways, which prevents them from riding their bikes on many occasions.

- **Car-Centric Culture.** Many participants noted that there is a car-centric culture in Sonoma County. As a result, some drivers are disrespectful toward cyclists and often drive too close or honk at cyclists without reason.

- **Safety Concerns at Intersections.** Participants shared that some intersections were particularly confusing for cyclists and drivers.

- **Poor Visibility.** Many participants noted that cyclists were difficult to see especially during evening and night hours.

- **Limited Bike Parking.** Bike parking in public places or at schools is limited or unsafe. One participant from Santa Rosa Junior College noted that the school charges people to store bikes on school property, which is cost-prohibitive for many students.

Public Transit

- **Multiple Transfers Needed.** Participants shared the routes in Santa Rosa were often very short so they had to transfer often between Santa Rosa's City and County buses.

- **Inaccurate App and Website Information**. Several participants noted that the bus apps and website did not display correct route time or transfer options.

- **Safety Issues on Buses**. Several participants reported that gang members or homeless people often ride buses and this can lead to safety issues for other passengers.

Top Priority Improvements

- **Buffered and Painted Bike Lanes.** There are existing bike lanes throughout Santa Rosa, however, participants shared that they would feel safer if they were painted green and had a barrier against traffic. Participants sited Sebastopol Road as an example of a road that has a bike lane, but some cyclists still feel unsafe alongside traffic.

- **Access across US 101 and Highway 12.** Many participants that live in East Santa Rosa have to travel across Highway 12 and US 101 daily to go to school or work. They would be more inclined to bike if there was a safe option to cross these freeways and highways.

- **Clean Bike Lanes.** A few participants shared trash and debris accumulates in the bike lanes, which can cause bike flat tires and other issues. They recommended that bike lanes be cleaned with the same frequency and attention as vehicular roads.

- **School Bike Education**. Several of the younger participants noted that they received a one-time bike education course at their school. They agreed that the course was very helpful course and they would like to have bike educations courses offered regularly as part of the school curriculum.

F. San Jose Focus Group Summary

On April 5, 2017, the focus group was convened from 3:00-5:00 p.m. at the Casa Feliz Studios near downtown San Jose. Casa Feliz is an affordable housing property owned by First Community Housing, a nonprofit, public benefit housing development corporation in San Jose that designs, develops and manages affordable housing for low-income households. The staff of Casa Feliz assisted with recruiting residents to attend the focus group. Residents of Casa Feliz include low-income families, senior citizens, and individuals as well as special needs populations such as the chronically ill, the developmentally disabled, and consumers of mental health services.

The purpose of the focus group was to discuss bicycling preferences, issues and priorities among San Jose residents. A total of 18 participants were in attendance and the majority of participants were Casa Feliz residents. Some of the participants were bicycle riders and other participants stated that they frequently walk and use public transit to access local shopping or entertainment destinations. The meeting was facilitated by Jamillah Jordan and Beth Martin of MIG, Inc.

Main Reasons for Biking

- **Cost**. Participants said they bike because it is a low-cost mode of transportation. Only one participant in the focus group had access to a car.

- **Recreation.** Participants shared that biking is a form of enjoyable exercise and a nice way to enjoy the outdoors.

- **Running errands**. Focus group participants ride their bikes to run errands and access destinations that are not conveniently reachable by walking or public transit.

Barriers to Bicycling

Safety and Connectivity

- **Fear of vehicular drivers**. Participants felt that distracted and speeding drivers made it dangerous to bike on the road. A few participants noted they had almost gotten hit by cars, or feared getting hurt.

- **Need safe bike storage**. Participants were concerned about bike theft, and described the lack of safe bike storage around San Jose as a barrier to biking.

- **Air pollution**. Participants disliked having to ride next to cars and breathe in car exhaust.

Public Transit

- **Limited bike spaces on transit**. For many of the buses, there are only 2 bike storage spots on the front of the bus. When these are full, cyclists must wait for the next bus or cyclists traveling in pairs may be forced to separate.

- **Taking bikes on transit**. A few participants expressed that it can be difficult to put bikes on different types of transit. For example, one participant identified that it is very heavy to lift bikes onto the vertical storage on VTA light rail.

- **More secure bike storage**. Participants would like to see more bike storage options at transit hubs. For example, there are a limited number of bike lockers at the Winchester Transit Center.

Top Priority Improvements

- **Increased visibility**. Participants would like more striped or painted bike lanes to increase the visibility of bikers on the road.

- **Amenities for bike commuting**. Participants discussed amenities that would incentivize bike commuting, such as water fountains, bike repair stations, and clean-up stations that include showers for those who need to "freshen up" before work.

- **More bike storage at apartments**. Many participants recommended safer options for storing their bikes both at their apartments. Participants noted that peoples' bikes had been stolen due to poor bike storage options both inside and near the Casa Feliz apartments.

V. Next Steps

The Project Team will incorporate the focus group findings into the development of the Bicycle Needs Analysis. The focus group input will also inform the Caltrans District 4 Bicycle Plan Vision and Goals memo. This summary will be shared with each community-based organization that participated in the focus group recruitment and outreach. For additional updates, please visit the project website.

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Caltrans District 4

Bicycle Plan

Caltrans District 4 Bicycle Plan Workshop Summary

July 2017

Caltrans

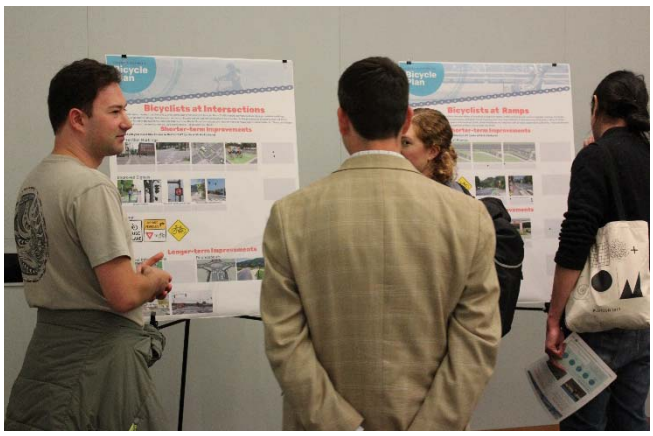
I. Introduction

The Caltrans District 4 Bicycle Plan will identify and prioritize investments to improve bicycling on and across the State-owned transportation network. District 4 includes Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma counties. Through this planning process, Caltrans has an opportunity to develop bicycle facilities that are safe, comfortable and convenient.

The State-owned transportation network, owned and operated by Caltrans, includes more than **700 miles of freeways and expressways and over 1500 miles of non-freeway State highways** throughout the Bay Area region. While cities and other local jurisdictions have responsibility for many more streets and roads, this Bicycle Plan will address barriers to bicyclists on and across State highways that are typically higher speed and have higher volumes of automobile travel.

As part of the outreach process, Caltrans will host two rounds of three public workshops to collect community input across the Bay Area. The **goals and objectives of the first round of public workshops conducted in May 2017 were** to:

- Highlight the **new vision, mission and goals of Caltrans**, including those related to multimodal mobility, such as safety, health, sustainability, and livability;
- Educate the public and relevant stakeholders on **purpose and background of the Plan** and the District's role in bicycle transportation within a statewide, regional, and local context.
- Solicit and **facilitate public and stakeholder input** to inform the development of the Plan and meet its objectives in developing strategies and a list of projects to improve bicycle safety and mobility in District 4.
- Identify and **confirm safety and mobility needs** of bicyclists in the Bay Area.
- Identify stakeholders' ideas on how the Plan could potentially **support regional and local** bicycle planning and implementation efforts.



II. Workshop Overview and Participants

During the month of May, a series of three workshops were conducted across the Bay Area region. The workshop dates and locations are listed below.

Date/Time	County	City	Location
Tuesday, May 9, 2017 6-8 pm	San Francisco	San Francisco	Metropolitan Transportation Commission 375 Beal Street, San Francisco
Wednesday, May 17, 2017, 6-8 pm	Solano	Vallejo	John F. Kennedy Library 505 Santa Clara Street, Vallejo
Tuesday, May 30, 2017, 6-8 pm	Santa Clara	San Jose	Berryessa Community Center 3050 Berryessa Road, San Jose

The workshops were conducted in an interactive format, soliciting community input through live audience polling, presentations, maps, and comment forms. Large display boards were arranged around the room in an "Open House" style to engage the public on the needs, barriers and opportunities for bicycling in the Bay Area. Approximately 15--30 participants attended each workshop. Audience participants included residents and representatives of the following organizations:

- Neighborhood associations
- Public agencies
- Bicycle and pedestrian advocacy groups
- Public transit and paratransit agencies
- Public health and environmental organizations
- Caltrans Divisions and Programs staff
- Bicycle touring clubs
- Schools and universities
- Other community interest groups

III. Workshop Format

Sergio Ruiz, Pedestrian and Bicycle Coordinator of Caltrans District 4, welcomed the participants and explained the purpose of the Bicycle Plan. Sergio provided a brief overview of the new vision, mission and goals of Caltrans, which emphasize greater collaboration to help develop solutions and strategies that improve mobility for all modes of transportation. Sergio introduced Jamillah Jordan of MIG, Inc., Caltrans' on-call public participation and engagement contractor, who gave an overview of the agenda and reviewed the process schedule.

Jamillah Jordan reviewed the workshop input opportunities which included live polling, open house display boards, and comment forms. Using the live audience polling technology, Jamillah asked a series of questions to the audience on county of residence, bicycle preferences and other topics. Next, Jamillah gave a brief presentation on how public involvement is shaping the Caltrans District 4 Bicycle Plan.

Hugh Louch of Alta Planning provided a presentation on the bicycle needs and deficiencies in the Bay Area based on the technical analysis conducted to date. Hugh then presented several live audience polling questions to assess audience preferences related to bicycling safety, demand, supply and public input. All workshop presentations are available in Appendix A.

Following the presentations, workshop participants were invited to interact with the Open House display boards. The display boards provided background information on the Plan purpose, partners, and goals; a map of the State-owned transportation network; and, preliminary survey results and focus group findings. The Open House display boards are included in Appendix A.

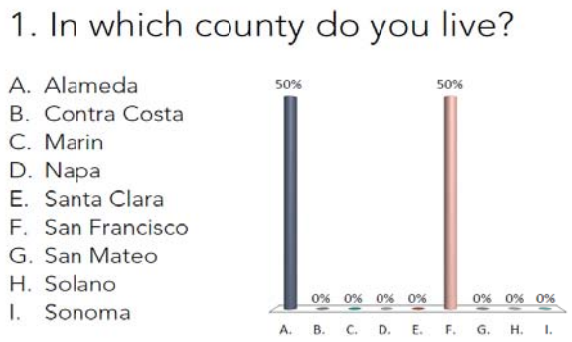
IV. Live Audience Polling Results

As previously noted, the workshop presenters incorporated live polling questions to collect public input from participants. Responses from select questions are displayed on the following pages. For a full review of the polling questions and responses during each workshop, please see Appendix A.

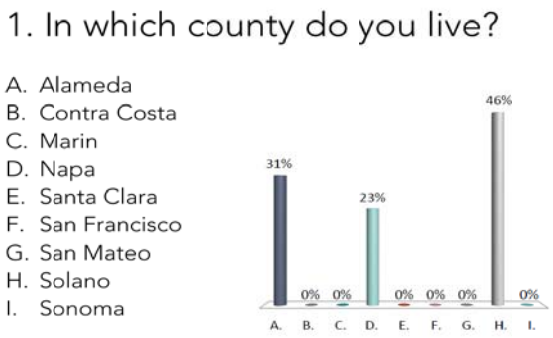
County of Residence

Participants were asked to indicate their county of residence. The responses are displayed below by workshop.

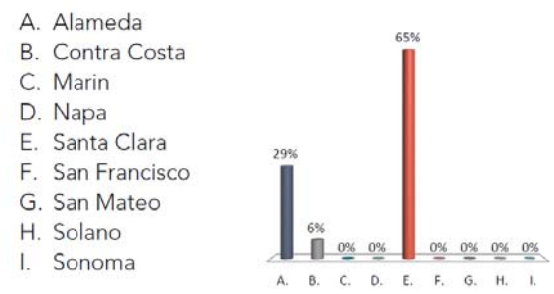
San Francisco Workshop



Vallejo Workshop



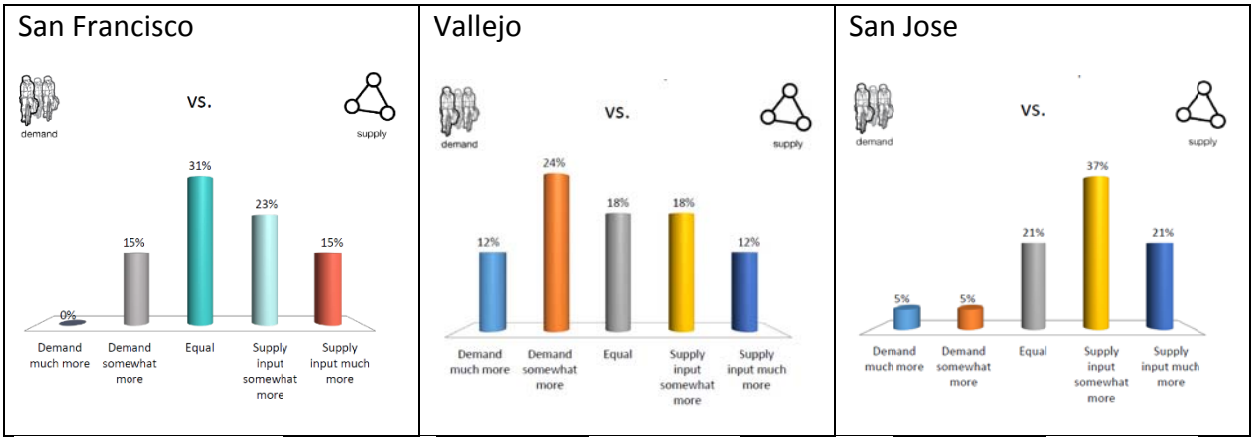
San Jose Workshop



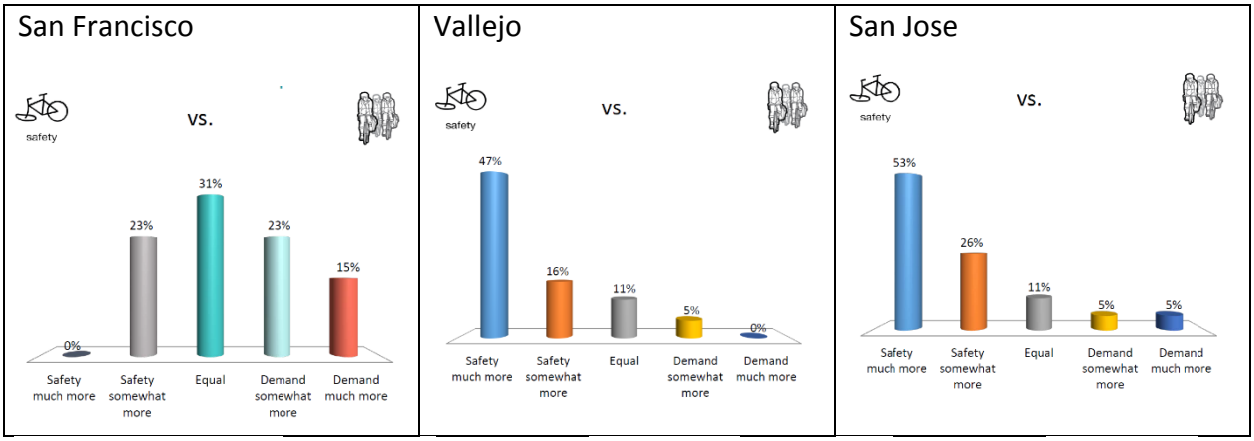
Bicycle Needs

Participants were asked to answer a series of questions regarding bicycle needs and priorities.

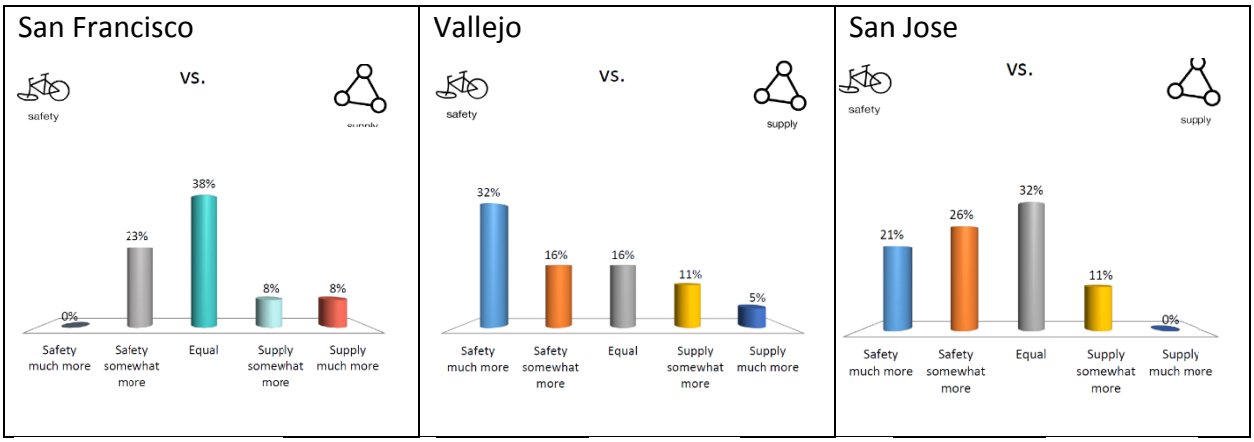
Which is most important? Demand vs. Supply



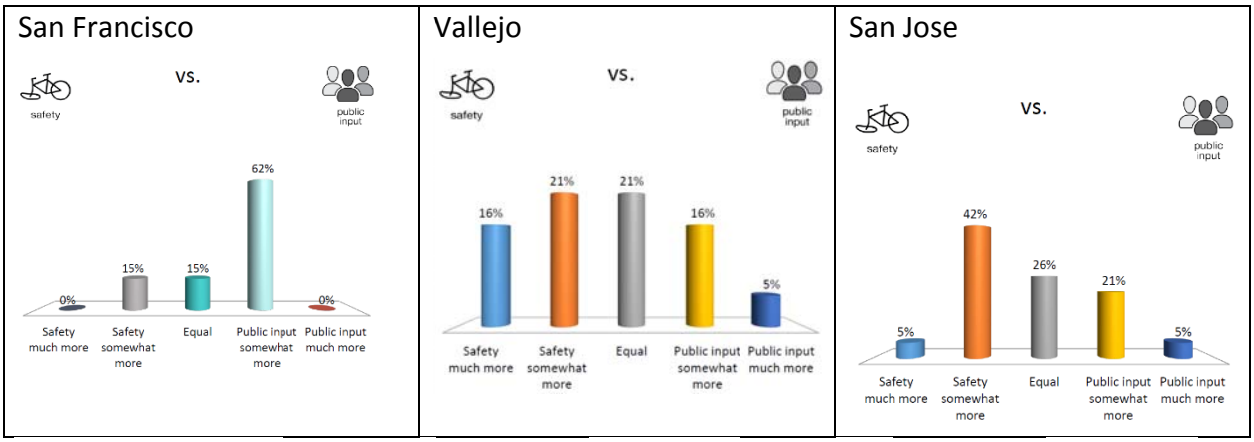
Which is most important? Safety vs. Demand



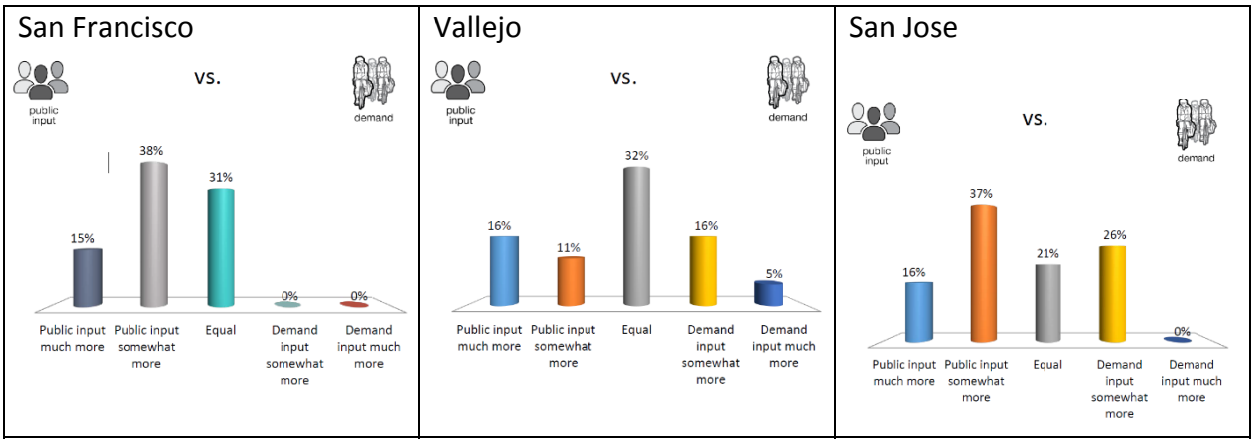
Which is most important? Safety vs. Supply



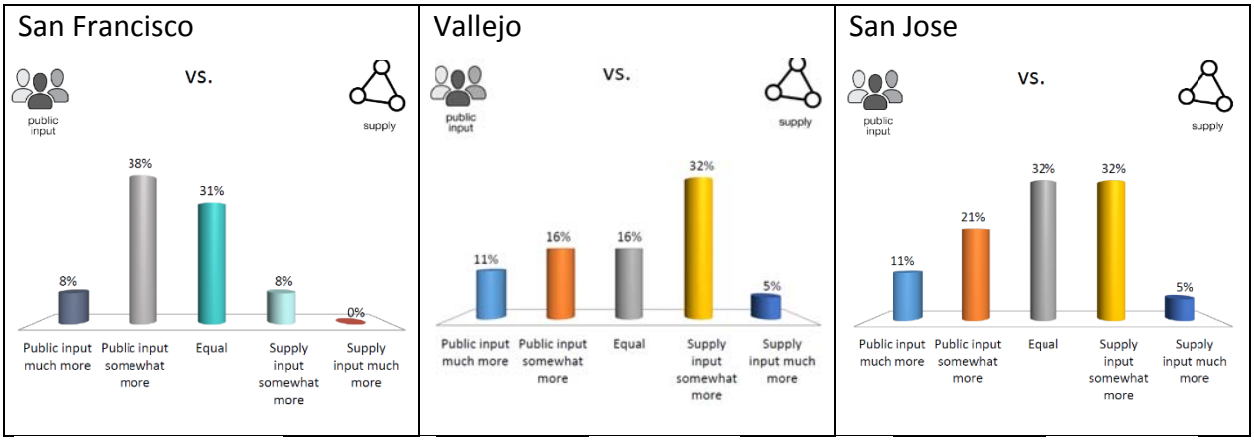
Which is most important? Supply vs. Public Input



Which is most important? Public Input vs. Demand



Which is most important? Public Input vs. Supply



V. Next Steps

The Planning Team will incorporate the workshop findings into the bicycle needs analysis and the overall development of the Caltrans District 4 Bicycle Plan. The Bicycle Plan will result in a prioritized list of projects and strategies to improve safety and mobility for bicyclists on and across the State-owned transportation network in District 4.

Caltrans District 4

Bicycle Plan

Caltrans District 4 Bicycle Plan Round 2 Workshop/Webinar Summary

December 2017

Caltrans

I. Introduction

The Caltrans District 4 Bicycle Plan will identify and prioritize investments to improve bicycling on and across the State-owned transportation network. District 4 includes Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma counties. Through this planning process, Caltrans has an opportunity to develop bicycle facilities that are safe, comfortable and convenient.

The State-owned transportation network, owned and operated by Caltrans, includes more than **700 miles of freeways and expressways and over 1500 miles of non-freeway State highways** throughout the Bay Area region. While cities and other local jurisdictions have responsibility for many more streets and roads, this Bicycle Plan will address barriers to bicyclists on and across State highways that are typically higher speed and have higher volumes of automobile travel.

As part of the outreach process, Caltrans hosted two rounds of three public workshops to collect community input across the Bay Area. The **goals and objectives of the second round of public workshops conducted in November 2017 were** to:

- Highlight the **new vision, mission and goals of Caltrans**, including those related to multimodal mobility, such as safety, health, sustainability, and livability;
- Educate the public and relevant stakeholders on **purpose and background of the Plan** and the District's role in bicycle transportation within a statewide, regional, and local context.
- Solicit and **facilitate public and stakeholder input** to inform the development of the Plan and meet its objectives in developing strategies and a list of projects to improve bicycle safety and mobility in District 4.
- Identify and **confirm safety and mobility needs** of bicyclists in the Bay Area.
- Identify stakeholders' ideas on how the Plan could potentially **support regional and local** bicycle planning and implementation efforts.

II. Workshop Overview and Participants

During the month of November, a series of three workshops and one webinar were conducted across the Bay Area region. The workshop dates and locations are listed below.

Date/Time	County	Total Attendees	City	Location
Thursday November 9, 2017 5:00-8:00 pm	Sonoma	25	Petaluma	Petaluma Community Center 320 N. McDowell Blvd. Petaluma
Tuesday, November 14, 2017 5:00-8:00 pm	San Mateo	38	Menlo Park	Arrillaga Family Recreation Center 700 Alma St. Menlo Park
Wednesday, November 15, 2017 5:00-8:00 pm	Alameda	33	West Oakland	West Oakland Youth Center 3233 Market St. Oakland
Thursday, November 30, 2017 1:00-3:00 pm	All	88	All	Online webinar

The workshops were conducted in an **interactive format, soliciting community input through live audience polling, presentations, maps, and comment forms**. Large display boards were arranged around the room in an "Open House" style to engage the public on the needs, barriers and opportunities for bicycling in the Bay Area. Approximately 25-40 participants attended each workshop and 88 participants attended the webinar. Audience participants included residents and representatives of the following organizations:

- Neighborhood associations
- Public agencies
- Bicycle and pedestrian advocacy groups
- Public transit and paratransit agencies
- Public health and environmental organizations
- Caltrans Divisions and Programs staff
- Bicycle touring clubs
- Schools and universities
- Other community interest groups

III. Workshop Format

The first hour of each workshop was an Open House, participants could view the display boards and talk to Alta Planning consultants and Caltrans staff regarding the data findings for each of the nine counties.

During the presentation, Sergio Ruiz, Pedestrian and Bicycle Coordinator of Caltrans District 4, welcomed the participants and explained the purpose of the Bicycle Plan. Sergio provided a brief overview of the new vision, mission and goals of Caltrans, which emphasize greater collaboration to help develop solutions and strategies that improve mobility for all modes of transportation. Sergio introduced Jamillah Jordan / Lou Hexter of MIG, Inc., facilitators with MIG, Inc., Caltrans' on-call public participation and engagement contractor, who gave an overview of the agenda and reviewed the process schedule.

Lou Hexter reviewed the workshop input opportunities which included live polling, open house display boards, and comment forms. Using the live audience polling technology, Lou asked a series of questions to the audience on county of residence, bicycle preferences and other topics.

Hugh Louch of Alta Planning provided a presentation on the bicycle needs analysis in the Bay Area based on the technical analysis conducted to date. Hugh then presented several live audience polling questions to assess audience preferences related to four types of bicycle improvements; conventional highway crossings, ramps/interchanges, over/under crossings, and corridor improvements. The workshops presentation is available in Appendix A.

Following the presentations, participants were invited to interact with the Open House display boards. The display boards provided background information on the Plan purpose, partners, and goals; a map of the State-owned transportation network; and, data results for each of the nine counties.

IV. KEY THEMES

In addition to in-person comments and questions, all participants were encouraged to document their comments on the comment cards and turn them in at the end of the meeting or through a follow-up email. Many comments were specific to certain counties and roads but several key themes that arose are summarized below.

General Themes:

- **More Bike Trails along Highways**: Participants expressed widespread support for more separated bike trails along state highways. They often referenced examples throughout the Bay Area and internationally.

- **Intersection Awareness:** Most participants shared that the most dangerous section of a biker's route is at intersections. They suggested implementing traffic designs that prioritize bikers such as bike lights or early lights for pedestrian and cyclist as well as clear bike lanes.

- **Wide Shoulder Clearly Marked in Rural Areas/ High Bike Traffic Routes:** Cyclists who travel along rural areas for recreation cycling or for commuting purposes, requested that the white line on the left shoulder by clearly marked.

- **Safe Crossings at Highways:** Participants frequently commented about the difficulty of crossing highways either through unsafe and poorly lit underpasses or poor-quality bridges. Crossing on and off ramps were also noted as being especially dangerous for cyclists and pedestrians.

- **Don't Ignore Low-Income Communities:** Participants noted that some low-income communities were missing from the initial data findings maps. They listed a few communities and requested that Caltrans take another look at low income communities to make sure all are captured and work projects within those areas are prioritized.

- **Clean Bike Lanes:** Debris often accumulates on existing bike trails and road shoulders creating dangerous biking conditions for cyclists. Participants suggested expanding street sweeping to include bike lanes and road shoulders.

- **Work with Cities to Continue Bike Lane Expansions:** As Caltrans projects get under way, participants suggested that Caltrans should connect and motivate cities to continue bike projects into local streets to create better bike network connectivity.

Petaluma Key Themes:

- 101 Underpasses are dangerous especially at Rowland/101 and Lakeville Hwy/101
- Extend the Napa Valley Vine Trail from Vallejo to Calistoga
- Add disadvantaged communities such as Guerneville, Monte Rio and Fruitvale
- Prioritize I-580 crossing

Menlo Park Themes:

- Improve Highway 84 crossings
- New Bike Bridge over 85 in Sunnyvale
- Ensure Bike Connectivity throughout El Camino Real
- Add disadvantaged communities such as East Palo Alto and East Menlo Park
- Consider Facebook Expansion's impact on Hwy 84 and surrounding highways
- Crossings along Highway 101 are dangerous (i.e. Bayfront Expressway)

West Oakland Themes:

- Scenic Route 84 has the potential to include a great bike trail
- Ensure safe crossings along San Pablo Avenue and Ashby Avenue
- Expand Bay Trail from Oakland to connect to San Francisco
- More permeability in Emeryville across I-80 and San Pablo
- I-680 is a huge barricade to cyclists
- Create bike lane across Richmond Bridge to San Rafael

V. Webinar

On Thursday, November 30, 2017, Caltrans conducted a webinar hosted at MIG at 800 Hearst Avenue, Berkeley, CA. The presentation followed a similar format as the Open House presentations in which Jamillah Jordan / Lou Hexter of MIG, welcomed all online participants. She explained the webinar functions and methods for participants. The webinar had a similar format to the Open Houses previously described in Section III.

After the presentations, participants were able to submit questions during and after the presentation through the webinar comment feature. All questions were repeated for the audience to hear and answered by Caltrans and Ata Planning.

VI. Live Audience Polling Results

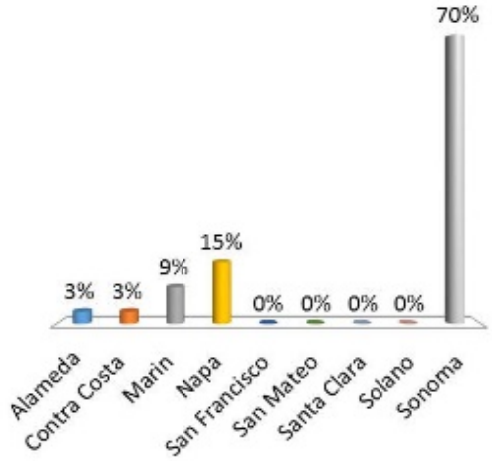
As previously noted, the workshop/ webinar presenters incorporated live polling questions to collect public input from participants. Responses are displayed on the following pages.

County of Residence

In which county do you live in?

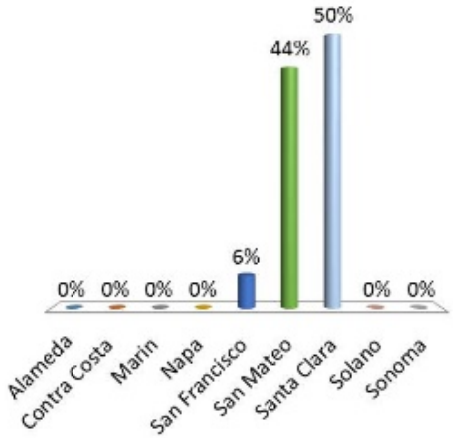
Petaluma Workshop

A. Alameda
B. Contra Costa
C. Marin
D. Napa
E. San Francisco
F. San Mateo
G. Santa Clara
H. Solano
I. Sonoma



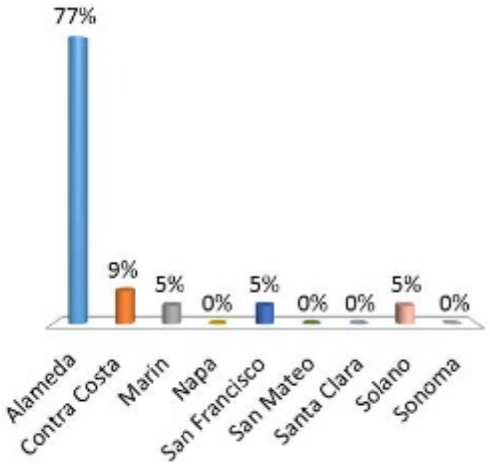
Menlo Park Workshop

A. Alameda
B. Contra Costa
C. Marin
D. Napa
E. San Francisco
F. San Mateo
G. Santa Clara
H. Solano
I. Sonoma

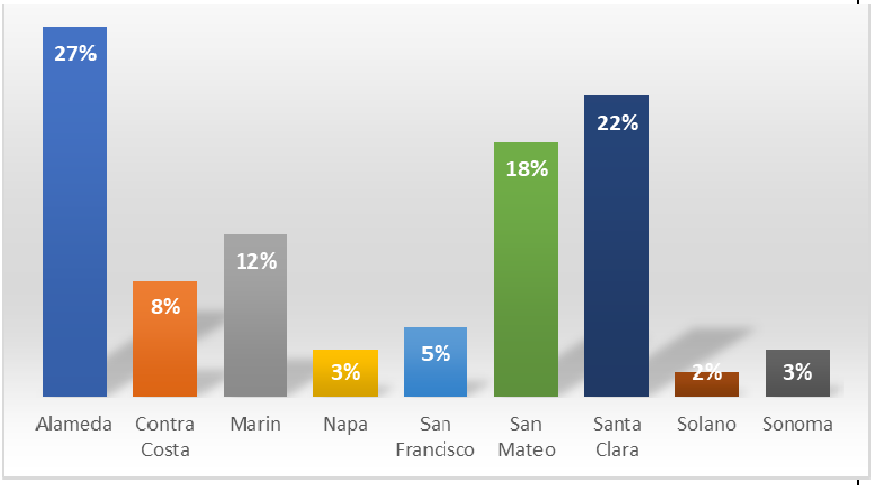


West Oakland Workshop

A. Alameda
B. Contra Costa
C. Marin
D. Napa
E. San Francisco
F. San Mateo
G. Santa Clara
H. Solano
I. Sonoma



Webinar

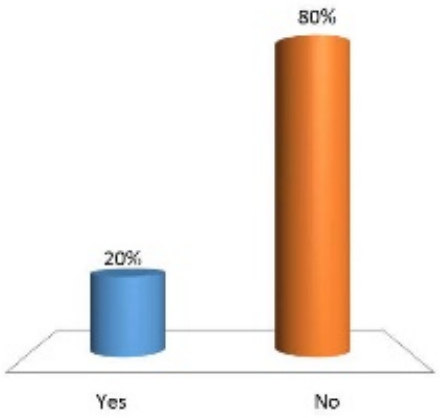


Mode of Transit to Workshop

Did you bike here?

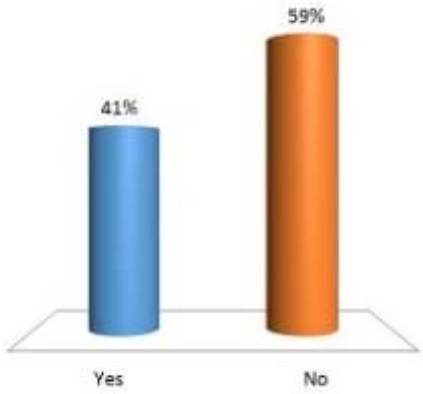
Petaluma Workshop

A. Yes
B. No



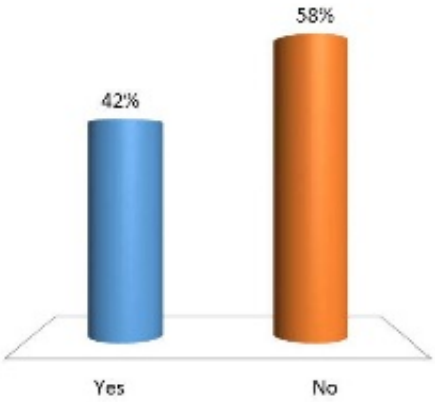
Menlo Park Workshop

A. Yes
B. No

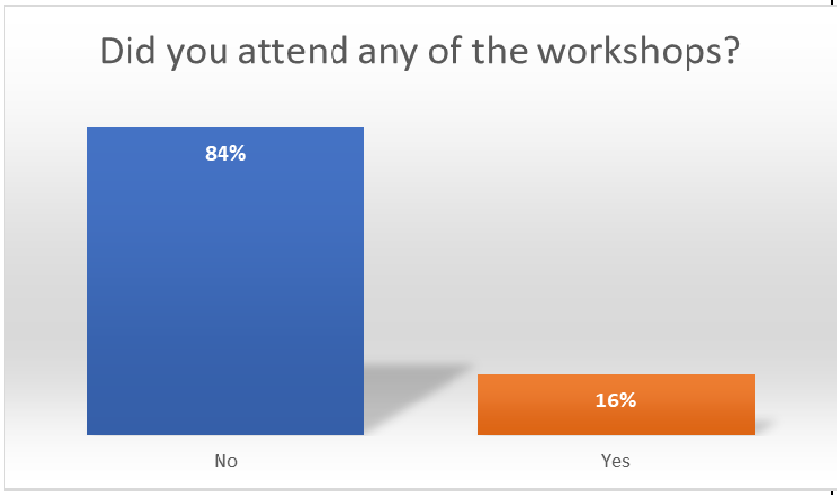


West Oakland Workshop

A. Yes
B. No



Webinar

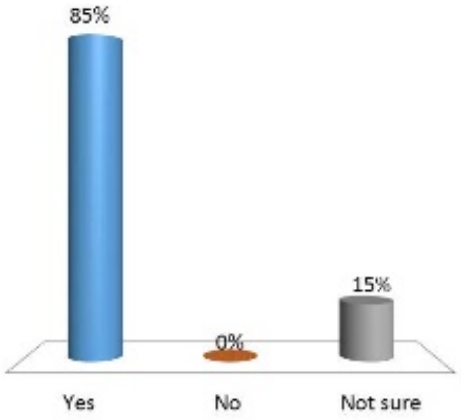


Transportation

Have you ever ridden your bike on the State-owned transportation network?

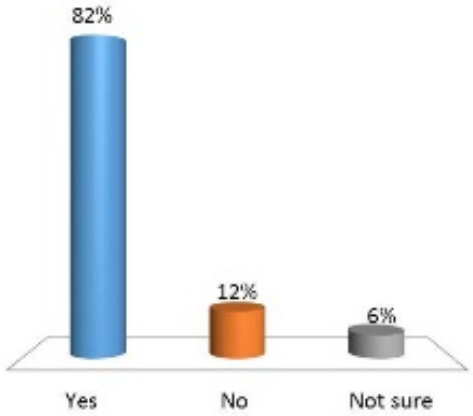
Petaluma Workshop

A. Yes
B. No
C. Not sure



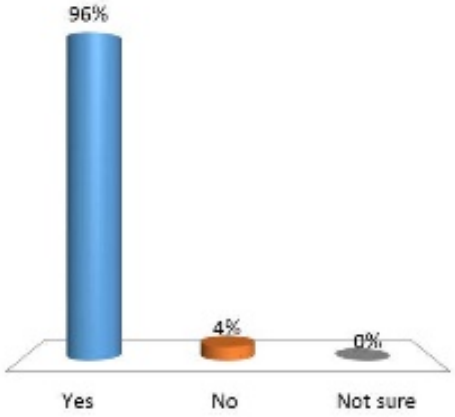
Menlo Park Workshop

A. Yes
B. No
C. Not sure

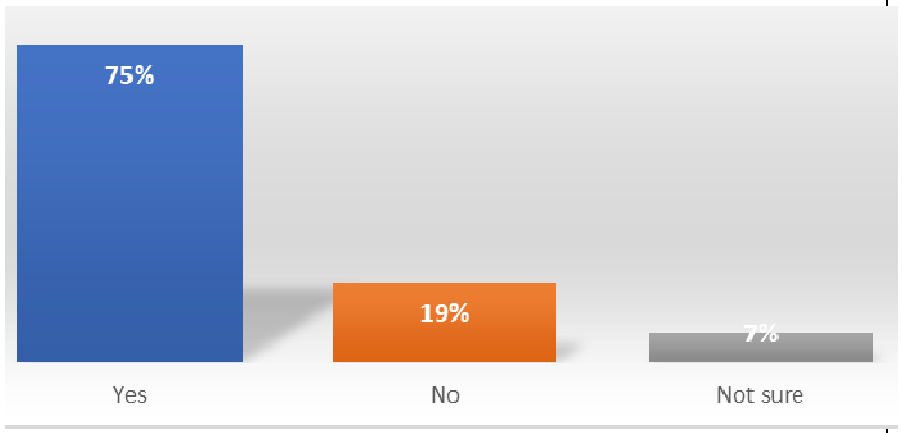


West Oakland Workshop

A. Yes
B. No
C. Not sure



Webinar

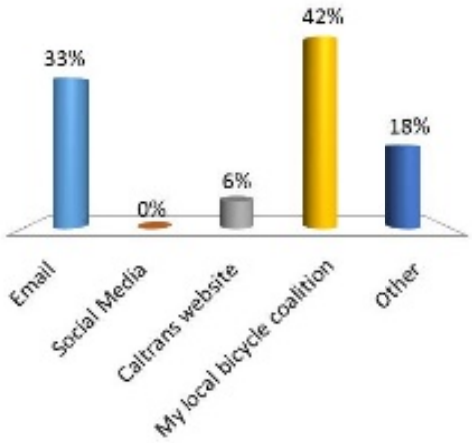


Workshop

How did you hear about today's workshop?

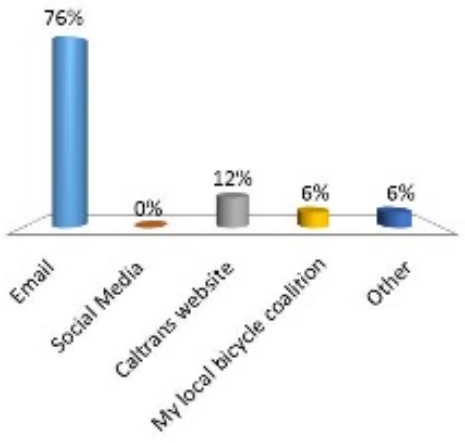
Petaluma Workshop

A. Email
B. Social Media
C. Caltrans website
D. My local bicycle coalition
E. Other



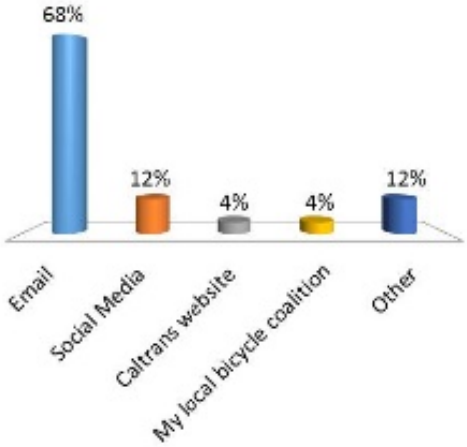
Menlo Park Workshop

A. Email
B. Social Media
C. Caltrans website
D. My local bicycle coalition
E. Other

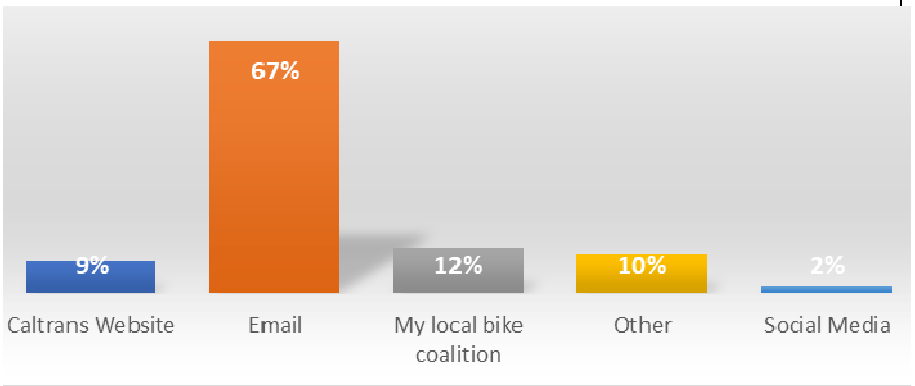


West Oakland Workshop

A. Email
B. Social Media
C. Caltrans website
D. My local bicycle coalition
E. Other



Webinar

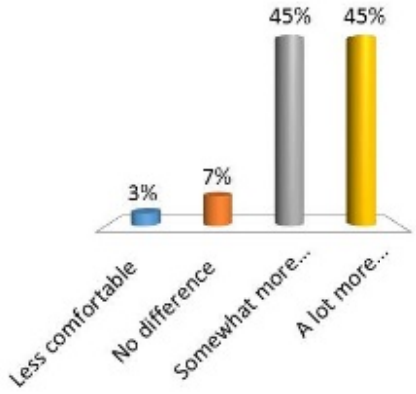


Bicycle Needs Assessment

Do the type of improvements below make you feel more comfortable or safer compared to existing, unmarked crossings?

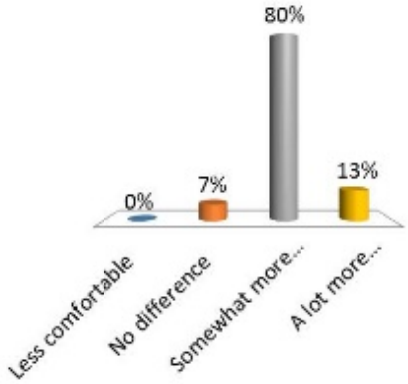
Petaluma Workshop

A. Less comfortable
B. No difference
C. Somewhat more comfortable
D. A lot more comfortable



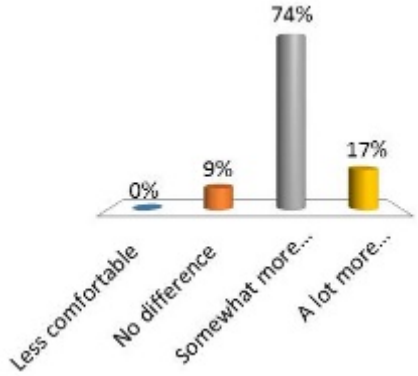
Menlo Park Workshop

A. Less comfortable
B. No difference
C. Somewhat more comfortable
D. A lot more comfortable

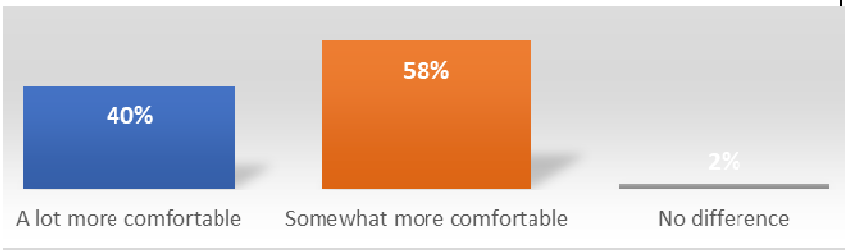


West Oakland Workshop

A. Less comfortable
B. No difference
C. Somewhat more comfortable
D. A lot more comfortable



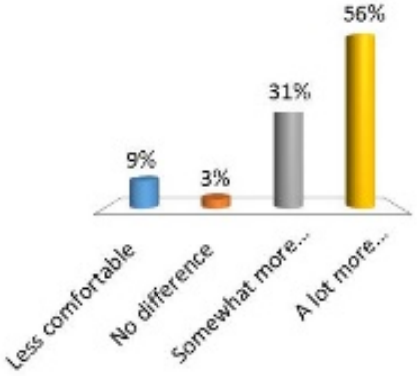
Webinar



How about a protected intersection? Would that make you feel more comfortable or more safe compared to existing, unmarked crossings?

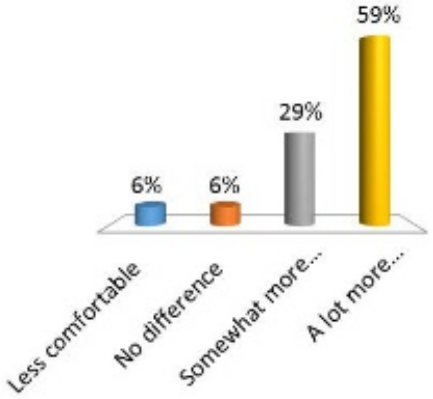
Petaluma Workshop

A. Less comfortable
B. No difference
C. Somewhat more comfortable
D. A lot more comfortable



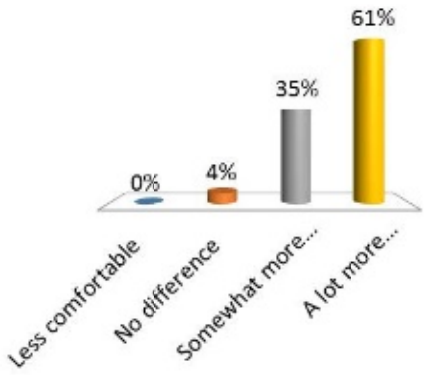
Menlo Park Workshop

A. Less comfortable
B. No difference
C. Somewhat more comfortable
D. A lot more comfortable

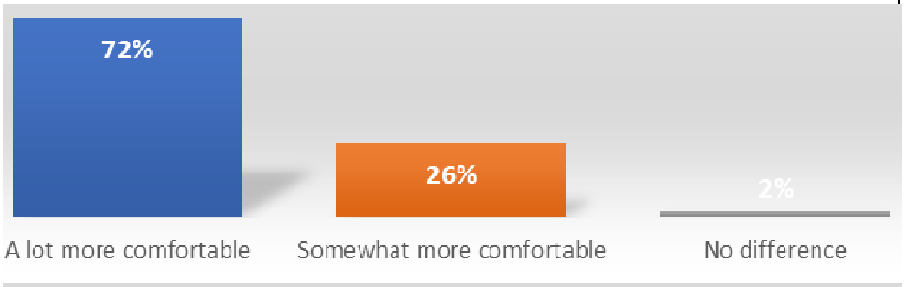


West Oakland Workshop

A. Less comfortable
B. No difference
C. Somewhat more comfortable
D. A lot more comfortable



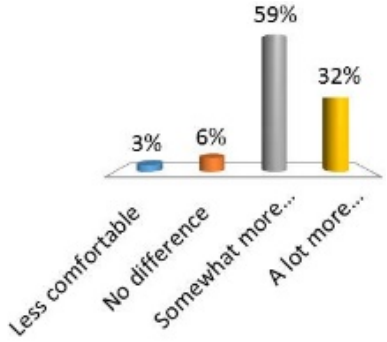
Webinar



Does marking of conflicts between bikes and cars make you feel more comfortable or safer compared to existing, unmarked ramps?

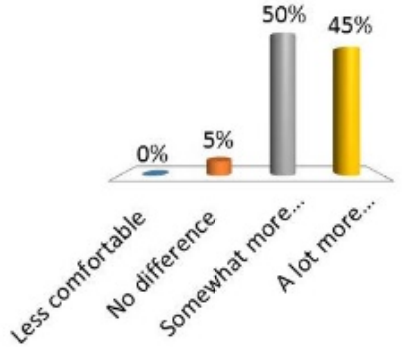
Petaluma Workshop

A. Less comfortable
B. No difference
C. Somewhat more comfortable
D. A lot more comfortable



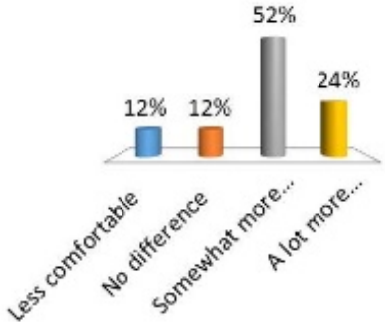
Menlo Park Workshop

A. Less comfortable
B. No difference
C. Somewhat more comfortable
D. A lot more comfortable

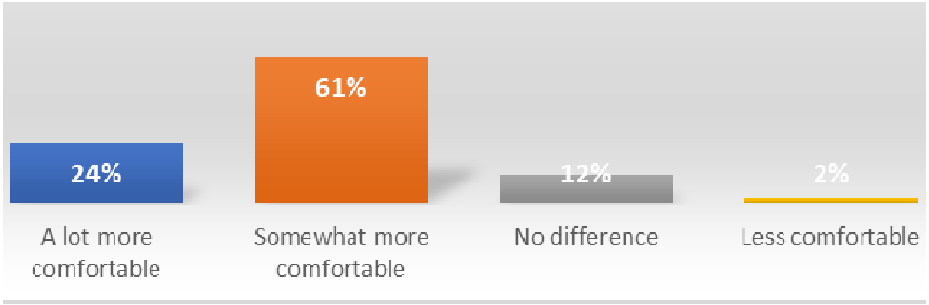


West Oakland Workshop

A. Less comfortable
B. No difference
C. Somewhat more comfortable
D. A lot more comfortable



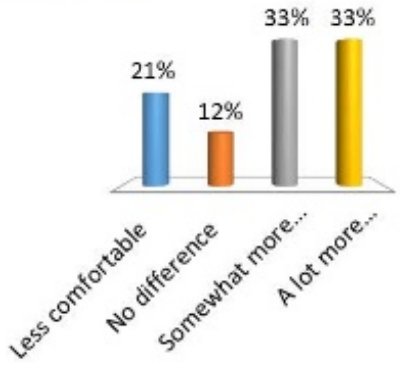
Webinar



How about greater separation? Would that make you feel more comfortable or safer compared to existing, unmarked ramps?

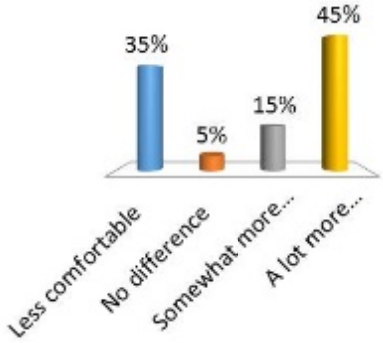
Petaluma Workshop

A. Less comfortable
B. No difference
C. Somewhat more comfortable
D. A lot more comfortable



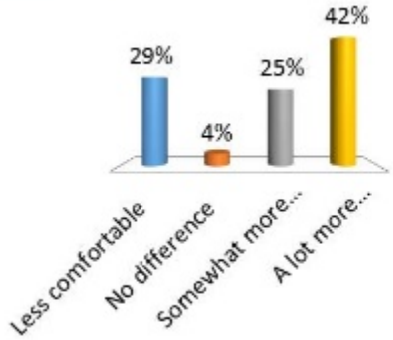
Menlo Park Workshop

A. Less comfortable
B. No difference
C. Somewhat more comfortable
D. A lot more comfortable

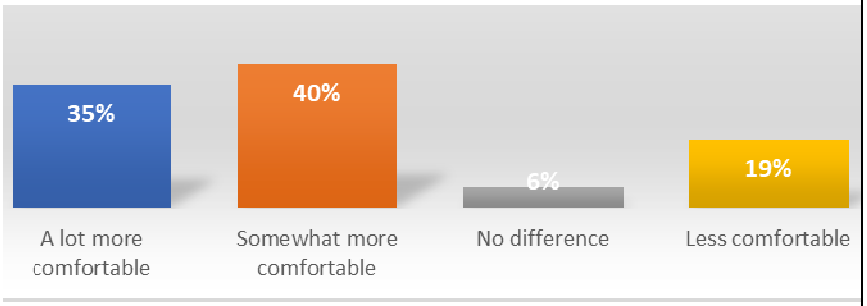


West Oakland Workshop

A. Less comfortable
B. No difference
C. Somewhat more comfortable
D. A lot more comfortable



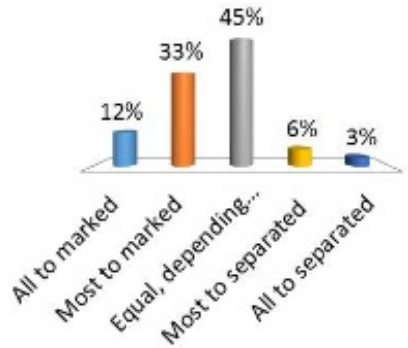
Webinar



Now consider cost? If you could have 5 unmarked crossings striped for each separated crossing, how would you allocate funds to these types of projects?

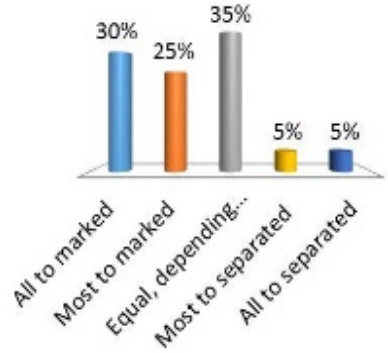
Petaluma Workshop

A. All to marked
B. Most to marked
C. Equal, depending on context
D. Most to separated
E. All to separated



Menlo Park Workshop

A. All to marked
B. Most to marked
C. Equal, depending on context
D. Most to separated
E. All to separated



West Oakland Workshop

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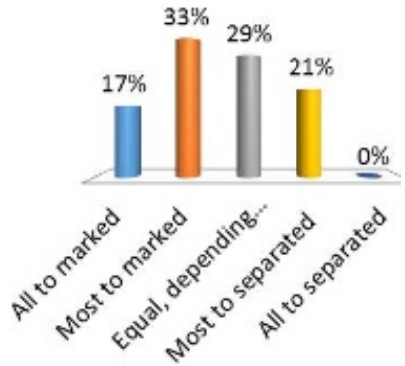
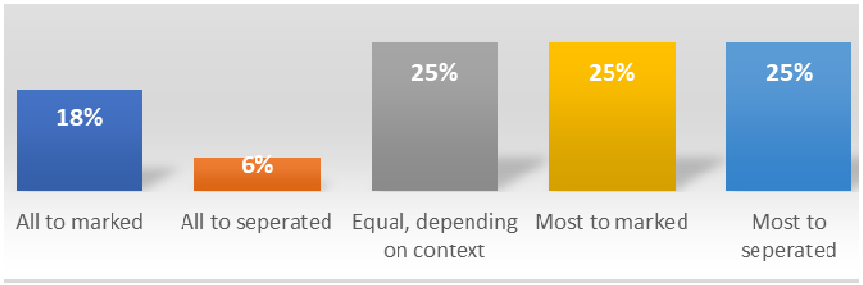
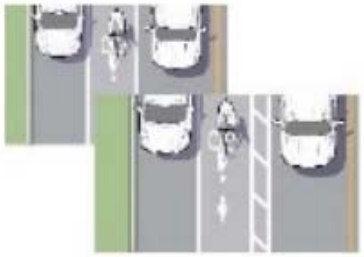
D. Most to separated
E. All to separated



Webinar



Considering that each separated (Class I or IV) facility costs 4 to 8 times the cost bike lanes (Class II or Class II buffered), wh u focus corridor improvements?



Petaluma Workshop

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C. Equal, depending on context
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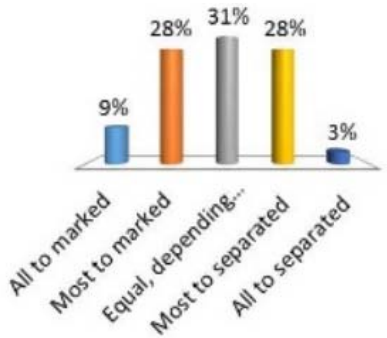
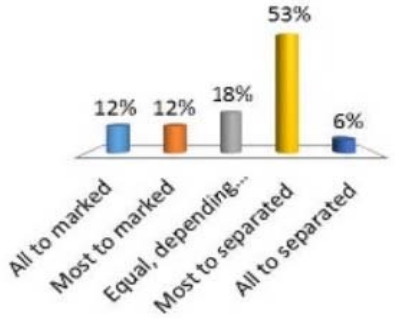
E. All to separated



Menlo Park Workshop

A. All to marked
B. Most to marked
C. Equal, depending on context
D. Most to separated
E. All to separated



West Oakland Workshop

A. All to marked
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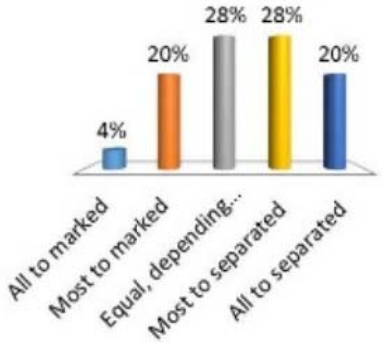
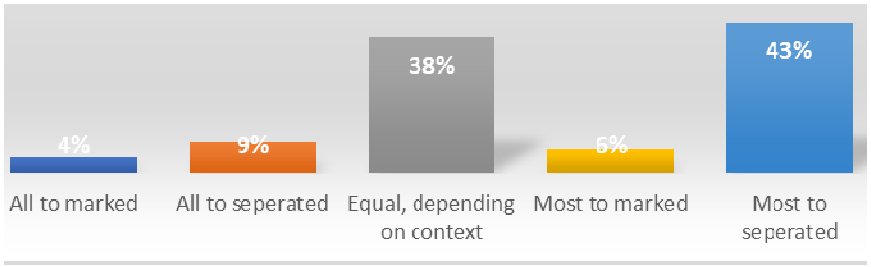


Webinar



VII. Next Steps

Caltrans created an online web tool to provide the public with an opportunity to comment on potential projects to be included in the District 4 Bicycle Plan. This tool allows individuals to review and comment on specific projects and to suggest new projects. All comments are due Friday, December 22, 2017. The Bicycle Plan will result in a prioritized list of projects and strategies to improve safety and mobility for bicyclists on and across the State-owned transportation network in District 4.

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Caltrans District 4 Bike Plan

for the San Francisco Bay Area

APPENDIX D

Needs Analysis

2018

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MEMORANDUM

100 Webster Street, Suite 300
Oakland, CA 94607
(510) 540-5008
www.altaplanning.com

To: Sergio Ruiz, Caltrans

From: Hugh Louch, Dara O'Byrne, Alta Planning + Design

Date: September 19, 2017

Re: District 4 Bicycle Needs Analysis Summary

Introduction

Caltrans District 4 serves the nine county Bay Area, including Sonoma, Napa, Solano, Marin, San Francisco, Contra Costa, Alameda, San Mateo and Santa Clara counties. As a part of the Caltrans District 4 Bicycle Plan, a needs analysis was performed to better understand the needs for bicycle transportation improvements on the state transportation system.

Summary of Approach

The overall goals of the needs analysis include:

- Identifying where the state transportation network serves bicyclists and where it does not
- Identifying how the state transportation network complements local and regional bicycle networks – the state transportation system is not the primary network for most bicycle travel, but can significantly impact the safety and comfort of that network
- Prioritize needs on and across the state network

The flow chart below depicts the basic process for conducting the needs assessment. Two general considerations shape the needs analysis - crossing the state highway system and traveling along state highway routes. The analysis recognizes that projects will be defined differently for access controlled routes (e.g., freeways) and conventional, surface highways that have many points of access. For each of these situations, the analysis looks at four factors – safety, demand, supply (quality of the network or crossing) and input from the public.

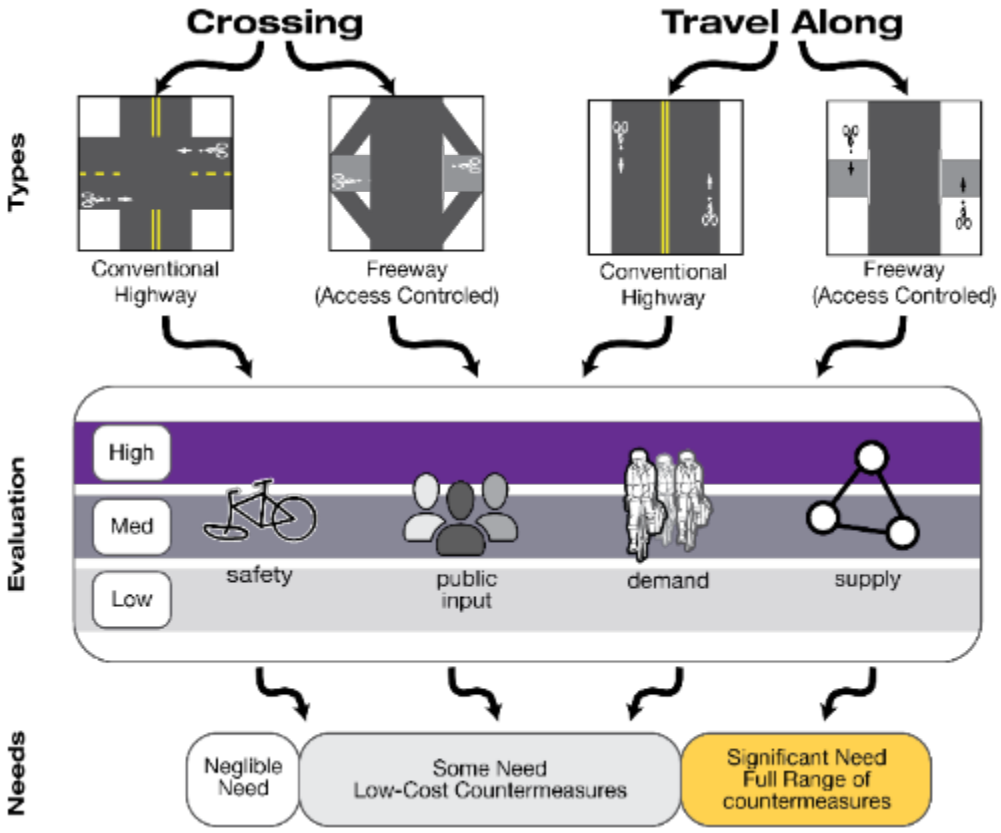
Ultimately, the objective of the needs analysis is to sort the entire state highway system into three broad categories:

- **High needs requiring unique projects**. These areas will yield highway improvements that require a unique, bicycle-focused project. These may include relatively low-cost signage and striping improvements, but are more likely to include new separate crossing, separated bikeways, major interchange or intersection improvements and other significant improvements
- **Typical needs to be integrated into other improvements**. Because bicyclists can access most of the state transportation system and following Caltrans Complete Streets policy (Deputy Directive 64, Revision 2), much of the state transportation system will have 'typical' needs that can be incorporated into regular maintenance, resurfacing, and similar types of improvements. These projects are typically funded through the State Highway Operations and Preservation Program

(SHOPP) and low-cost countermeasures that can be incorporated into these projects are appropriate.

- **Limited or no needs**. A small portion of the state transportation system may either provide reasonable accommodation for bicyclists currently or have limited need defined.

Figure 1 Needs Analysis Approach



As the process evolved for developing needs, two basic concerns emerged that shaped how the needs analysis was conducted. At its simplest level, the need for a bicycle facility on or across the state transportation system required meeting two conditions:

- **Significant demand for or current use of the system** – do a significant number of bicyclists currently use/cross or desire to use/cross a specific location of the state highway system?
- **Presence of a significant safety concern, challenge, or barrier** – have bicyclists experienced high numbers (or severity) of collisions or do they avoid using or crossing the system due to perceived challenges?

We gathered both direct and indirect measures to answer each of these questions using four primary data sources:

- Demand - the Metropolitan Transportation Commission (MTC) travel demand model provided an indirect measure of potential bicycle trips
- Safety - the Statewide Integrated Traffic Records System (SWITRS) collects on traffic collisions that is used as a direct measure of safety.

- Supply/Connectivity - data from Caltrans on the state highway system and Open Street Maps (OSM) was used to identify the level of traffic stress of both the state highway system and crossings.
- Public Input - a survey was conducted as part of this project, to gather geographic information about bicycling needs.

Table 1 summarizes the data sources and measures used as part of this approach.

Table 1 - Summary of Needs Performance Measures

Data Source	Measure	Type*
Demand/System Use Measures		
MTC Model	Estimated likely bicycle trips	Indirect
Public Input	Locations of current network use/crossing (direct)	Direct
	Locations of desired network use/crossing	Direct
Safety/Challenge/Barrier Measures		
SWITRS	Existing bicycle collisions by severity	Direct
Caltrans/OSM Network data	Level of traffic stress	Indirect
Public Input	Locations where State highway system is a barrier	Direct

The remainder of this report provides details on the calculation of each of these measures by the four data sources used to calculate the measure.

MTC Demand

A key element in the identification of needs is that bicyclists currently travel along/across the state transportation system or would travel along/across the state transportation system if a facility were available. We use data from the Metropolitan Transportation Commission (MTC) travel demand model to identify the latent demand for bicycling on and across the state transportation network. “Latent demand” here is defined as trips that are currently made by any mode that could be made by bicycle.

Approach

The MTC model is a tour-based random utility model that predicts trips for the population of the 9-county Bay Area. Tour-based models consider each leg of the trip and the linkages between them when estimating the travel mode chosen. The MTC model predicts travel tours for the Bay Area for an “average workday”, based on statistical models developed using the California Household Travel Survey, demographic data on the region, and characteristics of the travel network. We use MTC’s predicted trips for the region to assess where bicycling-length trips are currently conducted.

For each predicted trip, the trip distance is evaluated using the shorter of the automobile and bicycle network distance skims. Both the bicycle and automobile network distances are considered to reflect the fact that, in some cases, automobile links are available that do not serve bicyclists, but could be retrofitted. To generate an estimate of bicycle trip potential, each trip is weighted based on the trip length, with the weights derived from the 2009 California Household Travel Survey (Figure 1).

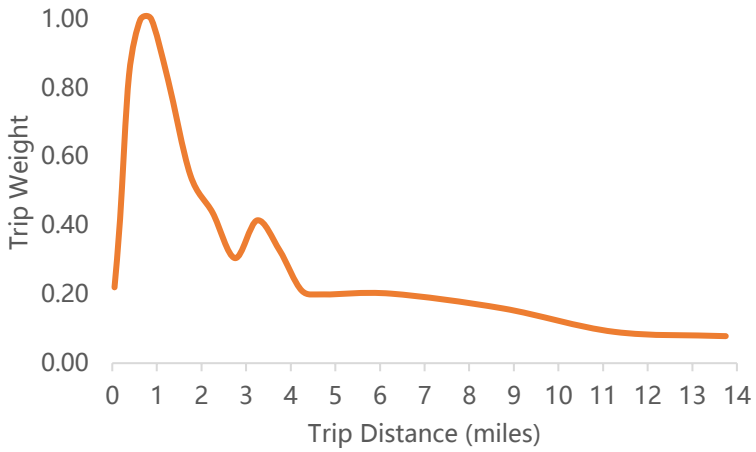


Figure 2 Bicycle Potential Trip Weight by Travel Distance

Trip weights are applied to reflect the fact that even if the bicycle network is improved, longer trips are less likely to be made by bicycle than short trips, with the exception that trips under a half or quarter mile would likely continue to be made by walking. These patterns could shift in the future with more longer trips made by bicycle, either as a result of improved route and end-of-trip infrastructure or wider uptake of technological advances such as e-bikes. However, in the interest of conservative estimation of benefits, current conditions are assumed.

For each origin and destination travel analysis zone (TAZ), we calculate the number of total weighted trips, yielding the relative weight associated with travel on each O-D corridor. A straight line is drawn connecting each origin and destination with a non-zero number of trips between them representing the shortest path that would be taken, and a buffer is generated at 20% of the length to account for out-of-direction travel that may be made by the cyclist to stay on the underlying network, and to access preferred route alternatives. A buffer is used here to represent travel patterns for two reasons: it does not presume that we know the routes that would be chosen by cyclists, and it allows us to consider demand at locations where bicyclists are not currently served by the system.

Figure 2 shows example demand polygons colored by their trip weights. Longer trips have larger zones of influence (width), but lower probability of travel by bicycle (lighter shading).

The final step in the demand evaluation aggregates the demand from each origin and destination, as many corridors can overlap with one another. Hexagonal binning is used (Figure 3). A grid of hexagons is defined in the vicinity of the state transportation network. For each hexagon, the trip totals for each of the intersecting demand polygons are summed to yield a total relative demand value across the network. The state highway facilities are then assigned demand values from the hexagons that they travel through.

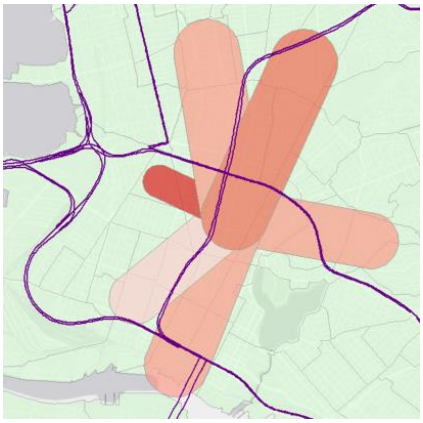


Figure 3 Demand Polygon Example (Oakland, CA)

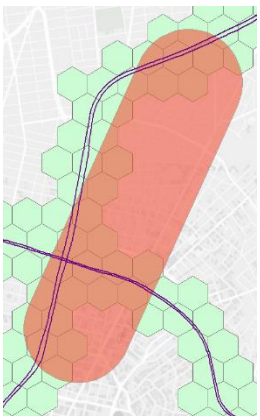


Figure 4 Hexagonal Binning Example

This approach provides an estimate of the level of latent demand for bicycling in the vicinity of each segment of the state transportation network. It is not intended to be an accurate representation of how many people will bicycle on or across the system, only a method to estimate

Scoring

Consistent with each of the measures, a four-point scale was created for the demand analysis to represent the level of demand on the state transportation system, using the thresholds identified in Table 2.

Table 2 Demand Thresholds for Needs Scoring

Score	Description
0	Bicycling not permitted or no potential demand
1	Rural roads between towns Fewer than 100 potential trips
2	Rural and small urban areas with low levels of development Expect 100 to several hundred potential trips
3	Small towns and more urbanized areas but not downtowns Expect several hundred to 1,000 potential trips
4	Downtowns, dense areas, many short trips Expect more than 1,000 potential trips

Results

The results for demand, safety, and supply were combined and presented together as part of the public outreach conducted for the District 4 Bike Plan. Maps of these results can be found at the end of the Supply Section (Page 13).

Safety

Safety was evaluated as part of the needs analysis by examining current collisions for bicyclists on the state transportation system. This approach to incorporating safety into the needs analysis represents a direct measure of potential challenges that bicyclists may face using the state transportation system. It is complemented by other indirect measures that are intended to capture where bicyclists do not travel because of potential barriers or safety challenges.

Approach

The safety analysis was performed using 11 years of bicycle collision, from 2005 through 2015, obtained from the Caltrans Traffic Accident Surveillance and Analysis System (TASAS) database. This database provides summary collision data from California Highway Patrol (CHP) reports of collisions on state highway routes. California Highway Patrol is the agency responsible for digital collection of collisions data on the state transportation system, with a reporting threshold of $500 or personal injury.

Collision data in the TASAS database are stored in a number of files; for this analysis, the collision data file contained an entry for every party to a bicycle collision in the eleven-year study period—5,626 entries for 2,914 collisions – the multiple entries represent the individual parties involved in each collision. Each entry in the collision data includes information about the collision and identifies the point on the roadway where it occurred, including the highway milepost location, location type of the collision (highway, ramp terminal intersection, or intersection), primary contributing factors, movements preceding the collision, direction of travel, weather, roadway conditions, influence of alcohol, collision type, types of vehicles or parties involved, and more.

The TASAS collision data includes the number of occupants killed and injured in each collision but does not detail the reported severity of injuries. This information was gathered from the CHP's online Statewide Integrated Traffic Records System (SWITRS) database. The SWITRS database contains records for each reported collision and includes the collision severity levels listed in Table 3. Before conducting the safety analysis, SWITRS collision records were matched to the records in the TASAS database using collision date, time of day, county location, and cited collision type.

Table 3: Collision Severity Levels

Collision Severity Level	Description
1	Fatal
2	Severe Injury
3	Injury - Other Visible
4	Injury - Complaint of Pain
5	Property Damage Only (PDO)

Source: SWITRS

The collision data also feature an attribute that describes the location type of each collision: highway, intersection, or ramp terminal intersection. This attribute was used to organize the 2,914 collisions into separate groups based on location (Table 4).

Table 4: Collisions by Location

Location	Collisions
Segment	1,287
Intersection	906
Ramp	721

A quality control review of collisions location coding was conducted. A sample of ramp terminal intersection and intersection collisions were coded at the correct location. Segment collisions were reviewed for collisions located within 250 feet of an intersection to determine if they were possibly miscoded. No systematic errors were found in the coding of locations.

Scoring

High-priority highway segments, ramps, and intersections were identified using a modified version of the Equivalent Property Damage Only (EPDO) network screening performance measure from the Highway Safety Manual (HSM). The EPDO performance measure assigns weighting factors to collisions by severity relative to property damage only (PDO) collisions. The initial analysis used an EPDO performance measure with the weighting factors provided by Caltrans' 2016 benefit-cost parameters (Cal-B/C). However, the Cal-B/C framework weighs a fatal collision more than 20 times more heavily than a collision involving a severe injury. To support display and communication of the needs analysis, each metric was placed into a four-point scale. Using the EPDO measure for this purpose would have resulted in a scale where most categories had only various numbers of fatalities, with all injuries, regardless of severity, coded into the lowest category. Table 5 presents the scaling chosen to better capture the relative severity of collisions.

Table 5 Location Tiers based on Collision Severity and Frequency

Priority Tier	Conditions
4	Location has at least one fatal collision or at least two severe injury collisions
3	Location has at least one severe injury collision or at least three "other visible injury" collisions
2	Location has at least one "other visible injury" collision or at least three "complaint of pain" collisions
1	Location has at least one "complaint of pain" collision
0	Location has exclusively property damage only collisions, no collisions, or bicyclists are not permitted

The scoring process was run for the full 11 years of data and subsequently rerun for the most recent five years of available data (2011-2015) to better account for recent roadway improvements and changes in bicycle collision patterns over time. The methodology to screen the three location types (ramp, intersection, segment) were as follows:

- **Ramp Methodology**. Reported ramp collisions were first coded by severity. The 721 ramp collisions were then organized by alignment and spatially joined to the nearest ramp on the same alignment in the network using ArcGIS, aggregating collision severity data at each ramp. The ramps were summarized using the scoring criteria presented in Table 6.
- **Intersection Methodology**. Reported intersection collisions were first coded by severity. Then the 906 intersection collisions were spatially joined to the nearest intersection using ArcGIS, aggregating collision severity data at each intersection. The intersections were then summarized using the scoring criteria presented in Table 6.
- **Highway Segment Methodology**. Reported segment collisions were first coded by severity. A Python script was run in ArcGIS to segment the highway network into one-mile segments using the HSM sliding window methodology. The sliding window methodology takes a window of a specified length and moves the "window" along each roadway from beginning to end in increments of a specified distance. A mile-long window with a half-mile increment was used for the purposes of the District 4 analysis. Consistent with the HSM guidelines, the mile-long window length represents a segment length appropriate to the macro scale regional analysis to help identify priority locations for further review. This methodology helps to identify the portions of roadways with the greatest potential for reduction of collision frequency and severity through safety improvements. Once the sub-portions of the roadway segments have been created (i.e., "window"), the script spatially joins associated collisions (including those at intersections) to the corridor segment. Similar to the ramp and intersection methodology above, the collisions are summarized to assign a priority tier as shown in Table 5.

Results

The results for safety, demand, and supply were combined and presented together as part of the public outreach conducted for the District 4 Bike Plan. Maps of these results can be found at the end of the Supply Section (Page 13).

Supply (Level of Traffic Stress)

To analyze the existing supply, a Level of Traffic Stress approach is used to quantify the amount of stress a bicyclist experiences on the state highway system and on crossings of the state highway system. Level of Traffic Stress presents an indirect measure of challenges and barriers, indicating parts of the state transportation system that do not appeal to a wide range of potential bicyclists.

Approach

Level of Traffic Stress (LTS) is a concept developed at the Mineta Institute of San Jose State University.[1] LTS is a new approach to evaluating bikeways that considers how different types of bicyclists use the transportation system. It provides a four-point scale from least stressful to most stressful. Table 6 summarizes the scale. Typically, higher speed and higher volume automobile traffic increase stress, while bikeways that increase separation lower stress.

Table 6 Level of Traffic Stress Scores

LTS Score	User Group*	Typical Network Examples
1	The level most children can tolerate	Off-street paths
	The level that will be tolerated by the mainstream adult population. 'Interested, but concerned'.	Low speed, shared streets; bike lanes on low volume streets
	The level tolerated by American cyclists who are 'enthused and confident' but still prefer having their own dedicated space for riding	Bike lanes on higher volume streets
4	a level tolerated only by those characterized as 'strong and fearless'	No facility provided

* User group definitions cited from Maaza C. Mekuria, Peter G. Furth, and Hilary Nixon, *Low-Stress Bicycling and Network Connectivity*, MTI Project 1005, May 2012 and linked to common user type terminology.

Several data sources were used to generate the LTS estimates for the District 4 plan, including:

- State highway database. These data include locations and characteristics for state highways and was the primary data source used to estimate LTS on the state highway system itself
- District 4 Bike Map. This data source identified existing bicycle facilities on and parallel to SHS.
- Open Street Map (OSM). OSM provides a comprehensive source of data for crossing opportunities and information about the local network.

Scoring

LTS was developed focused primarily on the primary travel way for bicyclists. A unique approach was used for the state transportation system, due to the unique characteristics of that system. LTS was coded for

[1] http://transweb.sjsu.edu/project/1005.html

three situations - segments, conventional highway intersections, and highway ramps. Color coding is used throughout this part of the memo to reflect a typical LTS color scheme.

Segment Level LTS Scoring

LTS was coded for highway segments where bicyclists are permitted. This excludes most of the access controlled system of freeways and expressways, though the few segments of this portion of the network that allow bicycles were captured (e.g., CA-24 permits bicyclists for a short segment between the Caldecott Tunnel and Orinda).

Table 7 presents LTS coding for urban bikeway segments. Table 8 presents LTS coding for all other segments (rural and urban) with mixed traffic. Table 9 presents the coding of parallel routes.

Table 7 LTS Score for Urban Bikeway Segments

Number of Lanes	Bike Lane	Shared Use Path
2	2	1
> 2	3	1

Table 8 LTS Score for Mixed Traffic and Shoulder Riding

Traffic Volume	Shoulder Width (Feet)		
	<2	2 <4	>=4
<400	2	2	2
400 - 1500	3	2	2
1500 - 7000	4	3	2
> 7000	4	4	3

Adopted from the Oregon DOT Analysis Procedure Manual

Table 9 LTS Score for Parallel Segments

Facility Type	Shared	Bike Lane	Buffered Bike Lane
Shared use path	1	1	1
Local	2	2	2
Minor Collector	3	2	2

Facility Type	Shared	Bike Lane	Buffered Bike Lane
Major Collector	3	3	2
Arterials	4	3	3

Intersection LTS Scoring

Traditional LTS analysis focuses on signalization of the intersection to determine LTS, not considering the approach facilities or other features of the crossing. For the state highway system, with higher overall speeds, significant turning movements on to the network, and other high stress features, a new method was developed that considers both the crossing itself and the approach to the intersection. Table 10 presents the LTS coding for the intersection and Table 11 presents the LTS coding for the intersection approach. The worse of the two values is used to code the LTS of the crossing.

For the purposes of evaluating and identifying projects, additional features were considered including:

- Markings through the intersection to provide bike lane continuation
- Advanced intersection protection such as protected intersections.
- Use of roundabouts and accommodation of bicyclists at the roundabout

These improvements generally can create lower stress crossing, but do not generally existing in many locations currently. As such they were not coded into existing conditions.

Table 10 LTS Score for Intersection Crossing

Median Width >= 6'	1-2					
	3-4					
	5+					
Median Width < 6' or No Median	1-2					
	3-4					
	5+					

** Cross street 2-way stop provides the LTS coding for the primary direction (not the street with the 2-way stop)*

Table 11 LTS Score for Intersection Approach

Through Lanes on Cross Street	No Right Turn Channel	Right Turn Channel
1-2	1	2

Through Lanes on Cross Street	No Right Turn Channel	Right Turn Channel
3+	3	4

Highway Ramp LTS Scoring

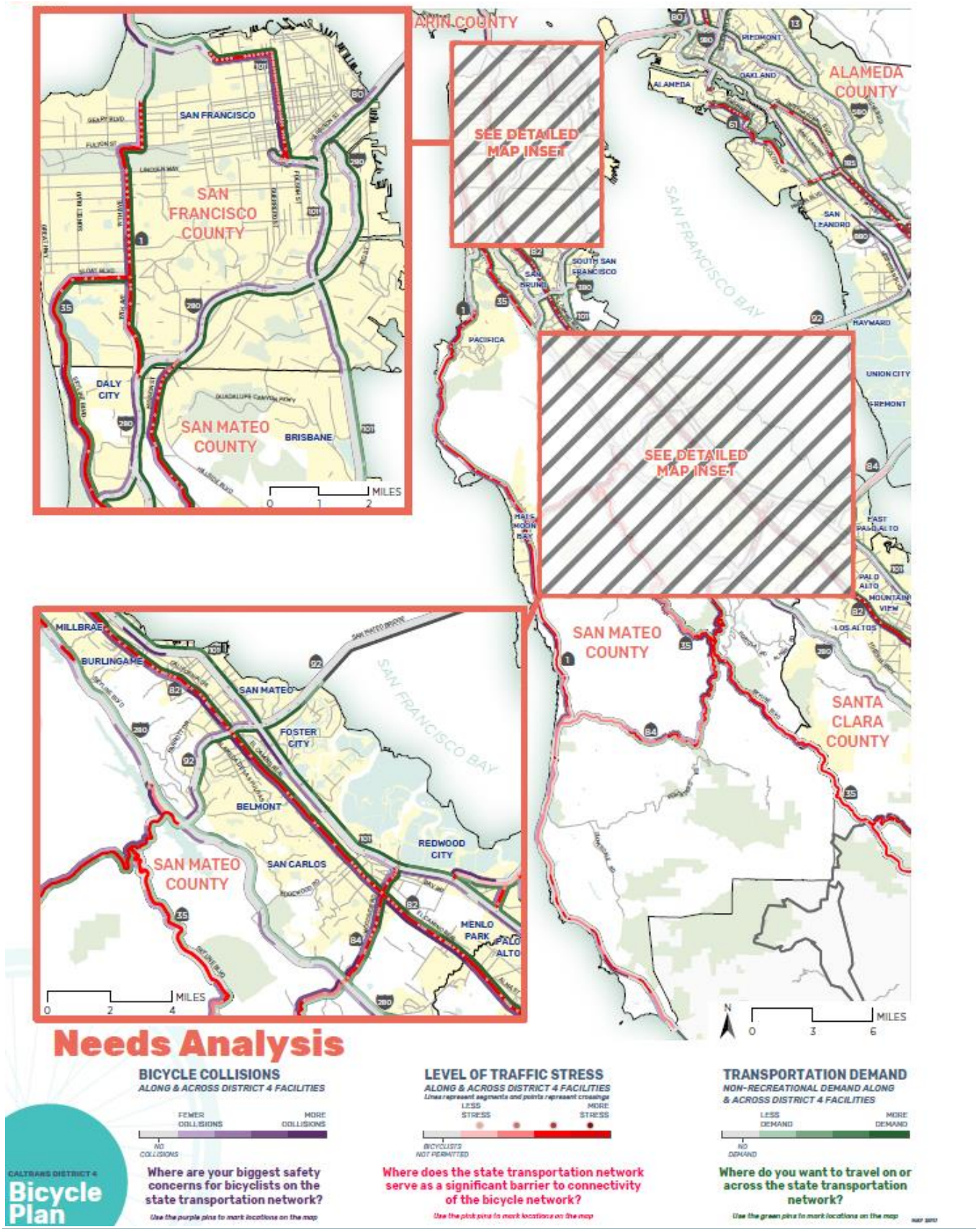
The third type of facility that was coded were the ramps to access controlled facilities. This coding combined information about crossing type and information about the highway ramps. Table X presents the coding, including coding of facilities that cross highways but do not have ramps. Given limited information, this coding relied on data from OSM to capture the functional classification and bike facilities on the crossing route.

Roadway Class of Crossing		No Ramps	Ramps With Signals	Ramps No Signals
Local	Bike Path			4
	Bike Lane			4
	No Bike Facility			4
Collector	Bike Path			4
	Bike Lane			4
	No Bike Facility			4
Minor Arterial	Bike Path			4
	Bike Lane			4
	No Bike Facility		4	4
Primary Arterial	Bike Path			4
	Bike Lane		4	4
	No Bike Facility	4	4	4

Note: bike path includes separated bikeways

Results

The results for supply, demand, and safety were combined and presented together as part of the public outreach conducted for the District 4 Bike Plan. Maps of these results are provided below, separately for four areas of the region.


SAN FRANCISCO
SAN FRANCISCO COUNTY
DALY CITY
SAN MATEO COUNTY
BRISBANE
MILES
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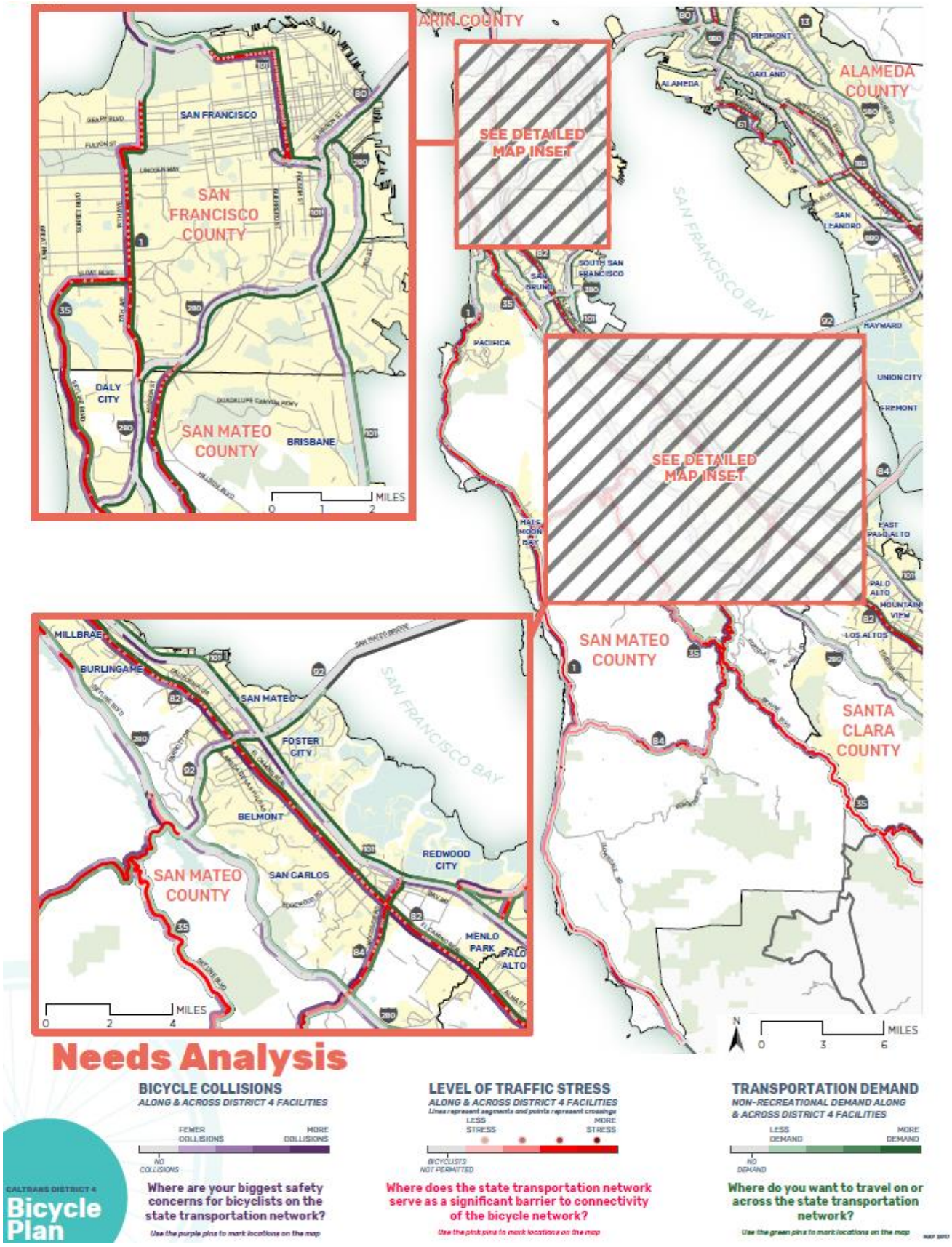
MARIN COUNTY
SEE DETAILED MAP INSET
ALAMEDA COUNTY
PIEDMONT
OAKLAND
ALAMEDA
SAN LEANDRO
SAN FRANCISCO BAY
SOUTH SAN FRANCISCO
SAN BRUNO
PACIFICA
HAYWARD
UNION CITY
FREMONT
SEE DETAILED MAP INSET
HALF MOON BAY
EAST PALO ALTO
PALO ALTO
MOUNTAIN VIEW
LOS ALTOS
SAN MATEO COUNTY
SANTA CLARA COUNTY
MILLBRAE
BURLINGAME
SAN MATEO
FOSTER CITY
BELMONT
REDWOOD CITY
SAN MATEO COUNTY
SAN CARLOS
MENLO PARK
PALO ALTO
MILES
0 2 4
N
MILES
0 3 6
Needs Analysis
BICYCLE COLLISIONS
ALONG & ACROSS DISTRICT 4 FACILITIES
FEWER COLLISIONS
MORE COLLISIONS
NO COLLISIONS
Where are your biggest safety concerns for bicyclists on the state transportation network?
Use the purple pins to mark locations on the map
LEVEL OF TRAFFIC STRESS
ALONG & ACROSS DISTRICT 4 FACILITIES
Lines represent segments and points represent crossings
LESS STRESS
MORE STRESS
BICYCLISTS NOT PERMITTED
Where does the state transportation network serve as a significant barrier to connectivity of the bicycle network?
Use the pink pins to mark locations on the map
TRANSPORTATION DEMAND
NON-RECREATIONAL DEMAND ALONG & ACROSS DISTRICT 4 FACILITIES
LESS DEMAND
MORE DEMAND
NO DEMAND
Where do you want to travel on or across the state transportation network?
Use the green pins to mark locations on the map
CALTRANS DISTRICT 4
Bicycle Plan


MARIN COUNTY
SEE DETAILED MAP INSET
SAN FRANCISCO
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DALY CITY
SAN MATEO COUNTY
BRISBANE
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0 1 2
ALAMEDA COUNTY
OAKLAND
ALAMEDA
SAN LEANDRO
SAN FRANCISCO BAY
SOUTH SAN FRANCISCO
SAN BRUNO
HAYWARD
PACIFICA
UNION CITY
FREMONT
SEE DETAILED MAP INSET
HALF MOON BAY
EAST PALO ALTO
PALO ALTO
MOUNTAIN VIEW
LOS ALTOS
SAN MATEO COUNTY
SANTA CLARA COUNTY
MILLBRAE
BURLINGAME
SAN MATEO
FOSTER CITY
BELMONT
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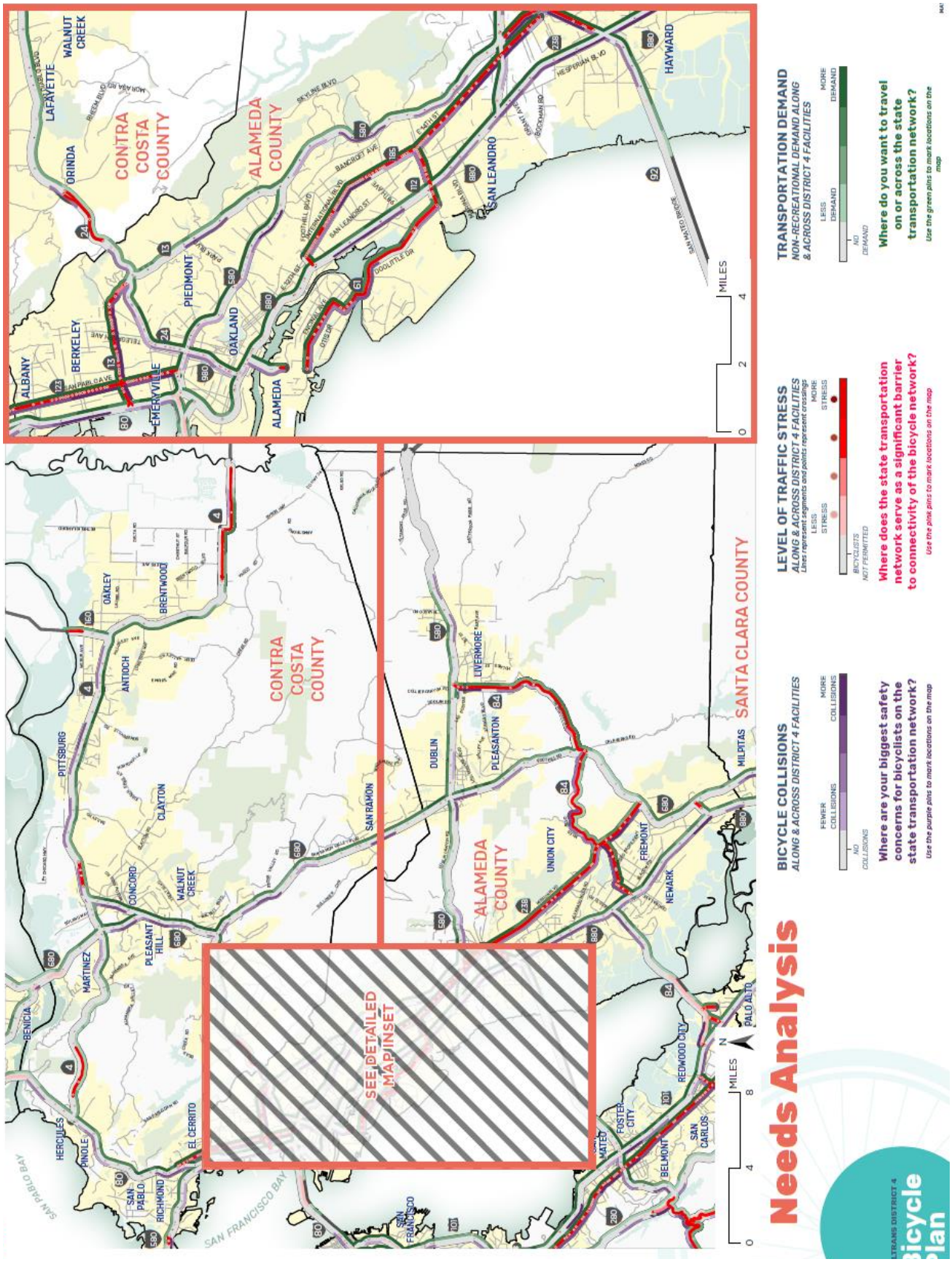
Bicycle Plan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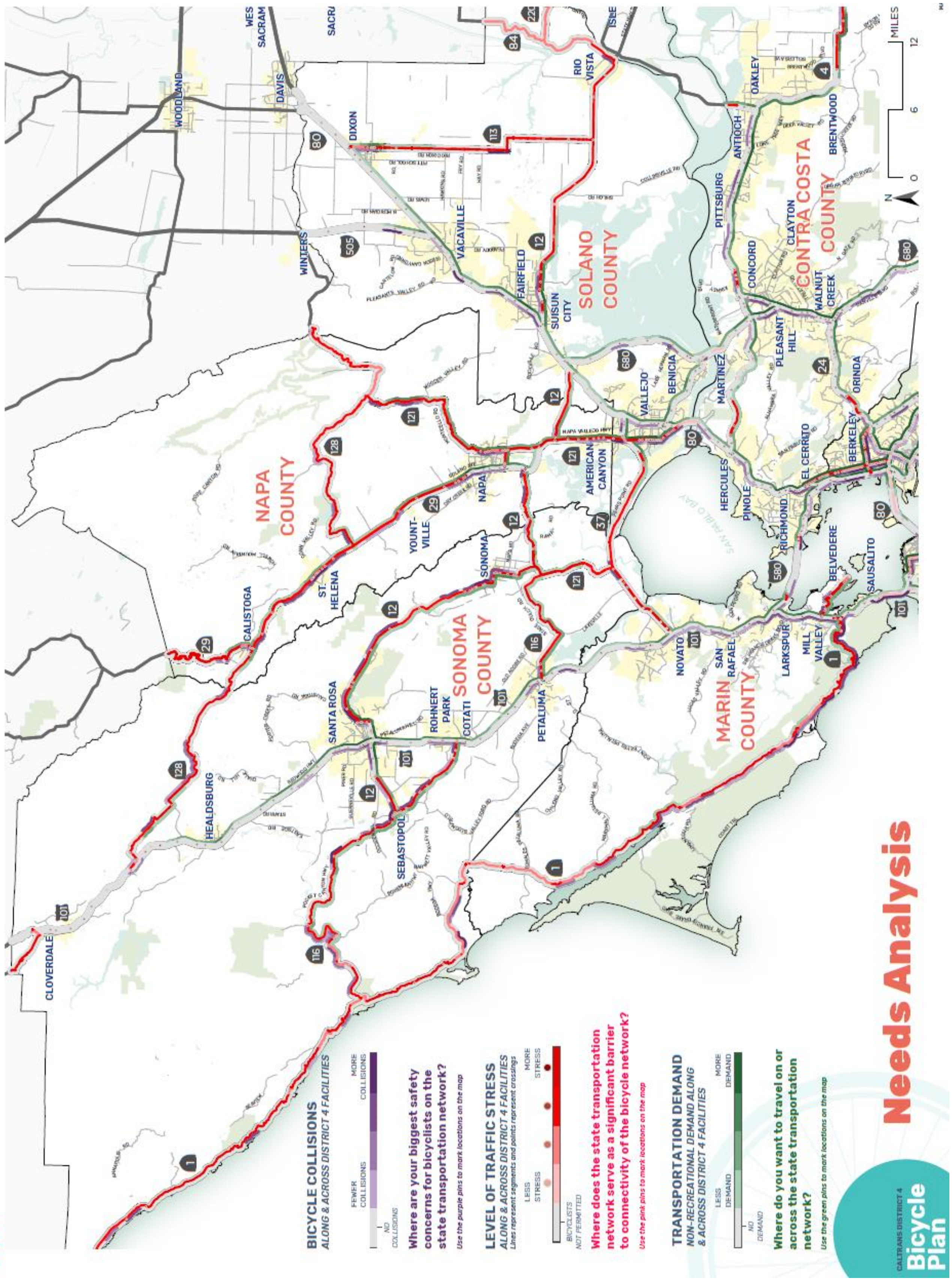
NON-RECREATIONAL DEMAND ALONG & ACROSS DISTRICT 4 FACILITIES
LESS DEMAND
MORE DEMAND
NO DEMAND
Where do you want to travel on or across the state transportation network?
Use the green pins to mark locations on the map
SEE DETAILED MAP INSET
CONTRA COSTA COUNTY
ALAMEDA COUNTY
SANTA CLARA COUNTY
MILES
0 4 8
0 2 4
N


CALTRANS DISTRICT 4
Bicycle Plan
Needs Analysis
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ALONG & ACROSS DISTRICT 4 FACILITIES
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NO DEMAND
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MORE DEMAND
Where do you want to travel on or across the state transportation network?
Use the green pins to mark locations on the map
NAPA COUNTY
SONOMA COUNTY
SOLANO COUNTY
MARIN COUNTY
CONTRA COSTA COUNTY
CLOVERDALE
HEALDSBURG
CALISTOGA
ST. HELENA
SANTA ROSA
SEBASTOPOL
ROHNERT PARK
COTATI
PETALUMA
SONOMA
YOUNT-VILLE
NAPA
AMERICAN CANYON
VALLEJO
BENICIA
MARTINEZ
HERCULES
PINOLE
RICHMOND
EL CERRITO
BERKELEY
ORINDA
PLEASANT HILL
WALNUT CREEK
CONCORD
CLAYTON
PITTSBURG
ANTIOCH
OAKLEY
BRENTWOOD
SUISUN CITY
FAIRFIELD
VACAVILLE
DIXON
WINTERS
DAVIS
WOODLAND
RIO VISTA
NOVATO
SAN RAFAEL
LARKSPUR
MILL VALLEY
BELVEDERE
SAUSALITO
SAN PABLO BAY
MILES
0
6
12

Public Input

The first round of public outreach for the Caltrans District 4 Bike Plan, conducted in Spring and Summer of 2017, produced information about existing travel conditions for bicyclists on the state highway system, as well as information about desired improvements. Input was gathered through focus groups, workshops, and an on-line survey. For the purposes of the needs analysis, the on-line survey was used to generate direct measures of three primary concerns for the analysis:

- Where people currently use or cross the state transportation system – direct measure of system use
- Where people would like to use or cross the state transportation system – direct measure of system demand
- Where the state transportation system serves as a barrier to bicycle travel – direct measure of challenges and barriers

Approach

The online survey was administered to gather input on bicycle needs and issues across the Bay Area and recommendations to address existing barriers. The survey consisted of an interactive map and survey interface that allowed bicyclists and others to share their on-the-ground knowledge about mobility, barriers, and safety on and cross the state-owned transportation network. The survey was open between February and June 2017.

Over 4,700 people visited the survey website and nearly 3,500 completed at least one question in the survey. The interactive map was heavily used by survey respondents; over 20,000 “pins” were placed on the map, providing location-specific comments and feedback.

Location-specific input was gathered on five questions:

- Where do respondents currently bicycle along or across the state highway system
- Where would respondents like to bicycle along or across the state highway system
- What barriers do respondents face when bicycling along or across the state highway system?
- What bicycling improvements would respondents like to see made to the state highway system
- What existing bicycle facilities do respondents rate as high quality

The first three of these questions were used as input into the needs analysis. The latter two – about desired improvements and existing high-quality facilities – will be used in the identification and evaluation of projects but are not specifically pertinent to identifying needs.

For each of the first three questions, input that was received was associated with the nearest state highway segment. The survey data were coded onto the state highway network at quarter mile intervals. Points were aggregated to the closest quarter-mile segment. For the ‘where I bike’ and ‘where I would like to bike’ questions, points were aggregated separately for crossings and travel along. The survey specifically allowed respondents to indicate if they do or would like to use the state transportation network or cross the state transportation network. Survey points that were more than 250 feet away from the state highway system were excluded from the analysis.

Scoring

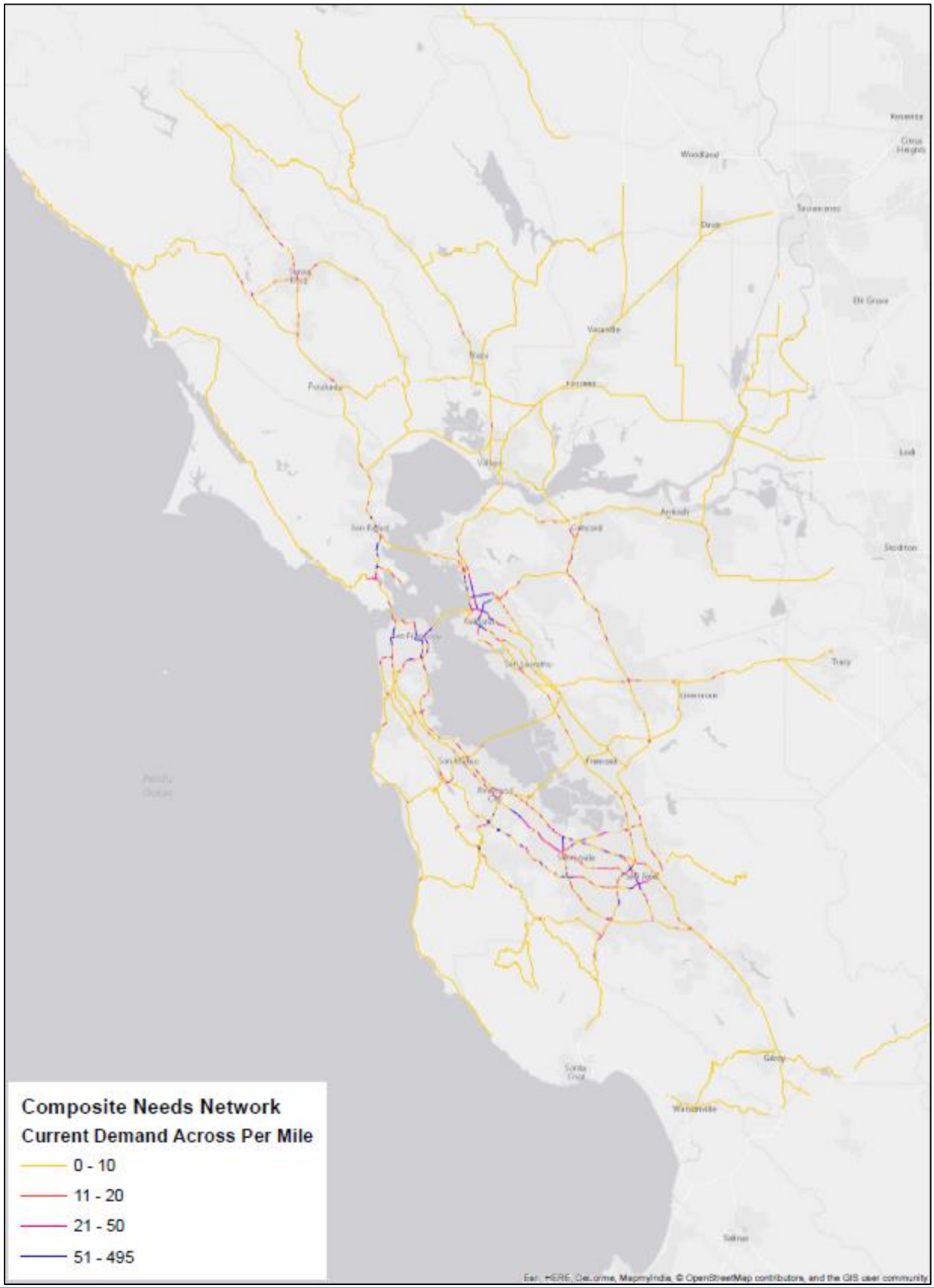
The survey points per mile we converted into a four-point scale to be consistent with the other measures generated through this process. Table x presents the scoring ranges used.

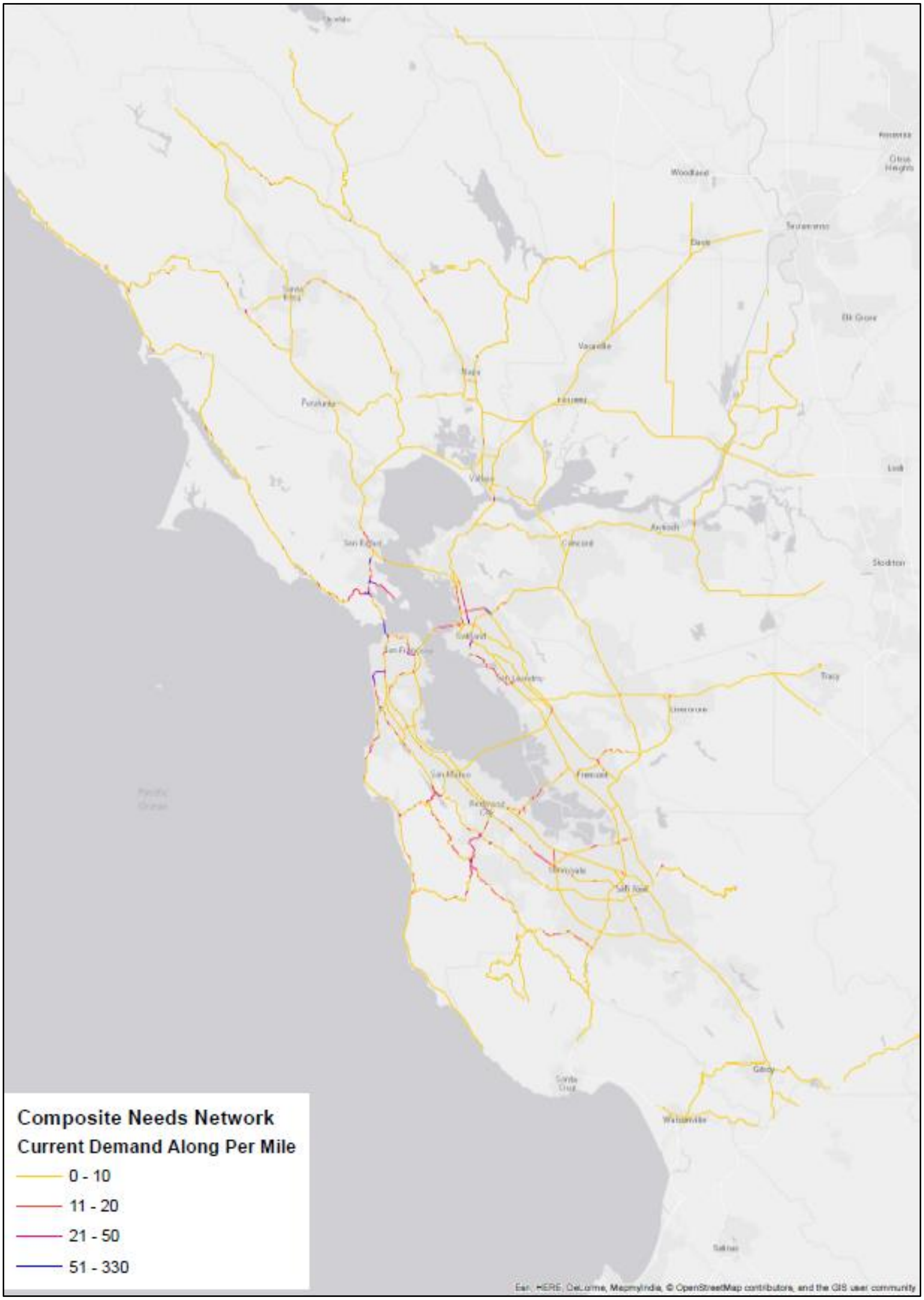
Table X Survey Point Density Thresholds for Needs Scoring

Score	Description
0	No survey responses
1	More than 6 points per mile
2	At least 6 but fewer than 12 points per mile
3	At least 12 but fewer than 24 points per mile
4	At least 24 points per mile

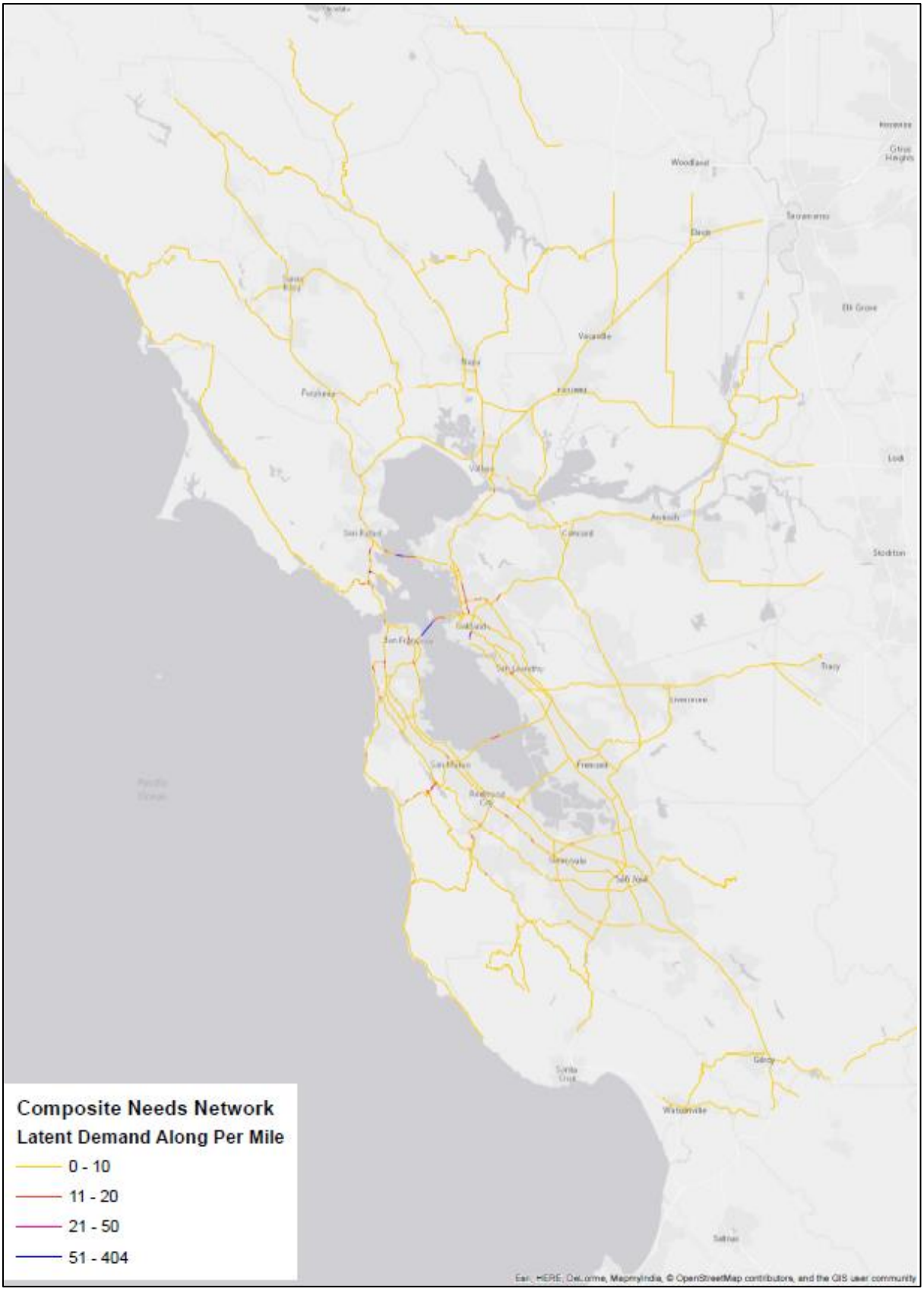
Results

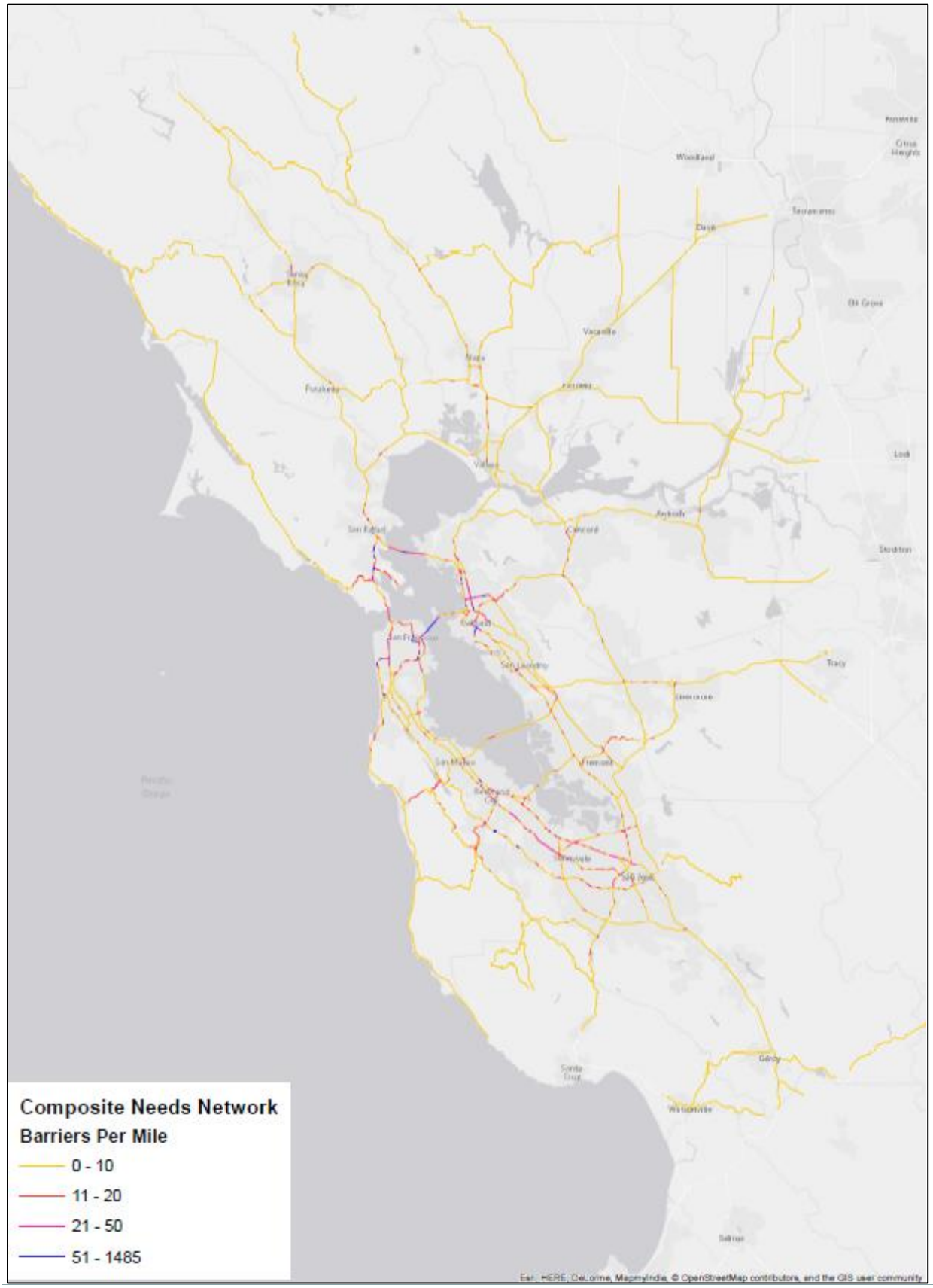
The following five maps summarize the data that was generated based on this input. These maps use somewhat different ranges than the points per mile scoring


Composite Needs Network
Current Demand Across Per Mile
0 - 10
11 - 20
21 - 50
51 - 495
Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community


Composite Needs Network
Current Demand Along Per Mile
0 - 10
11 - 20
21 - 50
51 - 330
Woodland
Davis
Vacaville
Napa
Petaluma
Vallejo
Antioch
Concord
San Rafael
Oakland
San Francisco
San Leandro
Tracy
Livermore
Fremont
San Mateo
Redwood City
Sunnyvale
San Jose
Gilroy
Watsonville
Lodi
Stockton
Elk Grove
Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community


Composite Needs Network
Latent Demand Across Per Mile
0 - 10
11 - 20
21 - 50
51 - 72
Esri, HERE, Garmin, MapmyIndia, © OpenStreetMap contributors, and the GIS user community


Composite Needs Network
Latent Demand Along Per Mile
0 - 10
11 - 20
21 - 50
51 - 404
Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community


Composite Needs Network
Barriers Per Mile
0 - 10
11 - 20
21 - 50
51 - 1485
Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community

Caltrans District 4 Bike Plan

for the San Francisco Bay Area

APPENDIX E

Prioritization Methodology

2018

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MEMORANDUM

100 Webster Street, Suite 300
Oakland, CA 94607
(510) 540-5008
www.altaplanning.com

To: Sergio Ruiz, Caltrans

From: Hugh Louch, Beth Martin, Alta Planning + Design

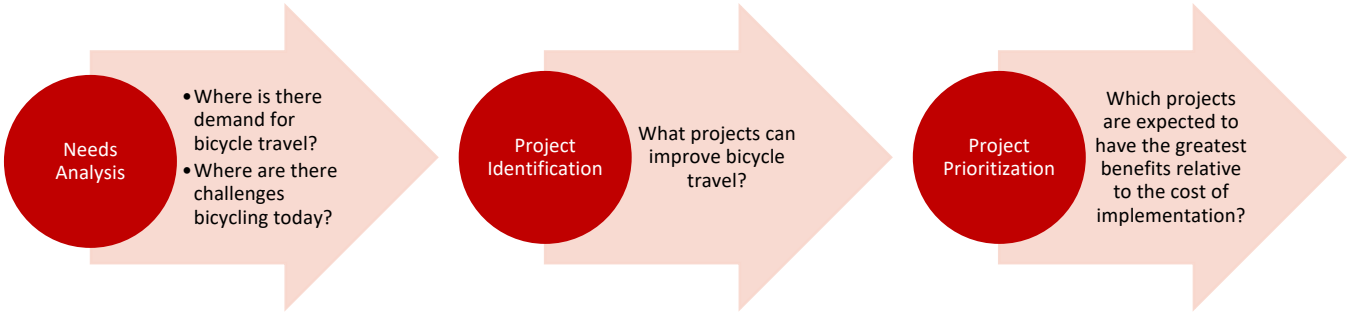
Date: December 8, 2017

Re: District 4 Bicycle Prioritization Methodology

Introduction

In Fall 2017, as part of the Caltrans District 4 Bicycle Plan, Alta conducted a Needs Analysis to identify where there is demand for and challenges to bicycling today on or across the state transportation system (see Figure 1). This memo outlines the methodology of the following two elements of analysis within the Plan: project identification and project prioritization. Following the development of the Needs Analysis, Alta identified what projects can improve bicycle travel on or across the state highway system in the nine county Bay Area. And most recently, Alta conducted a project prioritization in order to determine of the projects identified, which projects are expected to have the greatest benefits, given the project cost.

Figure 1. Elements of Analysis



Project Identification

Four types of projects were identified for inclusion in the District 4 Bicycle Plan, addressing both improvements along state highways and three types of crossings:

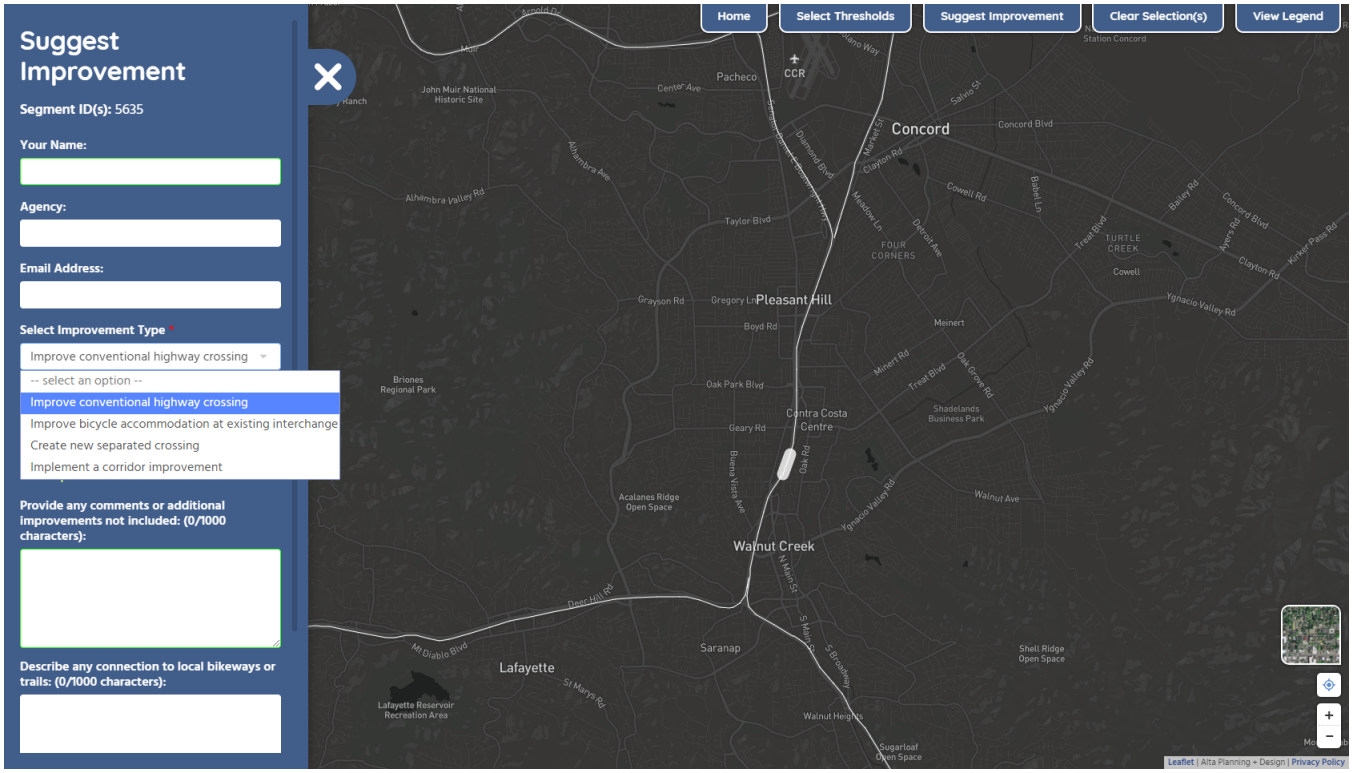
- **Corridor improvements – The addition of a roadway improvement or bicycle facility that improves bicycling for a segment of a state highway where bicycling is permitted. This can include shoulder improvements, a Class I shared use path, a Class II bike lane, a Class II buffered bike lane, or a Class IV separated bikeway.**
- **Interchange improvements – Improving bicycle accommodation at an existing interchange include minor improvements, such as new ramp merge treatments, or adding bike lanes and other supportive elements through the intersection. Major improvements include an interchange**

reconfiguration, either a partial reconstruction (ramps only) or a full reconstruction (replacement bridge to accommodate bikeway).

- Conventional highway crossings – Conventional highways interact with local streets (and other conventional highways) and include both controlled crossings (e.g., signals, stop signs) and uncontrolled intersections (where the traffic on the highway does not stop but is required to yield to pedestrians in a crosswalk). Potential projects for controlled intersections include intersection striping improvements, signal improvements (such as a bike signal or bike detection), or other advanced treatments (such as a bike box, two-stage turn box, or protected intersection). Improvements may also include changing intersection control (to stop, signal, pedestrian hybrid beacon or flashing beacon) or traffic calming methods (such as curb extensions, median refuge, and narrowing travel lanes).
- Separated crossings – Crossing a state highway may facilitate the need for a separated crossing, which includes overcrossings, undercrossings, and adding a bikeway under an elevated freeway.

Projects were gathered from existing City and County-level plans, identified by staff from local and county agencies and BPACs, and identified by the project team in locations where needs were identified. Alta developed a web input tool that allowed project team members and agency staff to identify the location and types of project improvements (see Figure 2).

Figure 2. Project Identification Web Tool



Project Prioritization

Following project identification, the project team prioritized projects based on several measures of potential benefit and the relative cost of the improvements. The prioritization process focused on projects that cannot be accomplished as part of regular maintenance or resurfacing projects.

Project prioritization considered six factors:

- **Demand – how many bicyclists are expected to use the facility?**
- **Existing Quality – what is the comfort and safety of the existing facility?**
- **Project Quality – how much an improvement is made by the new facility?**
- **Equity – does the project support a disadvantaged community?**
- **Local Priorities – is the project connected to a priority local project?**
- **Cost**

The first four of these factors were scored between 1 (high) and 4 (low). The scoring for the remaining two factors (local priorities and cost) is described within the detailed project scoring sections below.

The scoring methodology varies somewhat for corridor and crossing projects. Corridor project scores were calculated using the distribution of relevant data at the segment-level. Each project was defined for one or more quarter mile segments. Crossing projects used the best score for the affected segments. Most crossing projects included only one segment. Where a crossing fell at the junction of two segments or where the improvement could have been implemented in either segment, the projects were identified over two segments.

Demand

Projects were prioritized by the directly or indirectly measured demand for bicycling on the corridor or crossing. Demand was an important consideration because it provides a measure for the potential for people to bicycle along or across the state transportation system. Outlined in detail within the Needs Analysis memo, demand was measured using two factors. First, a weighted number of short distance trips (by any mode) using data from the Metropolitan Transportation Commission (MTC) travel demand model. Second, locations of current or desired bicycle travel from the public survey conducted for this Plan.

Table 1 - Demand Performance Measures

Data Source	Measure	Type*
Demand/System Use Measures		
MTC Model	Estimated short trips (high bicycling potential)	Indirect
Public Input	Locations of desired network use/crossing	Direct

Table 2 identifies the specific thresholds used to score both crossing and corridor projects considering these two data items.

Table 2 - Summary of Demand Performance Scoring

Score	Description	Crossing Scoring	Corridor Scoring
1	High demand *and* significant public support	• MTC Demand High (~ 1,000 or more short trips) *and* 48 or more survey points per mile, *or* • 96 survey points per mile	• 100% of corridor segments have MTC Demand High or Medium High (several hundred or more short trips) *and* 48 or more survey points per mile, *or* • 96 survey points per mile
2	Medium High demand *or* strong public support	• MTC Demand High or Med High (several hundred or more short trips) *or* • 16 or more survey points per mile	• 100% of corridor segments have MTC Demand High or Medium High (several hundred or more short trips), *or* • 48 survey points per mile
3	Medium demand *or* medium support	• MTC Demand Medium (~ 100 or more short trips) *or* • 12 or more survey points per mile	• One third of corridor segments have MTC Demand High or Medium High (several hundred or more short trips), *or* • More than 12 survey points per mile
4	Low demand *and* low support	• MTC Demand Low (fewer than 100 short trips) *and* • Fewer than 12 survey points per mile	• Some segments have MTC Demand above Low *or* • More than 0 survey points per mile
5	No demand	• Not scored for crossings	• 100 percent of segments have MTC Demand Low, *and* • 0 survey points per mile

Existing Quality

Identified projects were also scored based on the quality of the existing infrastructure, before any project is completed. The rationale behind examining existing quality is to prioritize projects where there are currently no comfortable bicycling facilities. For this measure, a 1 indicates the lowest existing quality (greatest need), and 4 indicates the highest existing quality (lowest need).

Existing quality was measured differently for crossing quality and corridor quality. For crossings, the measure considered the availability of high quality crossings in the vicinity of the proposed project (consider available crossings at quarter, half, and full mile increments). Level of traffic stress was measured for all existing state highway crossings as part of the needs analysis. This information was used to measure the number of available low stress crossings (LTS 1 or 2) available in the vicinity of the proposed project, as shown in Table 3.

Table 3 – Existing Crossing Quality Score

Score	Description	Number of High Quality Crossings (all conditions true)		
		¼ mile	½ mile	1 mile
1	No low stress crossings within a mile	0	0	0
2	No low stress crossings at the project location and a few in the vicinity	0	<2	<3
3	No more than one low stress crossing at the project location and no more than one per quarter mile	<2	<3	<5
4	No more than one low stress crossing at the project location, but several in the vicinity	<2	<4	<8
5*	Several existing low stress crossings	Any measure more than identified for a score of 4		

*** Generally, projects were not defined in areas with multiple existing low stress crossing opportunities.**

Corridor quality was measured considering the level of traffic stress of corridor segments and the number of bicycle collisions, weighted by severity. Again, both measures followed the methodology established in the Needs Analysis memo. Table 4 describes the thresholds used to establish existing corridor quality.

Table 4 – Existing Corridor Quality Score

Score	Level of Traffic Stress		Safety
1	90% of the corridor is LTS 3 or 4	*or*	• 90% of corridor segments had at least one sever injury or three visible injuries
2	60% of the corridor is LTS 3 or 4	*or*	• 60% of corridor segments had at least one sever injury or three visible injuries
3	30% of the corridor is LTS 3 or 4	*or*	• 30% of corridor segments had at least one sever injury or three visible injuries
4	More than 0% of the corridor is LTS 3 or 4	*or*	• More than 0% of corridor segments had at least one sever injury or three visible injuries
5	100% of the corridor is LTS 1 or 2	*or*	• 100% of corridor segments had at least one sever injury or three visible injuries

Project Quality

In contrast to existing quality, the project quality measures the amount of improvement for bicycling a proposed project would provide. For this measurement, a score of 1 indicates the highest project quality and 4 the lowest. Project quality was measured separately for different improvement types. Most scores also depend on the current condition of the facility – projects that create minor improvements on high stress facility do not score as highly as those that provide more significant improvements.

Corridor Improvements

Table 5 shows the scores used for corridor improvements, considering the class of the facility proposed and the existing level of traffic stress of the corridor.

Table 5 – Project Quality Score – Corridor Improvements

Facility Class	Existing LTS	
	1 or 2	3 or 4
I	1	1
II	3	4
II buffered	2	3
III/Shoulder Improvements	3	4
IV	1	1

Interchange Improvements

Interchange improvements include both major improvements, like reconstructing the interchange or its ramps to provide the, and minor improvements, like striping bicycle lanes, more clearly indicating conflicts, and similar improvements.

Table 6 provides the project quality scores for minor interchange improvements (no reconstruction of the ramps). Interchange improvements consider the class of the facility provided through the interchange, whether the ramps are signalized, and the improvements interact with the existing ramps. Three types of ramp configuration improvements are considered (Figure 1).

Major ramp reconfigurations are assumed to be quality 1, on the assumption that interchange or ramp reconstruction would lead to signalization or ramps and provision of bicycle facilities. Similarly, new separated crossings receive a quality score of 1.

Figure 1 – Bicycle Facility Interaction with Ramps

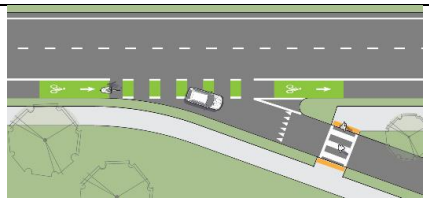
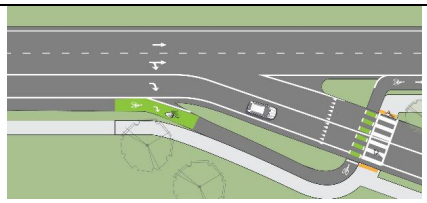
Example	Description
	**Auto Priority – crossing is striped, but bicyclists must yield to automobiles**
	**Bicycle Priority – crossing is striped and automobiles must yield to bicyclists**
	**Separated – bicyclists are provided a separate path of travel through the interchange area similar to pedestrians.**

Table 6 – Project Quality Scores – Minor Interchange Improvement

Facility	Auto priority	Bike priority	Separated
Add signals to ramps			
I, IV	1	1	1
II buffered	2	1	1
II	2	1	1
Striping Improvements only (ramps remain unsignalized)			
I, IV	2	1	1
II buffered	3	2	1
II	3	2	1

Conventional Highway Crossings

Table 7 and 8 present project quality scores for conventional highway crossings, for controlled and uncontrolled intersections respectively. Scores for these improvements were established based on the existing level of traffic stress and the type of improvement

Table 7 – Project Quality Scores – Controlled Conventional Highway Crossing

Relevant features	LTS 1, 2, or 3	LTS 4
Bike signal – separated bicycle signal phase and signal head	1	1
Auto turn restrictions on red or separate left turn phase for autos	1	2
Bike box and/or bike turn box	1	2
Lane continuation – marking lanes through intersection	3	4
Enhanced markings – green color markings	2	3
Protected intersection	1	1

Table 8 – Project Quality Scores – Uncontrolled Conventional Highway Crossing

Relevant features	LTS 1, 2, or 3	LTS 4
Add control – signal, pedestrian hybrid beacon, roundabout	1	1
Flashing beacon	1	2
Flashing beacon with bulb outs or median	1	2
Bulb outs or median alone	3	4

Equity

The prioritization methodology examines equity as a key measure, prioritizing projects that serve disadvantaged areas. For this analysis, a disadvantaged area includes areas identified as a Community of Concern, as defined by the Metropolitan Transportation Commission[1] and/or a disadvantaged community, as defined through CalEnviroScreen developed by the California Environmental Protection Agency[2]. Equity for this analysis is measured on a scale of 1 through 4, where 1 indicates that the project best serves disadvantaged areas and 4, where the project does not interact with a disadvantaged community. Table 9 outlines the equity scoring guidelines based on whether the project is a corridor or crossing project.

[1] https://mtc.ca.gov/our-work/invest-protect/investment-strategies-commitments/protect-our-climate/active-transportation
[2] https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30

Table 9 – Equity Scores

2	Over 1/3	Within ½ mile
4	Does not touch	More than 2 miles

Local Priorities

As part of the project development process, Caltrans and Alta staff met with county level planning agencies and, in some cases, bicycle advisory committees in the nine counties of the Bay Area. These meetings yielded information about local priorities that were used to supplement the measures described above.

In addition, the draft project list was circulated for public comment from November 27 to December 22, 2017 through an online web tool. The provided an opportunity to comment on specific projects and to 'like' or 'dislike' individual projects. A total of 2,312 likes and 66 dislikes were identified for projects, with likes ranging from 1 to 160. The projects with 25 or more likes are shown in Table 10.

Table 10 – Projects with Over 20 Likes

Alameda Estuary Crossing	136	2
City of Alameda Central Avenue Class IV/Class II	38	6
Vallejo Carquinez Bridge Trail connection	30	0
Reconstruct Hwy 37 and add bikeway	27	3

These inputs were used along with the agency priorities to identify projects that may be considered local priorities. The use of local priorities is described in the Prioritization section below.

Cost

Cost was also considered in project prioritization. Few of the projects identified for inclusion in the Plan have specific cost estimates associated with them. Many projects are likely to implemented in coordination with local agency projects (e.g., adding bicycle facilities through an interchange as part of development of a bikeway on connecting local streets), making the specific cost somewhat challenging to ascertain. Table 11 identifies approximate qualitative rating of cost, following current Active Transportation Program categories.

Table 11 – Cost Ranges

	Description
$	Less than $250,000
$$	$250,000 – $1,500,000
$$$	$1,500,000 – $7,000,000
$$$$	Over $7,000,000

Prioritization Process

The purpose of the prioritization process is to sort projects into tiers of improvements. Prioritization considered performance (using the factors described above), cost, and likely implementation strategies. There are several means for Caltrans to implement the proposed projects, including:

- **State Highway Operation and Protection Program (SHOPP). Regular maintenance and preservation projects on state highways are typically funded through the SHOPP. This includes highway resurfacing, rehabilitation, structure maintenance, safety improvements, and similar projects. Per Caltrans policy, SHOPP projects are required to identify complete streets assets to be included in the project scope. This Plan will inform the identification of proposed complete streets assets. Many of the lowest cost bicycle plan projects can likely be implemented as part of a SHOPP project or potentially as individual low-cost striping projects.**
- **State Transportation Improvement Program (STIP). The STIP is a prioritized list of highway improvements. More significant improvements may be eligible for this program.**
- **Active Transportation Program (ATP). The Active Transportation Program is a grant funding source that combines a variety of federal and state funding sources for bicycle and pedestrian improvements by both Caltrans and local agencies. Caltrans can compete for these funds using the same process as local agencies or can partner with local agencies.**
- **Future Senate Bill 1 programs. Senate Bill 1 of 2017 increased the state gas tax and increased funding for ATP and a variety of other programs, such as the congested corridor program. These sources also present an opportunity to fund projects from this Plan.**

Considering these implementation paths, lower cost projects (under $250,000) were prioritized separately from higher cost projects.

Primarily Maintenance Projects

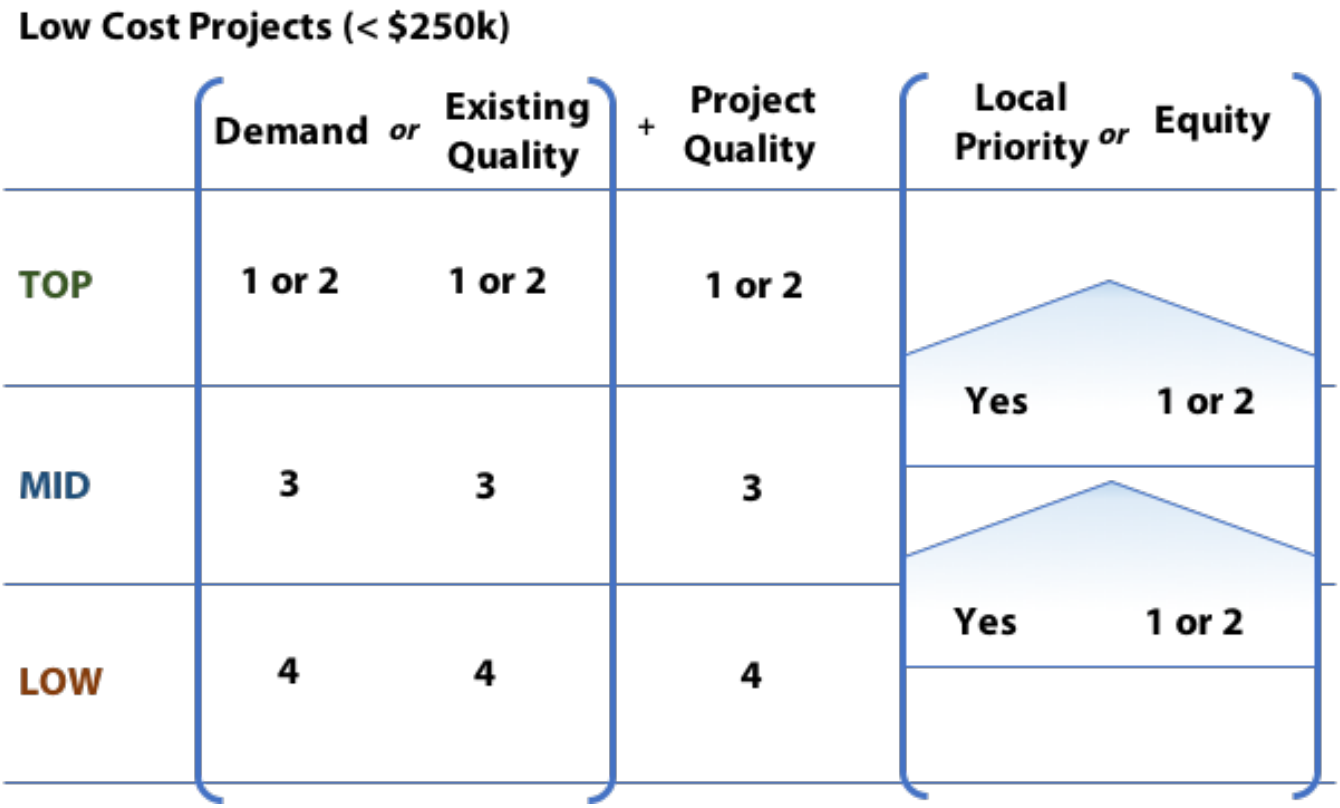
Lower cost projects are primarily achieved through the SHOPP. When SHOPP projects are considered, Caltrans policy requires identification of complete streets elements for inclusion in those projects. The list of projects identified for the bike plan includes several of these, though these types of improvements should also be included in SHOPP projects that may not have a project identified in this Plan.

For these types of projects, the Plan identifies priorities as follows:

- **Top tier projects have a demand score of 1 or 2 *or* an existing facility quality score of 1 or 2, but neither one with a score of 4, and a project quality score of 1 or 2.**
- **Mid tier projects have a demand score of 2 or 3 *or* an existing facility quality score of 2 or 3, and a project quality score greater than 4**
- **Low tier projects have demand or existing quality scores of 4.**
- **If a project is a local priority or has an equity score of 1 or 2, it moves up one tier.**

Figure 2 summarizes the approach.

Figure 2 – Low Cost Prioritization Process



Higher Cost Projects

Higher cost projects require a specific funding source for implementation and follow a slightly different prioritization process that focuses on the most important projects. For these types of projects, the Plan identifies priorities as follows:

- **Top tier projects have either a demand score or a facility quality score of 1 and the other score no lower than a 2 and a project quality score of 1 or 2.**
- **Mid tier projects have a combination of a demand score and a facility quality score that add up to no more than 4 (1 and 3, 2 and 2, 3 and 1) and a project quality score of 1 or 2.**
- **Low tier projects are all remaining project.**
- **Projects that are a local priority or have an equity score of 1 or 2 move up one tier, except for projects that scored no better than three on each of the demand score, facility quality score, and project quality score. (Note than fewer than 25 projects fell into this group.)**

Figure 3 summarizes the project prioritization process for higher cost projects.

Figure 3 – High Cost Project Prioritization

High Cost ($) Projects (Over $250,000)

	Demand	&	Existing Quality	&	Project Quality	Local Priority	*or*	Equity
TOP	1		1 or 2		1 or 2			
	1 or 2		1		1 or 2			
MID	1		2 or 3		1 or 2	Yes		1 or 2
	2		2		1 or 2			
	2 or 3		1		1 or 2	Yes		1 or 2
	1		1		3			
LOW	remaining projects							
VERY LOW	3 or 4		3 or 4		3 or 4			

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