COUNTY OF SAN MATEO
PLANNING AND BUILDING DEPARTMENT

DATE: May 25, 2016

TO: Planning Commission

FROM: Planning Staff

SUBJECT: EXECUTIVE SUMMARY: INFORMATIONAL ITEM: Status update on the Comprehensive Transportation Management Plan ("Connect the Coastside").

County File Number: PLN 2014-00430 (County of San Mateo)

PROPOSAL

This is an informational report on the current status of the Comprehensive Transportation Management Plan ("Connect the Coastside"). Connect the Coastside is a long range planning effort required by San Mateo County Local Coastal Program ("LCP") Policy 2.53, which stipulates the need to evaluate future development impacts on the regional transportation system, including coastal access, within the unincorporated Midcoast area and the City of Half Moon Bay ("study area").

The County of San Mateo Planning and Building Department manages Connect the Coastside and has contracted with DKS Associates to conduct a technical analysis, develop strategic alternatives, and produce a plan to help manage long-term development and transportation in the study area.

RECOMMENDATION

Receive staff's presentation on the status of Connect the Coastside and provide input on the draft transportation improvements and land use policies.

SUMMARY

Since staff's last update to the Planning Commission on November 4, 2015, the project team drafted potential transportation improvements and land use policies and has received community feedback regarding the proposed development forecast and transportation standards for the project. The alternatives standards and the forecast of development potential were documented and circulated for review in the Fall of 2015. The standards and forecast were reviewed by the Planning Commission at the November 2015 meeting. After making refinements to reflect stakeholder and public input, the new standards and forecast were used to re-evaluate the hybrid

transportation alternative. The project team was able to modify the set of projects in a way that responded to the stakeholder and public input from the Spring of 2015 and produce a more context-sensitive set of solution options that also ensure an acceptable level of service by all modes.

Recommended Alternative to Address Transportation Deficiencies

A review of future transportation needs and deficiencies under full buildout conditions for the Midcoast and the City of Half Moon Bay was conducted. A set of draft transportation improvements were identified to address these deficiencies. The projects recommended included addressing deficiencies for roadways, intersections, bicycle and pedestrian infrastructure, transit, and parking. Utilizing the alternative standards for each of these modes, the proposed improvements will address all roadway and intersection deficiencies in the Midcoast and Half Moon Bay except for delay through downtown Half Moon Bay which can be partially mitigated. The improvements will also address all deficiencies for bicycle and pedestrian infrastructure, transit, and parking.

Land Use Policy Concepts

Two programs that have been reviewed by staff that could reduce development potential on the Midcoast are a mandatory lot merger program and a lot retirement program. In addition, a traffic impact fee mitigation program is discussed here for its potential to reduce development.

The lot merger program would reauthorize a policy that was adopted by the San Mateo County Board of Supervisors in 2006. The policy would establish a merger program for two contiguous parcels under the same ownership in which at least one parcel is undeveloped and also one parcel is substandard in size. The program would initially be voluntary and then a mandatory merger process would occur.

A second policy concept is a lot retirement program. A lot retirement program requiring one-to-one retirement of development rights on existing lots in exchange for new lots would have the effect of reducing development potential and lessen the effect of new development on the transportation network. When a new lot is created via a subdivision, the applicant would have to extinguish the development rights on another parcel outside of the urban area.

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COUNTY OF SAN MATEO
PLANNING AND BUILDING DEPARTMENT

DATE: May 25, 2016

TO: Planning Commission

FROM: Planning Staff

SUBJECT: INFORMATIONAL ITEM: Briefing on the Comprehensive Transportation Management Plan ("Connect the Coastside").

County File Number: PLN 2014-00430 (County of San Mateo)

INTRODUCTION

This is an informational report on the current status of the Comprehensive Transportation Management Plan ("Connect the Coastside"). Connect the Coastside is a long range planning effort required by San Mateo County Local Coastal Program ("LCP") Policy 2.53, which stipulates the need to evaluate future development impacts on the regional transportation system, including coastal access, within the unincorporated Midcoast area and the City of Half Moon Bay ("study area").

The County of San Mateo Planning and Building Department manages Connect the Coastside and has contracted with DKS Associates to conduct a technical analysis, develop strategic alternatives, and produce a plan to help manage long-term development and transportation in the study area.

RECOMMENDATION

Receive staff's presentation on the status of Connect the Coastside and provide input regarding the next steps for moving forward.

BACKGROUND

Report Prepared By: Rob Bartoli, Planner II, Telephone 650/363-1857

Applicant: County of San Mateo Planning and Building Department

Location: Land area south of Tom Lantos Tunnels (Devil's Slide), extending to the southern terminus of the City of Half Moon Bay, including areas west and east of Highway 1 (to Interstate 280), as well as land areas proximate to Highway 92, from Highway 1 to Interstate 280.

Chronology:

Date		Action
August 8, 2012	-	Coastal Commission certifies Midcoast LCP Update, including new LCP Policy 2.53 calling for the development of a Comprehensive Transportation Management Plan.
May 20, 2014	-	Board of Supervisors approves contract with DKS to prepare the Comprehensive Transportation Management Plan.
May 29, 2014	-	Project Initiated: Scope of Work finalized and data collection commenced.
August 27, 2014	-	Project introduction and status update to the Midcoast Community Council.
September 30, 2014	-	Draft Buildout Analysis and Traffic Projections Report presented at Technical Advisory Committee (TAC) Meeting #1.
October 22, 2014	-	Presentation to Midcoast Community Council on draft Buildout Analysis and Traffic Projections Report.
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November 10, 2014	-	Public workshop at Half Moon Bay Brewery.
December 10, 2014	-	Project status report to Planning Commission.
March 4, 2015	-	Hybrid Transportation Alternative presented to Technical Advisory Committee (TAC).
April 8, 2015	-	Midcoast Community Council Briefing.
April 15, 2015	-	Public Workshop #2 - Evaluation of Alternatives.
April 21, 2015	-	Half Moon Bay City Council Update.
July 7, 2015	-	Amendment to agreement with DKS to allow for additional analysis and public outreach regarding development forecast and transportation alternatives.
September 9, 2015	-	Draft Development Forecast and Alternative Transportation Standards presented to TAC.
October 14, 2015	-	Presentation to Midcoast Community Council.

October 20, 2015	-	Presentation to Half Moon Bay City Council.
October 22, 2015	-	Public Workshop #3 - Land Use Forecast and Alternative Transportation Standards.
November 4, 2015	-	Project status report to Planning Commission.
February 17, 2016	-	Draft Identification and Evaluation of Recommended Transportation and Land Use Alternative to Address Deficiencies presented to TAC.
March 14, 2016	-	Presentation to Half Moon Bay City Council.
March 23, 2016	-	Presentation to Midcoast Community Council.
April 7, 2016	-	Public Workshop #4 - Identification and Evaluation of Recommended Transportation and Land Use Alternative.

DISCUSSION

In August 2012, the California Coastal Commission approved the LCP Midcoast Update with conditions described in LCP Policy 2.53, to conduct a transportation management plan. Local Coastal Program Policy 2.53 reads as follows:

> *Develop a comprehensive transportation management plan to address the cumulative traffic impacts of residential development, including single-family, two family, multi-family, and second dwelling units, on roads and highways, in the entire Midcoast, including the City of Half Moon Bay. The plan shall be based on the results of an analysis that identifies the total cumulative traffic impact of projected new development at LCP buildout and shall propose specific LCP policies designed to offset the demand for all new vehicle trips generated by new residential development on Highway 1, Highway 92, and relevant local streets, during commuter peak periods and peak recreation periods; and policies for new residential development to mitigate for residential development's significant adverse cumulative impacts on public access to the beaches of the Midcoast region of San Mateo County*.
>
> *The plan shall thoroughly evaluate the feasibility of developing an in-lieu fee traffic mitigation program, the expansion of public transit, including buses and shuttles, and development of a mandatory lot merger program*.

Since the initiation of this project in May of 2014, there have been public workshops, presentations to elected bodies, and a number of advisory meetings. After the second workshop for the Plan in April of 2015, there was significant stakeholder feedback focused on the level of potential residential and non-residential development identified in the Buildout Analysis and Traffic Projections Report. Stakeholders were concerned

with the high level of potential development that may exceed the transportation, water and wastewater systems capacity. LCP Policy 2.53 requires that the Plan analyze cumulative traffic impacts based on LCP Buildout; however, stakeholders requested, and staff agreed, that further information was needed regarding forecasted development on the Midcoast over the next 25 years.

Thus, a Constrained Forecast of Development Potential was created that projects the amount of potential development in the Midcoast over the next 25 years, factoring in existing development regulations such as current growth limits in the Midcoast and Half Moon Bay, and other environmental constraints such as the limited availability of new water connections.

In addition to providing supplemental development projects, the project team has refined the proposed revisions to the transportation performance standards contained in the existing LCP, which are limited to roadway levels of service for vehicles. The proposed new standards incorporate factors such as the availability of public transportation, parking, bike lanes, and pedestrian routes.

The updated development forecast and transportation performance standards were reviewed by the Planning Commission in November of 2015 and used to refine the suite of suggested roadway and transportation improvements, referred to by the Plan as the hybrid transportation alternative. The project team was able to modify the set of projects in a way that responded to the stakeholder and public input received during the Spring of 2015 and produce a more context-sensitive set of solution options that also ensure an acceptable level of service by all modes. While the 25-year forecast is a helpful guide as to what could be developed by 2040, the transportation analysis conducted was under full buildout, as required by the Local Coastal Program.

A. Proposed Transportation Alternatives

New performance standards were identified for roadways, pedestrian facilities, bicycling facilities, transit facilities and services and parking facilities and each is described below. These standards were reviewed by the Planning Commission at the November 4, 2015 meeting.

1. Alternative Standards

a. Roadway Standards

Delay Index: Defined as the ratio of peak period travel time on a segment to the free-flow travel time, the Delay Index was recommended as a replacement for the roadway segment Level of Service (LOS) based on vehicle/capacity ratio. For vehicle-only segments, a

Delay Index[1] of 2.0 was recommended, and for segments that support multi-modal travel, a Delay index of 3.0 was recommended.

Intersection Level of Service: It was recommended that the intersection LOS standard be maintained for signalized intersections, but applied for un-signalized intersections only if the intersection has sufficient side-street traffic to meet a peak-hour traffic signal warrant.

b. Pedestrians

Pedestrian Environmental Quality Index (PEQI): Using an index developed by the City and County of San Francisco Department of Health as a measure of expected Pedestrian Demand Score[2] between 20 and 29 would be a PEQI score of 41 or higher. The standard for segments along Highway 1 or streets connecting Highway 1 with a beach facility with an INDEX Walking Demand Score of 30 or greater would be a PEQI score of 61 or higher. The PEQI takes into account the following aspects of pedestrian facilities:

- Intersection Safety (presence of crosswalks, intersection lighting, refuge islands, etc.)
- Traffic Volume (adjacent traffic volume, number of lanes, speed limit)
- Street Design (continuity of walkways, width of walkways, curb cuts, etc.)
- Land Use
- Perceived Safety (pedestrian lighting, cleanliness, empty lots)

[1] Delay Index is calculated by determining how long it takes a vehicle to travel a road segment during free flow (no traffic) and how long it takes to travel that same segment during peak times. The standard for Connect the Coastside is travel time along a cars-only segment with longer than a two times free flow travel time would be considered deficient. Travel time along a multi-modal segment with longer than a three times free flow travel time would be considered deficient.

[2] The Pedestrian Demand Score is compiled using the following variables: population density, employment density, land use mix, schools, park/benches, transit proximity, neighborhood shopping districts, social and recreational destinations, social and recreational districts, employment centers, resident demographics (age, income, vehicle ownership), priority development areas, street segment length, intersection density, connectivity.

Pedestrian Crossing Spacing: Safe pedestrian crossing locations no greater than a half mile apart in all areas with an INDEX Walking Demand Score[3] of 20 or higher.

c. Bicycle

Bicycle Environmental Quality Index (BEQI): Again, using an index developed by the City and County of San Francisco Department of Health, the standard for segments along Highway 1 would be a minimum BEQI score of 61 or higher for bicycle travel. The BEQI takes into account the following aspects of bicycle facilities:

- Intersection Safety (dashed bicycle lane, no turn on red, etc.)
- Traffic Volume (adjacent traffic volume, number of lanes, speed limit, presence of parallel parking, etc.)
- Street Design (striped area for bicycle traffic, width of bicycle lane, connectivity, curb cuts, etc.)
- Safety/Other (street lighting, signs) of bicycle lane or "share the roadway"
- Land Use (line of sight, bicycle parking, retail use)

Bicycle Parking Occupancy: Bicycle parking occupancy at beach access lots or major trip generators along Highway 1 shall not average over 85% during peak weekday hours.

d. Transit

Transit Loading Factor: The standard for the transit capacity utilization of buses standing capacity within the study area is not to exceed a two-hour average of 85% during the weekday commute peak period and the weekend recreational peak period.

Stop Amenities: A bench shall be provided if a stop averages 25 or more boardings a day and a shelter shall be provided if the stop averages 100 or more boardings per day.

e. Parking

Parking Occupancy: Parking occupancy at beach access lots shall not average over 85% during peak weekend hours.

[3] Index Walking Demand Score is comprises of the following indicators: intersection safety, traffic volume, street design, land use, and perceived safety.

2. Transportation Improvements

Improvements included in the recommended alternative were selected from a list of potential improvements compiled from those suggested by the Technial Advisory Committee (TAC) and community workshops, proposed projects identified in other recent planning efforts, as well as improvements suggested by the DKS team to address identified deficiencies. The recommended alternative also reflects significant public input received on the previous Hybrid alternative at a workshop on April 15, 2015. To address the needs for the Buildout projections, the projects are considered for implementation over the next 25 years to respond to planned growth in the study area. While the Constrained Forecast helps create a better understanding of what development might occur in the next 25 years, Connect the Coastside is still using full buildout as required by the LCP to look at what transportation projects will be deficient.

Improvements are defined by the following categories:

- Roadway and Intersections/Access Points
- Bicycle and Pedestrian Facilities
- Transit
- Parking

Projects in the recommended alternative that were also recommended in previous planning efforts by the County or the City of Half Moon Bay are boldfaced. New projects identified and proposed by this study are not boldfaced. Roadway and intersection improvements are presented by subarea, but other improvements are presented for the study area as a whole. The recommendations that pertain to Half Moon Bay are advisory only.

a. Roadway and Intersection Improvements

Midcoast

Within the Midcoast area, the only intersections that are operating below the LOS standard and have enough side street volume to meet a signal warrant are Highway 1 and California Avenue, which act as an access point for residential areas on either side of Highway 1, and Highway 1 and Cypress Avenue, which is the main access point for Airport Road. Both of these intersections are located in Moss Beach.

Highway 1 and California Avenue

Given the complicated nature of the intersection with Weinke Way acting as a fifth leg and Carlos Street nearby, a roundabout would not work at this location without significant study and a large footprint. Signalization of the location would improve the LOS to an acceptable level. To signalize the intersection, access to Highway 1 from Weinke Way would have to be restricted and an alternative route to Highway 1 identified. To minimize the delay to vehicles traveling along Highway 1, the signal should be actuated to only trigger with a left-turn demand.

Highway 1 and Cypress Avenue

Analysis of a single lane roundabout at this location did not show any improvement to LOS. Signalization of the location will improve the LOS to an acceptable level. To minimize the delay to vehicles travelling along Highway 1, the signal should be actuated to only trigger with a left-turn demand. A northbound acceleration lane is currently included in Phase 1 of the Midcoast crossings to reduce delay for left-turning vehicles on the eastbound approach of Cypress Avenue, however that would not fully address the deficiency expected at buildout based on the forecasted volume.

A double lane roundabout would also improve the LOS to an acceptable level. There would be a need for additional right-of-way for the roundabout, and potential environmental impacts associated with the expansion of the roadway footprint. Further analysis of the signalization and roundabout options is currently underway.

<u>Signal Coordination</u>

If installed, signals at the cross streets of California Avenue and Cypress Avenue should be coordinated using GPS clocks to guarantee a minimal delay to traffic along Highway 1.

Signalizing these intersections will address the LOS deficiencies under full buildout conditions as shown below:

- Levels of Service at Highway 1 and California Avenue in Moss Beach will increase from LOS F to LOS A/B; and,

- Levels of Service at Highway 1 and Cypress Avenue in Moss Beach will increase from LOS F to LOS B/C.

With no project, the LOS at both intersections would be LOS F under Buildout Conditions. With the installation of the signals at both intersections, the intersection at California Avenue would have a LOS

Level of A at AM Peak Hours and PM Peak Hours and a LOS Level of B during Midday Peak Hour, while the intersection of Cypress Avenue would have a LOS Level of B at AM Peak Hours and Midday Peak Hour and a LOS Level of C at PM Peak Hours.

Further analysis is needed to determine the LOS for AM Peak Hours, Peak Hours, and Midday Peak Hour for a double lane roundabout at Cypress Avenue and Highway 1.

Safety and Circulation Projects

In addition to the roadway and intersection projects identified, the following proposed projects have been identified to improve safety or circulation in the Midcoast area:

- **Addition of a left-turn bay and an acceleration lane at Gray Whale Cove parking lot [4]**

- **Addition of a median with northbound left-turn bay at the Lighthouse in Montara (16th Street)**

- Signage to restrict left-turning movements at the following intersections in the Midcoast and Half Moon Bay, which operate below the LOS Standard but do not meet a signal warrant:

    - Highway 1 and 2nd Street (Montara)

    - Highway 1 and 9th Street (Montara)

    - Highway 1 and Carlos Street (Moss Beach)

- The implementation of traffic calming improvements such as speed display units and speed humps along Main Street in Montara and along Carlos Street in Moss Beach.

- Stop signs added to the following unsigned intersections along Highway 1:

    - Highway 1 and 1st Street (Montara)

    - Highway 1 and Seacliff Court (Montara)

    - Highway 1 and 7th Street (Montara)

[4] Projects in the recommended alternative that were also recommended in previous planning efforts by the County or the City of Half Moon Bay are boldfaced.

    - Highway 1 and 11th Street (Montara)
    - Highway 1 and 13th Street (Montara)
    - Highway 1 and 16th Street (Montara)
    - Highway 1 and Furtado Lane (El Granada)

- Defined curb and paved shoulder for the following segments along Highway 1 will provide a consistent cross section for vehicle and pedestrian safety based on areas of highest pedestrian and bicycle activity along Highway 1:
    - Montara Segment - 1st Street and 14th Street
    - Moss Beach Segment - Carlos Street to Etheldore Street (South)
    - El Granada Segment - Coral Reef Avenue to Medio Road

Unincorporated SR 92 East of Half Moon Bay

Within the unincorporated portion of SR 92 east of Half Moon Bay, the intersection of SR 92 and SR 35 (east) operates below the existing Midcoast LCP LOS standard and has enough side street volume to meet a signal warrant.

SR 92 and SR 35

The intersection of SR 92 and SR 35 has been identified as an intersection with a sufficient volume and sufficient area to benefit from the installation of a double lane roundabout.

Safety and Circulation Projects

In addition to the roadway and intersection projects identified to address deficiencies as defined by performance standards, the following proposed projects have been identified to improve safety or circulation along SR 92 east of Half Moon Bay:

- Passing/Climbing lanes on the eastbound portion of SR-92 between the Landfill Road and Pilarcitos Quarry Road to allow cars to pass the high volume of trucks on this roadway segment as well as provide a passing lane to go around right-turning cars.

- Left-turn lanes at the following major businesses along SR 92 in Half Moon Bay:
    - Berta's Farm
    - Lemos Farm
    - Half Moon Bay Nursery
- Additional "Trucks use right lane" signs along the two-lane eastbound portion of SR-92

Half Moon Bay

Within the City of Half Moon Bay, the following intersections are operating below the existing Midcoast LCP LOS standard and have enough side street volume to meet a signal warrant:

- Highway 1 and Spindrift Way
- Highway 1 and Kehoe Avenue
- Highway 1 and Grandview Boulevard
- **Highway 1 and Terrace Avenue (Grand Boulevard repositioned to align with Terrace Avenue)** [5]
- Highway 1 and Filbert Street
- Highway 1 and Seymour Street
- **Highway 1 and Main Street (South)**

Additionally, the signalized intersections of Ruisseau Francais Avenue and Poplar Street currently operate at LOS F during the midday weekend peak. The City of Half Moon Bay has already begun the planning and design process to combine and signalize the intersections of Highway 1 at Terrace Avenue and Grand Avenue as well as signalize the intersection of Highway 1 and Main Street. In addition, the City of Half Moon Bay is looking into the effect of signal coordination on congestion in downtown Half Moon Bay.

[5] Projects in the recommended alternative that were also recommended in previous planning efforts by the County or the City of Half Moon Bay are boldfaced.

b. Bicycle and Pedestrian Facility Improvements

To provide a safer and more connected pedestrian and bicycle environment to the Midcoast area and Half Moon Bay, the following measures are recommended. Proposed bicycle facilities will be composed of Class I, Class II, and Class III facilities. Pedestrian facilities will include off-street paths, additional crossings, and intersection improvements. Both bicycle and pedestrian safety facilities will also be improved at intersections. While there was interest shown in reducing the speed limit, the recent Caltrans speed survey shows no justification for a lowered speed limit.

Class I: Multi-Use Paths

Currently, a Class I multi-use path runs parallel to a few sections of Highway 1. It is recommended that this trail be extended without any gaps from 2nd Street in Montara to Miramontes Point Road at the southern end of Half Moon Bay. The proposed Class I "parallel trail" alignment would include the following segments to become continuous:

- 6.2 mile segment along Highway 1 between 2nd Street in Montara and the existing facility at the Pillar Point RV Park

- 1.1 mile segment along Highway 1 between Coronado Street and the existing bicycle facilities at Roosevelt Boulevard in Half Moon Bay

- 0.3 mile segment along Highway 1 between SR 92, where the current path turns adjacent to Oak Avenue Park to go under Highway 1 and cross Pilarcitos Creek to join up with SR 92, and Kelly Avenue

- 1.1 mile segment along Highway 1 between the existing bicycle facilities just south of Wavecrest Road and the southern bus stop just south of Miramontes Point Road at the southern border of Half Moon Bay

Where driveway and cross streets cross the Class I path, there should be adequate paint to alert drivers that they are entering a space designated for bicycles and pedestrians.

In addition to the Class I path, the Coastal Trail adjacent to the coastline should be extended along the entire study area. The proposed Coastal Trail alignment is part of a proposed project

separate from this plan and would include the following segments to become continuous:

- 1.82 mile segment along Highway 1 between the Devil's Slide Trail and 2nd Street in Montara.

- Surfacing of an existing 1.69 mile dirt path along the coast in south Half Moon Bay.

These two separated paths will provide pedestrians and cyclists (commuters, tourists, and local users) with a safe separated direct connection to communities and locales along Highway 1.

Class II and Class III Bike Lanes

It is also recommended that a Class II bike lane be added to both sides of Highway 1 where the right-of-way and environmental analysis allow, potentially by slightly narrowing Highway 1 lanes in some locations where needed, based on the proposed bicycle environmental quality standard proposed for the Midcoast LCP. Currently, there is no Class II bike lanes at any point along this segment of Highway 1. The proposed Class II bike lane would extend a distance of 12.3 miles from the southern border of Half Moon Bay (just south of Miramontes Point Road to the parking lot for North Peak Access Road), where the road cut makes any further road widening difficult. The purpose of the Class II bike lane is to separate commuting bicycle traffic from the recreational bicycle and pedestrian traffic that would use the parallel and coastal trail paths.

Future improvements should include the extension of the bike network to the north and south. These facilities will be part of the proposed North Coast Bikeway in the County's Comprehensive Bicycle and Pedestrian Plan (CBPP), connecting Daly City, Pacifica, and Half Moon Bay.

Additional Class II bike lanes are recommend along State Route 92 from Main Street in Half Moon Bay to SR-35, and Class III bicycle routes along Capistrano Road, which is currently being evaluated for Plan Princeton and was determined not to have room for Class II lanes.

The addition of a Class II bike path on Highway 1, which would provide bicycle access on both sides of the street (preventing the need to cross), will bring the BEQI score to the minimum recommended score of 61. In addition to meeting the bicycle standard, the addition

of a Class II bicycle lane along Highway 1 will meet the multimodal criteria for a higher Delay Index standard.

Pedestrian Walkways

In addition to the bicycle improvements along roadway segments, unpaved pedestrian walkways are recommended along Highway 1 in Montara, Moss Beach, Miramar, and developed areas of Half Moon Bay that provide, at minimum, a six foot wide flat surface free of any impediments that could cause a hazard to pedestrians (hazards include any surface condition that could cause a pedestrian to trip or injure themselves.). These paths are needed on both sides of the highway and should be separated by a minimum of three feet from the edge of auto or bicycle travel lanes. This will provide the much needed pedestrian access in the areas with the highest pedestrian demand.

Pedestrian Crossings

The lack of striped crossings throughout most of the Midcoast leads to pedestrians crossing Highway 1 at uncontrolled locations without any safety precautions. In order to also address the wishes of the community, the desired maximum distance between pedestrian crossings in areas with potential pedestrian demand would be increased to 0.5 miles. Striped pedestrian crossings with beacons to alert drivers along undeveloped portions of Highway 1 are proposed at the following locations:

- **Gray Whale Cove** [6]
- Montara State Beach
- Half Moon Bay Airport
- Quarry Road (along SR 92)
- Pilarcitos Creek Road (along SR 92)
- SR 35 (along SR 92)

Striped pedestrian crossings with beacons (except where noted) to alert drivers along developed portions of Highway 1, with the potential for regular pedestrian demand, are proposed at the following locations:

[6] Projects in the recommended alternative that were also recommended in previous planning efforts by the County or the City of Half Moon Bay are boldfaced.

- **2nd Street (with pedestrian refuge south of 2nd Street and no flashing beacon)**

- **7th Street**

- **Moss Beach Lighthouse (16th Street)**

- North Capistrano Road

- Surfer's Beach Parking area, near Pillar Point RV Park

- Between Magellan Avenue and Medio Avenue

- **Mirada Road**

- Purisima Way

- Redondo Beach Road

Striped pedestrian crossings are proposed as part of the proposed installation of signalized intersections at the following locations:

- **California Street**

- **Cypress Avenue (Pedestrian crossing configuration would need further analysis if a double lane roundabout is proposed)**

- Kehoe Avenue

- **Terrace Avenue/Grand Boulevard**

- **Main Street (South)**

<u>Traffic Signal Pedestrian Improvements</u>

Many signalized intersections within the study area are not pedestrian friendly and the plan should implement the following upgrades:

- Pedestrian count-down indicators on all signalized crosswalks

- Timing adjustments to be consistent with current requirements assuming 3.5 feet per second as the walking speed of pedestrians

- Bicycle signal detection

- Pedestrian refuges on wide road crossings

Currently none of the intersections meet the minimum recommended PEQI score. The above proposed improvements will meet the PEQI standard score that has been adopted for this project.

c. Transit Improvements

The following transit projects are suggested to provide a safer and more connected environment to the Midcoast area and Half Moon Bay:

- More frequent weekend service for the existing SamTrans fixed routes 294 and 17 serving the study area.

- Implementation of the Coastside Beach Shuttle to reduce the parking load at beach lots with additional buses during special events.

- School bus service for Cabrillo Unified School District including a facility for storing the vehicles and maintenance.

The following transit projects are suggested to address transit deficiencies:

- Installation of benches at the following bus stop locations:

    • Highway 1 and SR-92 (average of 16 daily boardings)

    • Strawflower Shopping Center (average of 29 daily boardings)

    • Kelly Avenue and Church Street (average of 24 daily boardings)

    • Main Street and Lewis Foster Drive (average of 21 daily boardings)

d. Parking Improvements

The following transit projects are suggested to address transit deficiencies:

- Formalized parallel parking for Montara State Beach, with a physical separation from Highway 1.

- Diagonal parking for El Granada separated from Highway 1 (this is part of a proposed Highway 1 realignment, however it is suggested that, given the parking need, it be constructed independent of the approval of the larger project in El Granada).

- Implementation of the Coastside Beach Shuttle to reduce the parking load at beach lots, include the following:

    • Roosevelt Beach

    • Half Moon Bay State Beach parking lot at Kelly Avenue

    • Implementation of pricing strategies to bring the deficient lots to a desirable occupancy

The following parking projects are suggested to provide a safer environment to the Midcoast area and Half Moon Bay:

- Improved wayfinding signage

- Paving and striping at the upper Gray Whale Cove parking lot

3. Land Use Policies

The following land-use policies are recommended to reduce transportation impacts of future development.

a. Mandatory Lot Merger Program

A lot merger program would allow contiguous parcels with the same ownership to be merged as long as at least one of the lots is underdeveloped and less than the minimum parcel size requirement. For undeveloped lots, the program would operate as a voluntary merger program for 21 months after adoption, and then become mandatory, with a process for noticing, hearing, determination, and appeals. During the voluntary period, any property owner who requests a merger would receive a non-expiring voucher that could be used for one of the following: (a) up to 250 square feet bonus floor area or (b) up to $1,500 (new unit) or $300 (existing unit) or a 5 percent reduction in building permit fees, whichever is greater; or an allowance that one parking space may be uncovered. For an affordable housing unit, additional incentives would be provided. Implementation of a mandatory lot merger program, generally following the policy adopted by San Mateo County in 2006, would reduce the number of undeveloped parcels along the Midcoast. The effect, however, of this reduction in the number of lots, was already

accounted for in the Buildout forecast, because lot mergers were assumed to take place in the Midcoast LCP.

Spatial analysis determined that the proposed lot merger program could reduce development potential in the unincorporated portion of the Study Area by an estimated 216 lots. The majority of development potential reduction would occur in residential districts, reducing the number of vacant substandard lots by 40 percent. Most of the lot mergers (165 lots) would occur in residential districts, with a smaller number (51 lots) in the Resource Management (RM-CZ) district. The effect of this reduction in lots is already assumed in the Buildout Condition and the Constrained Development Potential Forecast.

b. Mandatory Lot Retirement Program

A lot retirement program could be designed to provide flexibility to project applicants by allowing them to either:

- Directly purchase existing lots from willing sellers, and extinguish development rights;

- Donate lots to a land trust or similar organization that would do the same; or

- Pay an in-lieu fee to the City or County to acquire and retire development rights from willing sellers at a 1:1 ratio. For the in-lieu fee to function properly, an appropriate price per development credit would need to be established, and periodically reviewed and updated.

Acquisition of lots for lot retirement would be through donation or purchase. No property owner would be forced to sell their land for the purposes of this program. A lot retirement program requiring one-to-one retirement of development rights on existing lots in exchange for new lots would have the effect of reducing development potential and lessen the effect of new development on the transportation network.

Under the potential lot retirement program, development potential could be reduced in the unincorporated portion of the Study Area by an estimated 148 units (each retired lot in non-residential districts is assumed to equal one unit). In the unincorporated area, these lots are located in the Resource Management-Coastal Zone and Planned Agricultural districts; the analysis does not include lots in residential districts in order to prioritize infill development.

c. Traffic Fee Mitigation Program

A transportation fee mitigation program would collect fees for new residential and non-residential development on a per-housing-unit basis for residential and on a per-square foot basis for non-residential development. The rates would be based on a specified list of projects needed to mitigate the impacts of the growth, the total estimated capital cost of those projects, and the amount of new development expected. Although a Transportation Impact Mitigation Fee Program is being considered as a method for funding transportation improvements needed to accommodate growth rather than as a growth management strategy, the fee program could have some impact on the total amount of new development that occurs, if they raise the cost of development.

NEXT STEPS

Following the feedback received from members of the public, the San Mateo County Planning Commission, the Half Moon Bay City Council, and the Midcoast Community Council on the transportation improvements and the land use policies described above, an environmental evaluation of the draft Plan will be initiated, with the intent to identify a preferred alternative that could achieve an effective, productive balance between future transportation demand and land use development on the Midcoast, consistent with LCP Policy 2.53. The forecast and policies will be subject to review and feedback from the TAC, as well as the public, through meetings and a workshop, to occur in the Spring of 2016.

The following chronology lists anticipated actions, which includes expected project culmination in the Summer of 2016:

Date		Action
June 2016	-	Board of Supervisors Update
August 2016	-	Technical Advisory Committee Meeting for Review of Draft Comprehensive Transportation Management Plan
September - October 2016	-	MCC and Half Moon Bay City Council updates
October 2016	-	Public Workshop #5 for Review of Draft Comprehensive Transportation Management Plan
November 2016	-	Planning Commission adoption of Draft Comprehensive Transportation Management Plan

December 2016 - Board of Supervisors adoption of Draft Comprehensive Transportation Management Plan

ATTACHMENTS

A. Evaluation of Recommended Alternative to Address Potential Future Transportation Deficiencies Memo and Appendices
B. DKS Associates Letter Responding to Comments from April 7, 2016 Connect the Coastside Workshop

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CONNECT THE COASTSIDE

Evaluation of Recommended Alternative to Address Potential Future Transportation Deficiencies

Draft Report

Prepared for
San Mateo County

By

DKS

1970 Broadway, Suite 740
Oakland, CA 94612
(510) 763-2061

In association with Dyett & Bhatia, Nelson Nygaard, and Flint Strategies

March 10, 2016

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EXECUTIVE SUMMARY

BACKGROUND OF WORK AND INPUT ON CONNECT THE COASTSIDE

Connect the Coastside was undertaken by San Mateo County to meet a requirement of the Midcoast Update to San Mateo County's Local Coastal Program (LCP), which was certified by the California Coastal Commission in 2012. Policy 2.53 of the Updated Midcoast LCP required San Mateo County to prepare a Comprehensive Transportation Management Plan (CTMP) that demonstrates that future development can be supported by the future transportation system and infrastructure. Connect the Coastside has been undertaken to identify and evaluate transportation improvements and changes in land-use policy that in combination would meet the requirements of the Midcoast LCP. The primary focus of Connect the Coastside has been the unincorporated portion of San Mateo County along Highway 1 and the coastline between Devil Slide and Half Moon Bay – the area covered by the Midcoast LCP. The study area was expanded to include Half Moon Bay and the reminder of the unincorporated portion of the county along SR-92 between Half Moon Bay and I-280 for a more complete assessment of how well the future transportation system will accommodated expected growth. The results of Connect the Coastside will only be binding for the unincorporated portion of the study area, however, and will only be advisory for Half Moon Bay.

The project began with a forecast of development potential within the study area based on existing zoning. This forecast of development potential, referred to as the Buildout forecast, was used to evaluate the adequacy of the existing transportation system to accommodate potential future development. Adequacy of the transportation system was evaluated on the basis of a set of roadway level of service (LOS) standards contained in the Midcoast LCP. That analysis found that the existing transportation system would not be adequate to accommodate the amount of development in the Buildout forecast and meet the Midcoast LCP LOS standards.

The next step in the project was to identify transportation improvements that could help to address the LOS deficiencies of the Buildout growth forecast. The potential transportation improvements were developed with considerable input from a Technical Advisory Committee, the Midcoast Community Council, the Half Moon Bay City Council, an on-line public survey and a public workshop. With the potential improvements, the project team identified and evaluated low-, medium- and high-cost packages of improvements as alternatives. From the results of the evaluation a "Hybrid" alternative was identified and evaluated. The Hybrid alternative addressed most but not all of the LOS deficiencies. This alternative was presented in the project report and in a round of stakeholder and public outreach.

The project team concluded from the outreach that there was not adequate support for some of the roadway-capacity projects that would be needed to meet the Midcoast LCP LOS standards. There was also concern that the use of only roadway LOS standards over-emphasized the role of the automobile, and that a new set of multi-modal standards should be recommended that would recognize the importance of walking, bicycling, and transit use in meeting the mobility needs of the future. The team also concluded that there was serious concern among the

stakeholders and public about the use of the Buildout forecast of development potential because it did not reflect all of the policies of the County and Half Moon Bay or the natural constraints that would limit future development to something less than the full Buildout.

This led to the development of a new set of transportation performance standards that included more modes and a new forecast of development potential that reflected the existing policies and environmental constraints on development on the Coastside. The alternatives standards and the forecast of development potential were documented and circulated for review in the fall of 2015. After making refinements to reflect stakeholder and public input, the new standards and forecast were used to re-evaluate the hybrid alternative. The project team was able to modify the set of projects in a way that responded to the stakeholder and public input from the spring of 2015 and produce a more context-sensitive set of solution options that also ensure an acceptable level of service by all modes. This report describes the evaluation conducted and documents the set of transportation and land-use policy improvements recommended.

CONSTRAINED FORECAST OF DEVELOPMENT POTENTIAL

The Constrained Forecast of Development Potential used the zoning-based Buildout forecast as a starting point, but then took into account the following potential constraints:

- The growth management limitations in the San Mateo County Midcoast Local Coastal Plan and the City of Half Moon Bay's Measure D;
- The market demand for new housing and non-residential development in Half Moon Bay based on the market analysis conducted in 2014 for the Half Moon Bay General Plan Update.

This Constrained Forecast of Development Potential was also a 25-year forecast, consistent with other local and regional forecasts being produced. With regard to growth control measures, Policy 1.23 in the Midcoast LCP limits residential development in the unincorporated Midcoast to 40 units per year, while Measure D limits residential growth to 1 percent annually in Half Moon Bay, or 1.5 percent Downtown. For Half Moon Bay, the Buildout forecast had already resulted in a lower level of residential development than would be allowed under Measure D. As a result, zoning would be the most limiting factor for residential development in Half Moon Bay, while the LCP's growth management protocol would be the most limiting growth factor in the unincorporated Midcoast.

The Constrained Forecast of Development Potential also takes into account projected growth rates for residential and non-residential development from the market study conducted in 2014 for the Half Moon Bay General Plan Update. These growth rates reflected the project team's best understanding of the interaction between market demand and development constraints in Half Moon Bay. The market study indicated the least amount of non-residential development in Half Moon Bay.

The results of the Constrained Forecast of Development Potential compared to the Buildout forecast were as follows:

Table E- 1 Constrained Residential Development Forecast for the CTMP (2040)

	Existing			Total (2040)			
Subarea	Total Units	Single-Family	Multi-family	Total Units	Single-Family	Multi-family	Percent Change
Unincorporated Midcoast	4,300	4,005	295	5,416	4,740	676	26%
Half Moon Bay	4,481	3,493	988	5,335	4,106	1,229	19%
Total	**8,781**	**7,498**	**1,283**	**10,750**	**8,846**	**1,905**	**22%**

Table E- 2 Constrained Non-Residential Development Forecast for the CTMP (2040)

	Existing	Total (2040)	
Subarea	Jobs	Jobs	Percent Change
Unincorporated Midcoast	2,551	4,994	96%
Half Moon Bay	5,334	5,704	7%
Total	**7,885**	**10,698**	**36%**

These forecasts of development potential resulted in the following changes from the Buildout forecast:

- 13 percent overall reduction in housing units with almost all of the reduction being in the unincorporated portion of the Midcoast
- 8 percent overall reduction in new commercial development with almost all of the reduction being in the city limits of Half Moon Bay.

PROPOSED ALTERNATIVE MULTI-MODAL TRANSPORTATION PERFORMANCE STANDARDS

Existing Roadway Segment Congestion Standards

The Midcoast LCP defined the roadway segment LOS standard for Highway 1 and SR 92 as LOS D, except during commuter peak periods and recreation peak periods, during which LOS E is considered acceptable. The City of Half Moon Bay's Circulation Element defines the LOS standard for Highway 1 and SR 92 as LOS C, except during the commuter peak periods and recreational

peak periods when LOS E is acceptable. Roadway segment LOS is based on the ratio between observed volume during peak periods and the capacity of the roadway segment. As such, the roadway segment LOS measure does not take into account observed congestion and delay experienced by users (as a result of intersections and other sources of increased travel time) and only offers improvements that divert significant volume to other parts of the network or that increase capacity through road widening.

Existing Intersection Congestion Standards

The *San Mateo County Traffic Impact Study Requirements* defines the intersection LOS standard for San Mateo County as LOS C with no individual movement operating at worse than LOS D. For unsignalized intersections, this represents the delay experienced by minor street traffic entering Highway 1. The City of Half Moon Bay's Circulation Element (adopted 2013) has established a desired LOS C at intersections along Highway 1 and SR 92, except during the two-hour commute periods, when LOS E is acceptable. Because the majority of intersections within the study area are unsignalized and only controlled by stop signs for minor approaches, the existing standards give priority to the delay experienced by the relatively low volumes entering Highway 1 or SR 92 over the higher volume of through traffic along Highway 1 or SR 92. In order to address long delays, signalization, roundabouts, or consolidation of access points to concentrate access to Highway 1 at specific locations would be required.

Recommended Alternative Transportation Performance Standards

To address the biases in the existing transportation performance standards and to provide a more complete coverage of all modes, a set of multi-modal standards were developed based on standards being used in the Bay Area or elsewhere in the US. New performance standards were identified for roadways, pedestrian facilities, bicycling facilities, transit facilities and services and parking facilities and each is described below.

Roadway Standards

- Delay Index – Defined as the ratio of peak period travel time on a segment to the free-flow travel time, the Delay Index was recommended as a replacement for the roadway segment LOS based on V/C ratio. For vehicle-only segments, a Delay Index of 2.0 was recommended, and for segments that support multi-modal travel, a Delay index of 3.0 was recommended.
- Intersection Level of Service – It was recommended that the intersection LOS standard be maintained for signalized intersections, but applied for unsignalized intersection only if the intersection has sufficient side-street traffic to meet a peak-hour traffic signal warrant.

Pedestrians

- Pedestrian Environmental Quality Index (PEQI) – Using an index developed by the City and County of San Francisco Department of Health as a measure of expected pedestrian

demand of volume on a segment, the standard for segments along Highway 1 with an INDEX Walking Demand Score[1] between 20 and 29 would be a PEQI score of 41 or higher. The standard for segments along Highway 1 or streets connecting Highway 1 with a beach facility with an INDEX Walking Demand Score of 30 or greater would be a PEQI score of 61 or higher. The PEQI takes into account the following aspects of pedestrian facilities:

  - Intersection Safety (presence of crosswalks, intersection lighting, refuge islands, etc.)
  - Traffic Volume (adjacent traffic volume, number of lanes, speed limit)
  - Street Design (continuity of walkways, width of walkways, curb cuts, etc.)
  - Land Use
  - Perceived Safety (pedestrian lighting, cleanliness, empty lots)

- Pedestrian Crossing Spacing – Safe pedestrian crossing locations no greater than a half mile apart in all areas with an INDEX Walking Demand Score of 20 or higher

Bicycle

- Bicycle Environmental Quality Index (BEQI) – Again using an index developed by the City and County of San Francisco Department of Health, the standard for segments along Highway 1 would be a minimum BEQI score of 61 or higher for bicycle travel. The BEQI takes into account the following aspects of bicycle facilities:
  - Intersection Safety (dashed bicycle lane, no turn on red, etc.)
  - Traffic Volume (adjacent traffic volume, number of lanes, speed limit, presence of parallel parking, etc.)
  - Street Design (striped area for bicycle traffic, width of bicycle lane, connectivity, curb cuts, etc.)
  - Safety/Other (street lighting, presence of bicycle lane or "share the roadway" signs)
  - Land Use (line of sight, bicycle parking, retail use)
- Bicycle Parking Occupancy – Bicycle parking occupancy at beach access lots or major trip generators along Highway 1 not average over 85% during peak weekday hours.

Transit

- Transit Loading Factor – standard for the transit capacity utilization of buses standing capacity within the study area not to exceed a two-hour average of 85% during the weekday commute peak period and the weekend recreational peak period.
- Stop Amenities – A bench be provided if a stop averages 25 or more boardings a day and a shelter if the stop averages 100 or more boardings per day.

[1] San Mateo County Comprehensive Bicycle and Pedestrian Plan, Appendix C: Figure C-3 includes scores for the study area

Parking

- Parking Occupancy – Parking occupancy at beach access lots not average over 85% during peak weekend hours.

REVISED HYBRID IMPROVEMENT PACKAGE

After review of the future transportation needs and deficiencies as determined by the recommended alternative multimodal transportation performance standards, the following set of transportation improvements were recommended by the project team:

- Roadway Improvements
  - Turn Lanes and Acceleration Lanes on Highway 1
    - Gray Whale Cove Turn and Acceleration Lanes (North of Montara)
    - Montara Lighthouse Median and Left Turn Bay (Montara)
  - Paved Shoulder and Curb (Montara, Moss Beach, El Granada, Half Moon Bay)
  - Installation of a Traffic Signal
    - Highway 1 and California Avenue (Moss Beach)
    - Highway 1 and Cypress Avenue (Moss Beach)
    - Highway 1 and Kehoe Avenue (Half Moon Bay)
    - Highway 1 and Grand Boulevard/Terrace Avenue (Half Moon Bay)
    - Highway 1 and Main Street (south end) (Half Moon Bay)
  - Installation of a Roundabout
    - SR-92 and SR-35 (east end) (East of Half Moon Bay)
  - Access Consolidation
    - Rocket Farms Access to Highway 1 (Half Moon Bay)
    - Terrace Avenue/Grand Boulevard Access to Highway 1 (Half Moon Bay)
  - Roadway Widening
    - Highway 1 at Ruisseau Francois Avenue (Half Moon Bay)
    - Widening and striping of approach on Spindrift Way at Highway 1 (Half Moon Bay)
    - Widening and striping of approach on Grandview Boulevard at Highway 1 (Half Moon Bay)
    - Highway 1 between Kelly Avenue and Main Street (south end) (Half Moon Bay)
    - Passing Lane/Climbing Lane on SR-92 (east of Half Moon Bay)
  - Traffic Calming
    - Main Street (Montara)
    - Carlos Street (Moss Beach)
  - Signage
    - Addition of stop signs where missing on stop-controlled side streets on Highway 1 (Montara, El Granada, Half Moon Bay)
    - "Trucks Keep Right" signage on SR 92 (east of Half Moon Bay)

- Pedestrian Facility Improvements
    - Coronado Street and Ave Alhambra walkway (El Granada)
    - Multi-use Trail Completion
        - Parallel Trail adjacent to Highway 1 for the entire study area
        - Coastal Trail throughout the entire study area
    - Striped pedestrian crossings of Highway 1 throughout the entire study area
    - Traffic signal upgrades to provide pedestrian detection and actuation (Half Moon Bay)
- Bicycle Facility Improvements
    - Highway 1 Class II Bicycle Lane throughout the entire study area
    - SR-92 Class II Bike Lanes (Half Moon Bay, east of Half Moon Bay)
    - Capistrano Road Class II Bike Lanes (El Granada)
    - Airport Street Class III Bike Routes (Moss Beach)
- Transit Improvements
    - Increased Weekend Samtrans service (annual operating)
    - Bus Stop Amenities (Half Moon Bay)
- Parking Improvements
    - Park and Ride Shuttle and Event service
    - Pricing strategies to maintain an 85% lot occupancy
    - Wayfinding signage
    - Montara State Beach Parking Lot Improvements
    - Upper Gray Whale Cove Parking Lot Improvements
    - Carlos Street On-Street Parking
    - El Granada Diagonal Parking

The project team also considered a number of transportation land use policies that would help to mitigate the impact of new development. Three recommended polies were as follows:

- Lot Merger Program – Establishment of a process for merging contiguous substandard parcels under the same ownership. This would apply as long as the area of at least one lot is less than 4,500 square feet (R-1 or R-3 residential districts), or less than 5,000 square feet (RM-CZ commercial districts). The program would be voluntary with incentives for 21 months and then become mandatory with a hearing and appeal process.
- Lot Retirement Program – The Coastal Commission has recently required lot retirement at a one-to-one ratio (1:1) as a condition of approval for some proposed residential subdivisions in Half Moon Bay to mitigate impacts to the transportation system and public access to the coast. There is no current program in place for the City of Half Moon Bay or San Mateo County however the Coastal Commission recommended such a program in the Midcoast LCP Update.

- Development Impact Fee Program – Such a program would collect fees for new residential and non-residential development on a per-housing-unit basis for residential and per-square-foot basis for non-residential development. The rates would be based on a specified list of projects needed to mitigate the impacts of the growth, the total estimated capital cost of those projects and the amount of new development expected. An assessment of the portion of total project need attributable to growth will determine what a legally defensible rate structure might be for a Transportation Impact Mitigation Fee Program.

EVALUATION OF THE RECOMMENDED ALTERNATIVE

The proposed set of transportation improvements was created to address deficiencies in the Buildout condition based on the standards proposed for the Midcoast LCP and general safety and circulation concerns. While the City of Half Moon Bay is not bound by the standards proposed for the Midcoast LCP, the set of proposed standards were used for evaluation across the entire study area for consistency. The proposed set of transportation improvements recommended by the project team address all of the deficiencies with a few exceptions described in the following sections.

Roadway and Intersection Standards and Deficiencies

The proposed intersection improvements and widening projects address all of the identified intersection deficiencies with the exception of the signalized intersection of SR 92 and SR 35 (east end). The intersection is forecasted to operate at a level of service F during weekday PM and weekend midday peak hours, and while the conversion of the intersection reduces the delay experienced by vehicles under all time periods, it does not reduce it to a level that would no longer be considered deficient under the current LOS standards. No other feasible improvements were identified for this location to address the deficiency.

The segment of Highway 1 between the north border of Half Moon Bay and SR 92 is considered deficient based on the Delay Index standard proposed for the Midcoast LCP with no feasible improvement identified to address the deficiency; however, the City of Half Moon Bay is not bound by the standards or improvements proposed by this study. The City of Half Moon Bay is currently looking into signal coordination to address the congestion caused by the signals north of SR 92.

Bicycle and Pedestrian Standards and Deficiencies

The proposed bicycle facilities and bicycle/pedestrian based intersection improvements result in all of the environmental quality standards being met for the study area.

The proposed improvements reduce the maximum distance between safe pedestrian crossing locations to the proposed standard of a maximum of ½ mile between pedestrian crossings in areas with the potential for pedestrian activity, with the exception of the segment between Main

Street (South) and Redondo Beach Road which has a spacing of 0.63 miles. This segment is considered deficient based on the crossing density standard proposed for the Midcoast LCP; however, the City of Half Moon Bay is not bound by the standards or improvements proposed by this study. Based on the land use along this segment and discussions with City of Half Moon Bay staff, it was determined that this location did have significant potential for pedestrian travel to warrant an additional pedestrian crossing.

Transit Standards and Deficiencies

The proposed transit improvements result in all of transit standards being met for the study area.

Parking Standards and Deficiencies

The proposed parking improvements result in all of transit standards being met for the study area.

INTRODUCTION

BACKGROUND

In 2012, the California Coastal Commission certified a package of amendments known as the Midcoast Update to San Mateo County's Local Coastal Program (LCP). Policy 2.53 of the Updated Midcoast LCP requires San Mateo County to prepare a Comprehensive Transportation Management Plan (CTMP), and ***Connect the Coastside*** is the project that will produce the CTMP. The CTMP requirement of the Midcoast Local Coastal Program is designed to respond to the potential impact that growth in the region will have on the Midcoast transportation system, which is viewed by many as insufficient to support the current and future needs of the community and visitors. The impact was identified through an evaluation of the transportation facilities within the study area under existing and forecasted buildout level of development conditions. The Midcoast LCP included transportation performance standards that were used to evaluate the impacts of growth on the whole study area and identify existing and future deficiencies caused or exacerbated by that growth. While the City of Half Moon Bay is not bound by the Midcoast LCP, the analysis included identification of deficiencies and potential improvements for the entire study area in order to serve as an advisory document for the City of Half Moon Bay.

In April 2015, the *Evaluation of Transportation Alternatives to Address Buildout Deficiencies* Report was prepared to present several alternatives that were developed to address some or all of the deficiencies identified in the *Buildout Analysis and Traffic Projections Report* for a full "buildout" of development potential under current zoning and other land use regulation. The improvements identified in each alternative were evaluated based on how well they could address the identified deficiencies as well as on their feasibility and their cost-effectiveness. The result of that report was a hybrid alternative that combined improvements from all three alternatives to create a comprehensive, cost-effective solution to address Buildout deficiencies.

PROPOSED NEW TRANSPORTATION PERFORMANCE STANDARDS FOR THE MIDCOAST LCP

Based on input from stakeholders, including the Midcoast Community Council, the City of Half Moon Bay, and residents throughout the study area; the hybrid alternative was revised to address a new set of multimodal transportation performance standards proposed for the Midcoast LCP in a memorandum[2] dated September 23, 2015. The new performance standards proposed for the Midcoast LCP include the following changes:

[2] Recommendation of Alternative Transportation Standards for the San Mateo County Comprehensive Transportation Management Plan, September 23, 2015

Roadway Standards

- Replace the roadway link level of service standard based on the ratio between volume and capacity with a Delay Index – Defined as the ratio of peak period travel time on a segment to the free-flow travel time
- Apply the existing intersection LOS standard for all signalized intersections, but only for unsignalized intersection if the intersection has sufficient side-street traffic to meet a peak-hour traffic signal warrant.

Pedestrians

- Introduce a Pedestrian Environmental Quality Index (PEQI) standard based on an index developed by the City and County of San Francisco Department of Health. The INDEX Walking Demand Score is a measure of expected pedestrian demand of volume on a segment based on land use. The standard for segments along Highway 1 with an INDEX Walking Demand Score between 20 and 29 would be a PEQI score of 41 or higher. The standard for segments along Highway 1 or streets connecting Highway 1 with a beach facility with an INDEX Walking Demand Score of 30 or greater would be a PEQI score of 41 or higher. The PEQI takes into account the following aspects of pedestrian facilities:
    - Intersection Safety (presence of crosswalks, intersection lighting, refuge islands, etc…)
    - Traffic Volume (adjacent traffic volume, number of lanes, speed limit)
    - Street Design (continuity of walkways, width of walkways, curb cuts, etc…)
    - Land Use
    - Perceived Safety (pedestrian lighting, cleanliness, empty lots)
- Introduce a pedestrian crossing density standard such that safe pedestrian crossing locations should be no greater than a half mile apart in all areas with an INDEX Walking Demand Score of 20 or higher

Bicycle

- Introduce a Bicycle Environmental Quality Index (BEQI) standard based on an index developed by the City and County of San Francisco Department of Health. The standard for segments along Highway 1 would be a minimum BEQI score of 61 or higher for bicycle travel. The BEQI takes into account the following aspects of bicycle facilities:
    - Intersection Safety (dashed bicycle lane, no turn on red, etc…)
    - Traffic Volume (adjacent traffic volume, number of lanes, speed limit, presence of parallel parking, etc…)
    - Street Design (striped area for bicycle traffic, width of bicycle lane, connectivity, curb cuts, etc…)

  - Safety/Other (street lighting, presence of bicycle lane or "share the roadway" signs)
  - Land Use (line of sight, bicycle parking, retail use)
- Introduce a bicycle parking occupancy standard such that bicycle parking occupancy at beach access lots or major trip generators along Highway 1 should not average over 85% during peak weekday hours.

Transit

- Introduce a transit loading factor standard for the transit capacity utilization of buses standing capacity within the study area not to exceed a two-hour average of 85% during the weekday commute peak period and the weekend recreational peak period.
- Introduce a stop amenities standard such that at minimum a bench be provided if a stop averages 25 or more boardings a day and a shelter if the stop averages 100 or more boardings per day.

Parking

- Introduce a parking occupancy standard such that parking occupancy at beach access lots not average over 85% during peak weekday hours.

CONSTRAINED FORECAST OF DEVELOPMENT POTENTIAL RECOMMENDED FOR CONSIDERATION

An additional forecast of development potential was also developed for use in the evaluation of future needs and deficiencies (along with the Buildout forecast) referred to as the "Constrained Forecast of Development Potential." This new forecasts of development potential recognizes constraints besides zoning and existing policies that are likely to limit future development to a level below that of the Buildout condition previously analyzed. These constraints include application of the Midcoast LCP Policy 1.23 limiting new residential development to 40 units per year, and a market analysis prepared for the Half Moon Bay General Plan. The results of the Constrained Forecast of Development Potential compared to the Buildout forecast are as follows:

- 13 percent overall reduction in housing units with almost all of the reduction being in the unincorporated portion of the Midcoast
- 8 percent overall reduction in new commercial development with almost all of the reduction being in the city limits of Half Moon Bay.

The result of the constrained forecast on the transportation was a reduction in travel times along Highway 1; however the reduction was not significant enough to remove any identified deficiencies.

RECOMMENDED ALTERNATIVE LAND USE AND TRANSPORTATION ALTERNATIVE

This report presents the resulting recommended alternative and an evaluation of how the proposed improvements address deficiencies as determined by the new multimodal transportation performance measures proposed for the Midcoast LCP. The implications of the new Constrained Forecast of Development Potential for deficiencies and the need for improvements are also discussed. An environmental evaluation of the recommended alternative will be completed before the CTMP is finalized and recommended for approval. After the recommended alternative has been approved, a Comprehensive Transportation Management Plan (CTMP) will be prepared for adoption and implementation by the Board of Supervisors for the Midcoast communities of San Mateo County. The CTMP will also serve as a reference for the City of Half Moon Bay's own planning efforts.

SUMMARY OF DEFICIENCIES IDENTIFIED FOR FUTURE CONDITIONS

The *Buildout Analysis and Traffic Projections Report* provided a detailed analysis of existing transportation issues and deficiencies on the Midcoast and in Half Moon Bay. Deficiencies were identified for the Midcoast, Half Moon Bay and State Route (SR) 92 east of Half Moon Bay by comparing existing conditions to the policies and level of service (LOS) standards defined in the current Local Coastal Program[3] (LCP) and the Half Moon Bay General Plan Circulation Element Update[4]. The deficiencies identified for each area for a full "buildout" of development potential under current zoning and other land use regulation were documented in the Task 2 *Buildout Analysis and Traffic Projections Report* and summarized separately below. This report identifies deficiencies under Buildout using the new multimodal transportation performance measures. It also describes how the use of the new Constrained Forecast of Development Potential would affect the assessment of deficiencies. The results in the evaluation section are presented separately for the unincorporated Midcoast, the unincorporated area along SR 92 east of Half Moon Bay, and the area encompassed by the City of Half Moon Bay..

MIDCOAST

Deficiencies under the Buildout Condition

Intersection Level of Service

Under Buildout conditions, the projected increase in traffic along Highway 1 within the Midcoast communities will result in the majority of unsignalized intersections producing high delay for vehicles trying to enter Highway 1. The majority of unsignalized intersections connecting residential neighborhoods with Highway 1 within the Midcoast will operate worse than the existing intersection LOS standard defined in the Midcoast LCP. If the proposed intersection level of service standard is applied, only the following intersections would not meet the standard:

- Highway 1 and California Avenue
- Highway 1 and Cypress Avenue

Roadway Segment Level of Service

Under Buildout conditions, the entirety of Highway 1 within the Midcoast would not meet the existing roadway segment LOS standard as defined in the current Midcoast LCP, based on the

[3] County of San Mateo Local Coastal Program Policies, 2013, County of San Mateo, Planning and Building Department.
[4] Half Moon Bay Circulation Element, 2013, City of Half Moon Bay.

volume of traffic the roadway is designed to handle. The proposed standard for roadway segments would replace the existing standard with a Delay Index.

Table 1 provides the study segments and the forecasted Delay Index under Buildout Conditions. Using the proposed new standard for roadway segments, which is defined as any segment with a Delay Index of greater than 2 during a peak period, Highway 1 along the Midcoast between 1st Street and Mirada Road would not meet the standards. **Figure 1** shows the segments along Highway 1 where the Delay Index is deficient during at least one peak period.

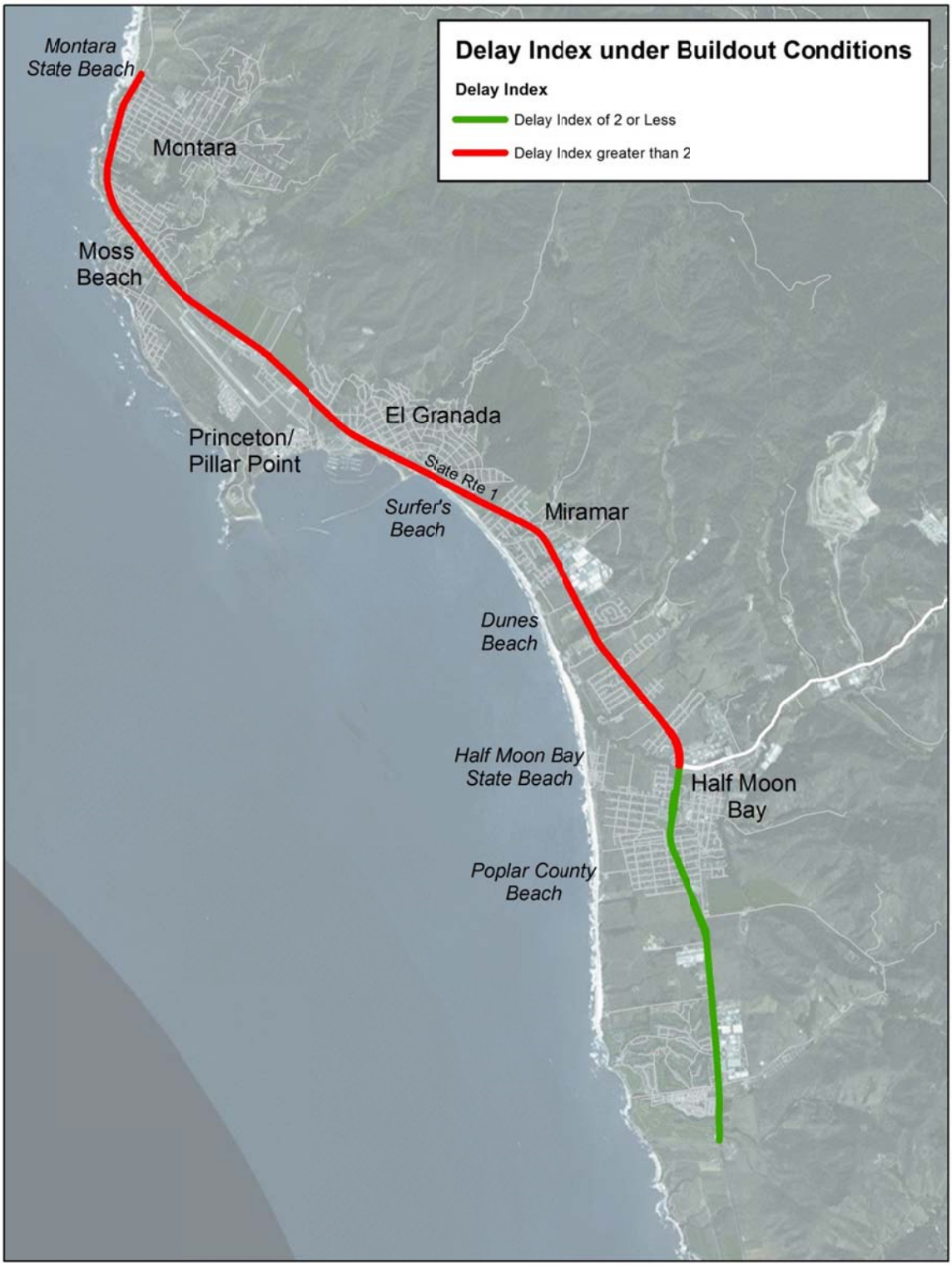

Figure 1 - Delay Index along Highway 1

Table 1 - Delay Index under Buildout Conditions

Segment	Speed Limit	Weekday AM Peak Delay Index	Weekday PM Peak Delay Index	Weekend Midday Peak Delay Index
1st Street to Mirada Road	45-55	**2.18**	**2.32**	1.95
Mirada Road to SR 92	45	**9.77**	**8.19**	**3.19**
SR 92 to Miramontes Point Road	40-50	1.02	1.03	1.95
Combined Highway 1 Segment		**3.35**	**3.13**	2.19

BOLD – Does not meet Delay Index Standard of 2.0 for a vehicle-only segment

Pedestrian Crossings of Highway 1

The layout of neighborhoods in many of the Midcoast communities inhibits mobility and often requires using Highway 1 to travel between nearby destinations. Additionally, beach access for pedestrians crossing Highway 1 is limited by infrequent crossing opportunities, heavy traffic volumes, and high vehicle speeds. Where designated crossings are located, there are often no additional pedestrian or bicycle friendly improvements such as countdown timers or bicycle detection to help pedestrians and cyclists safely cross Highway 1.

The proposed new standards set by the alternative standards document require having safe pedestrian crossing locations no greater than a quarter mile apart in all areas with a Pedestrian Demand Index of 20 or higher. **Figure 2** shows the existing and programmed pedestrian crossing locations. Within the Midcoast area, the majority of Highway 1 does not have existing crossings or has them spaced longer than a quarter of a mile. Specifically, the following segments are deficient.

1. Between 1th Street in Montara and Etheldore Street (South) in Moss Beach
2. Between Capistrano Road (North) in El Granada and the north border of Half Moon Bay

Pedestrian Environmental Quality

The proposed new standard also requires that all intersections of Highway 1 with a Pedestrian Demand Score of 30 or higher have crossing infrastructure that supports a PEQI score of 61 or higher. The signalized intersections along Highway 1 at Capistrano Road (South) and at Coronado Street, which have the area's only crosswalk, do not meet the PEQI intersection standards.

Additionally, none of the Highway 1 roadway segments within the Midcoast area meet the new PEQI Standard, with the standard defined as all segments with a Pedestrian Demand Score of 20 or higher requiring a PEQI score of 41 or higher and all segments with a Pedestrian Demand Score of 30 or higher requiring a PEQI score of 61 or higher. All Highway 1 roadway segments within Half Moon Bay must meet this requirement on at least one side of the street. No Highway 1 segments meet this requirement on both sides of the street. Highway 1 from Capistrano Road to Coronado

Street does have a pedestrian path on the west side of street and would meet the required PEQI score, but the other side is void of any pedestrian facility.

Bicycle Environmental Quality

Under the proposed standards, it is required that there are Class 2 bike lanes on both sides of Highway 1 and a Class 1 bike path stretching the entire length of the corridor. The entire length of Highway 1 within the Midcoast study area is deficient of Class 2 bike lanes and of the required Class 1 bike path.

Transit Service and Bus Stop Quality

Transit service operates at low frequencies and limited coverage. Additionally, existing bus stops lack amenities for safety and visibility and do not provide any shelter for users waiting for buses.

Parking Availability

There is generally sufficient parking supply during the weekdays; however during weekends and special events demand for parking can exceed the available capacity. The Martini Creek and Montara State Beach lots north of Montara and the Fitzgerald Marine Reserve lot in Moss Beach were observed to be at or above capacity during some peak periods. It was also noted that public parking locations are not always easily identified or signed.

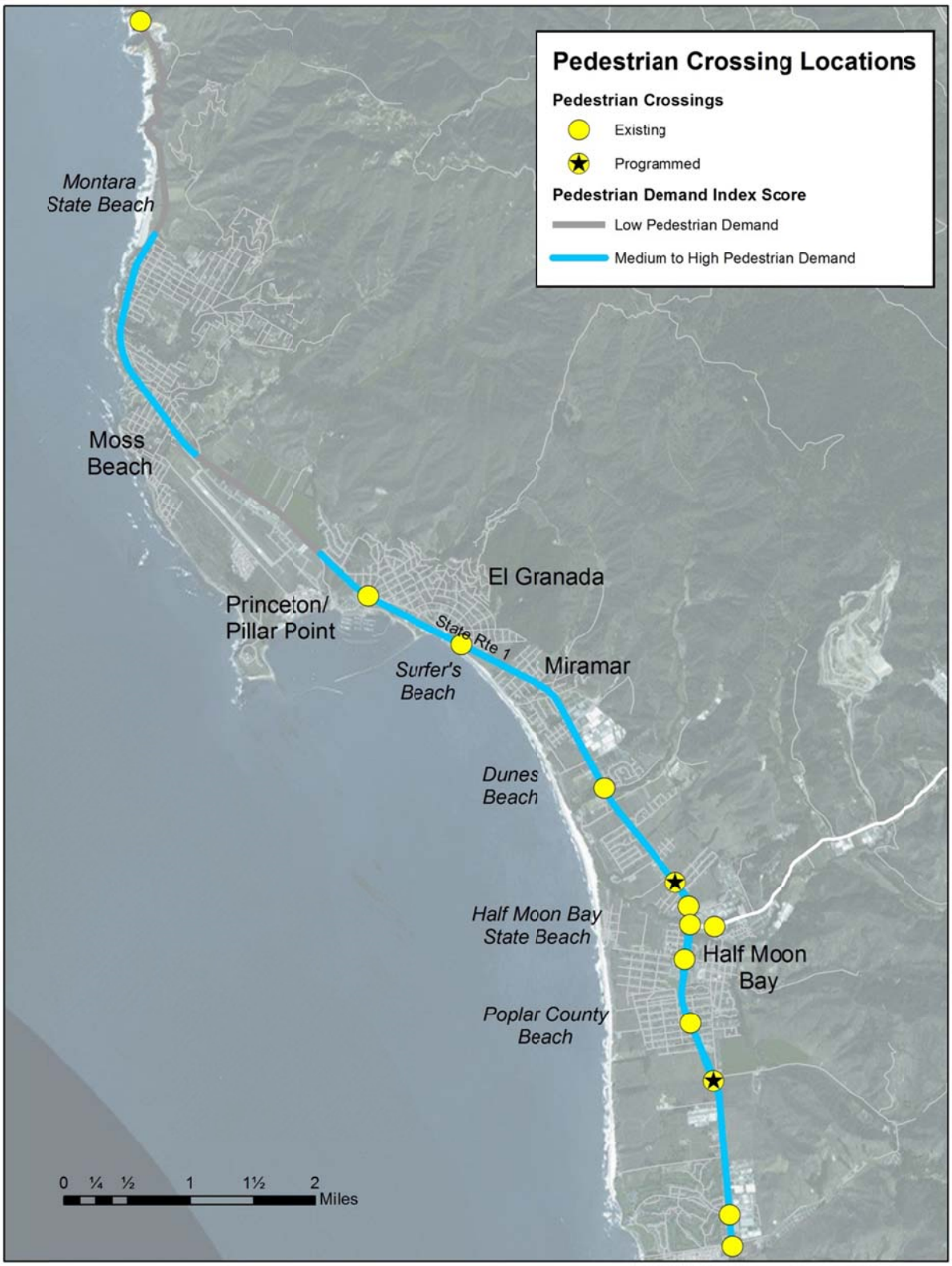

Figure 2 – Existing and Programmed Pedestrian Crossing Locations

Midcoast Deficiencies under the Constrained Forecast of Development Potential

While the majority of the deficiencies identified in the Buildout Condition do not change with the Constrained Development Potential forecast, there is a direct impact on forecasted travel times along Highway 1. **Table 2** provides the forecasted Delay Index under the Constrained Development Potential forecast as compared to Buildout Conditions. While there is no change to which segments meet the standard, the Delay Index does decrease for the segments that had the highest congestion under Buildout Conditions.

Table 2 – Comparison of Delay Index under the Constrained Forecast

Segment	Speed Limit (mph)	Weekday AM Peak Delay Index	Weekday PM Peak Delay Index	Weekend Midday Peak Delay Index
1st Street to Mirada Road	45-55	**2.03** (**2.18**)	1.69 (**2.32**)	1.95 (1.95)
Mirada Road to SR 92	45	**7.83** (**9.77**)	**5.93 (8.19)**	**3.16 (3.19)**
SR 92 to Miramontes Point Road	40-50	1.10 (1.02)	1.04 (1.03)	1.95 (1.95)
Combined Highway 1 Segment		**2.91 (3.35)**	**2.34 (3.13)**	**2.18 (2.19)**

Notes:
[1]**BOLD** – Does not meet Standard, (Buildout)

UNINCORPORATED SR 92 EAST OF HALF MOON BAY

Deficiencies under the Buildout Condition

Intersection and Roadway Segment LOS

Based on the increase in traffic along SR 92 under projected Buildout conditions, all study intersections along SR 92 will not meet the intersection LOS standards under projected Buildout conditions. The two-lane portion of SR 92 east of Main Street will not meet the roadway segment LOS standard under projected Buildout or constrained forecast conditions.

HALF MOON BAY

Deficiencies under the Buildout Condition

Based on the increase in traffic along Highway 1 under projected Buildout conditions, the majority of the unsignalized intersections as well as the signalized intersections of Ruisseau Francais Avenue and Poplar Street within the City of Half Moon Bay are expected to experience high delay and to operate worse than the intersection LOS standard defined in the Half Moon Bay Circulation Element. Highway 1 within the City of Half Moon Bay has several sections with four lanes that will operate within the roadway segment LOS standard. However, two-lane sections between Mirada Road and Grandview Boulevard, between Kelly Avenue and Seymour Street, and between Redondo Beach Road and Fairway Drive, will not meet the roadway segment LOS standard as defined in the Midcoast LCP, based on the volume of traffic the roadway is designed to handle.

The standards proposed for the Midcoast LCP as described in the alternative standards document do not apply to Half Moon Bay; however they are used in this study to provide a direct comparison to the Midcoast. The evaluation of deficiencies and proposed improvements are meant to be advisory. The proposed roadway segment standard define that any car-only segment with a Delay Index Score of greater than 2 or multimodal segment with a Delay Index Score of greater than 3 during a peak period to be deficient. Even with the portions of Highway 1 that include a parallel Class 1 multi-use path (i.e. Naomi Partridge Trail), the segment of Highway 1 north of SR 92 within Half Moon Bay would not meet these standards during any of the time periods. **Figure 1** shows the segments along Highway 1 where the Delay Index is deficient.

A lack of consistent pedestrian and bicycle trails and crossings results in decreased mobility and accessibility within and between communities within the City of Half Moon Bay. Additionally, pedestrian access along the Highway 1 corridor is limited by infrequent crossing opportunities, heavy traffic volumes, high vehicle speeds, and unimproved pedestrian facilities. There are no stop controls or treatments at uncontrolled locations to help pedestrians and cyclists safely cross the highways.

The standards proposed for the Midcoast LCP as described in the alternative standards document require having safe pedestrian crossing locations no greater than a half mile apart in all areas with a Pedestrian Demand Index of 20 or higher. **Figure 2** shows the existing pedestrian crossing locations. While Half Moon Bay provides many more crossing locations than the Midcoast, only the segments along Highway 1 between Main Street (North) and Poplar Street and between Fairway Drive and Miramontes Point Road have pedestrian crossings spaced less than a half mile apart. The programmed signalization of the intersections at Grand Boulevard/Terrace Avenue and Main Street (South) extend the coverage, however there are still large portions of Half Moon Bay without the density of pedestrian crossings identified in the proposed standard for the Midcoast LCP.

The new standard also requires that all intersections of Highway 1 within Half Moon Bay with a Pedestrian Demand Score of 30 or higher have crossing infrastructure that supports a PEQI score of 61 or higher. None of the intersections in Half Moon Bay would meet the PEQI intersection standards proposed for the Midcoast LCP.

The pedestrian environmental quality standards proposed for the Midcoast LCP includes all segments with a Pedestrian Demand Score of 20 or higher requiring a PEQI score of 41 or higher and all segments with a Pedestrian Demand Score of 30 or higher requiring a PEQI score of 61 or higher. Under existing conditions, the east side of Highway 1 from Roosevelt Boulevard to Young Avenue, the west side of Highway 1 from Young Avenue SR-92, and the west side of Highway 1 from Kelly Avenue to the southern intersection of Main St currently meet the standard for pedestrian environmental quality proposed for the Midcoast LCP. None of the Highway 1 segments meet this requirement on both sides of the street.

To meet the standard for bicycle environmental quality proposed for the Midcoast LCP would require Class 2 bike lanes on both sides of Highway 1 and a Class 1 bike path stretching the entire length of the corridor. The entire length of Highway 1 within the study area is lacking Class 2 bike lanes. The corridor is lacking a Class 1 bike path between SR-92 and Kelly Avenue and from the southern intersection with Main Street to the southern border of Half Moon Bay.

Transit service operates at low frequencies and limited coverage. Additionally, existing bus stops lack amenities and shelter for users waiting for buses.

The majority of beach access parking lots were observed to operate at close to 100% capacity during weekend midday recreational peak periods. The 85% parking occupancy standard for beach access parking lots proposed for the Midcoast LCP would not be met for any of these lots.

Deficiencies under the Constrained Forecast of Development Potential

While none of the deficiencies identified in the Buildout Condition change with the Constrained Development Potential forecast, the reduction in housing units and commercial development will affect forecasted travel times along Highway 1. **Table 2** provides the forecasted Delay Index under the Constrained Development Potential forecast. While the northern portion of Half Moon Bay still does not meet the standard, the Delay Index does decrease from Buildout Conditions.

IDENTIFICATION OF RECOMMENDED ALTERNATIVE

Improvements included in the recommended alternative were selected from a list of potential improvements compiled from TAC and community-suggested improvements, proposed projects identified in other recent planning efforts, as well as improvements suggested by the DKS team to address identified deficiencies. The recommended alternative also reflects significant public input received on the previous Hybrid alternative at a workshop on April 15, 2015 and subsequently on the *Connect the Coastside* website. To address the needs for the Buildout projections, the projects are considered for implementation over the next 25 years to respond to planned growth in the study area.

Improvements are defined by the following categories:

- Roadway and intersections/access points
- Bicycle and Pedestrian facilities
- Transit and
- Parking

Projects in the recommended alternative that were also recommended in previous planning efforts by the County or City of Half Moon Bay are bolded. New projects identified and proposed by this study are not bolded. Roadway and intersection Improvements are presented by subarea, but other improvements are presented for the study area as a whole.

ROADWAY AND INTERSECTION IMPROVEMENTS

Midcoast

Within the Midcoast area, the only intersections that are operating worse than the LOS standard and have enough side street volume to meet a signal warrant are Highway 1 and California Avenue, which acts as an access point for residential areas on either side of Highway 1, and Highway 1 and Cypress Avenue, which is the main access point for Airport Road. Both of these intersections are located in Moss Beach.

Highway 1 and California Avenue

Given the complicated nature of the intersection with Weinke Way acting as a fifth leg and Carlos Street nearby, a roundabout would not work at this location without significant study and a large footprint. Signalization of the location would improve the LOS to an acceptable level. To signalize the intersection, access to Highway 1 from Weinke Way would have to be restricted and an alternative route to Highway 1 identified. To minimize the delay to vehicles traveling along Highway 1, the signal should be actuated to only trigger with left-turn demand.

Highway 1 and Cypress Avenue

Analysis of a roundabout at this location did not show any improvement to LOS. Signalization of the location will improve the LOS to an acceptable level. To minimize the delay to vehicles travelling along Highway 1, the signal should be actuated to only trigger with left-turn demand. A northbound acceleration lane is currently included in Phase 1 of the Midcoast crossings to reduce delay for left-turning vehicles on the eastbound approach of Cypress Avenue; however that would not fully address the deficiency expected at buildout based on the forecasted volume.

Signal coordination

Proposed signals at the cross streets of California and Cypress should be coordinated using GPS clocks to guarantee a minimal delay to traffic along Highway 1.

Safety and Circulation Projects

In addition to the roadway and intersection projects identified to address deficiencies as defined by performance standards, the following proposed projects have been identified to improve safety or circulation along the Midcoast area:

- **Addition of a left-turn bay and an acceleration lane at Gray Whale Cove parking lot[4]**
- **Addition of a median with northbound left-turn bay[5] at the Lighthouse in Montara (16th Street)**
- Signage to restrict left-turning movements at the following intersections in the Midcoast and Half Moon Bay, which operate below the LOS Standard but do not meet a signal warrant:
    - Highway 1 & 2nd Street (Montara)
    - Highway 1 & 9th Street (Montara)
    - Highway 1 & Carlos Street (Moss Beach)
- The implementation of traffic calming improvements such as speed display units and speed humps along Main Street in Montara and along Carlos Street in Moss Beach
- Stop signs added to the following unsigned intersections along Highway 1:
    - Highway 1 & 1st Street (Montara)
    - Highway 1 & Seacliff Court (Montara)
    - Highway 1 & 7th Street (Montara)
    - Highway 1 & 11th Street (Montara)
    - Highway 1 & 13th Street (Montara)
    - Highway 1 & 16th Street (Montara)

[5] As proposed in the highway 1 Safety and Mobility Study: Phase 2, November 2011

  - Highway 1 & Furtado Lane (El Granada)

- Defined curb and paved shoulder for the following segments along Highway 1 will provide a consistent cross section for vehicle and pedestrian safety based on areas of highest pedestrian and bicycle activity along Highway 1:
  - Montara Segment – 1st Street and 14th Street
  - Moss Beach Segment – Carlos Street to Etheldore Street (South)
  - El Granada Segment – Coral Reef Avenue to Medio Road

Unincorporated SR 92 East of Half Moon Bay

Within the unincorporated portion of SR 92 east of Half Moon Bay, the intersection if SR 92 and SR 35 (east) operates worse than the existing Midcoast LCP LOS standard and has enough side street volume to meet a signal warrant.

SR 92 and SR 35

The intersection of SR 92 and SR 35 has been identified as an intersection with a sufficient volume and sufficient area to benefit from the installation of a double lane roundabout.

Safety and Circulation Projects

In addition to the roadway and intersection projects identified to address deficiencies as defined by performance standards, the following proposed projects have been identified to improve safety or circulation along SR 92 east of Half Moon Bay:

- Passing/Climbing lanes on the eastbound portion of SR-92 between the Landfill Road and Pilarcitos Quarry Road to allow cars to pass the high volume of trucks on this roadway segment as well as provide a passing lane to go around right-turning cars.
- Left-turn lanes at the following major businesses along SR 92 in Half Moon Bay:
  - Berta's Farm
  - Lemos Farm
  - Half Moon Bay Nursery
- Additional "Trucks use right lane" signs along the two-lane eastbound portion of SR-92

Half Moon Bay

Within the City of Half Moon Bay, the following intersections are operating worse than the existing Midcoast LCP LOS standard and have enough side street volume to meet a signal warrant:

- Highway 1 and Spindrift Way
- Highway 1 and Kehoe Avenue
- Highway 1 and Grandview Boulevard

- **Highway 1 and Terrace Avenue[6] (Grand Boulevard repositioned to align with Terrrace Avenue)**
- Highway 1 and Filbert Street
- Highway 1 and Seymour Street
- **Highway 1 and Main Street (South)[5]**

Additionally, the signalized intersections of Ruisseau Francais Avenue and Poplar Street operate at LOS F during the midday weekend peak. The City of Half Moon Bay has already begun the planning and design process to combine and signalize the intersections of Highway 1 at Terrace Avenue and Grand Avenue as well as signalize the intersection of Highway 1 and Main Street (South). In addition, the City of Half Moon Bay is looking into the effect of signal coordination on congestion in downtown Half Moon Bay.

Highway 1 and Ruisseau Francais Avenue

The signalization of Highway 1 and Ruisseau Francais Avenue resulted in increased delays to traffic along Highway 1, especially during the weekend midday peak. The widening of the northbound and southbound approach to allow for two through lanes in each direction would improve the LOS enough to address the deficiency. The four lane section should be long enough to allow the vehicles to merge back to one lane safely and without affecting the capacity of the intersection.

Highway 1 and Spindrift Way

While the intersection of Highway 1 and Spindrift Way meets the signal warrant, the majority of turning movements at these locations are right turns and the roadway striping already provides an acceleration lane for left-turning vehicles. The addition of striping and a slight widening of the approach at Spindrift Way would allow for separation of right- and left-turning vehicles so that the warrant would no longer be met. The existing acceleration lane would continue to provide a safe refuge for vehicles turning left onto Highway 1.

Highway 1 and Kehoe Avenue

Signalization of the intersection of Highway 1 and Kehoe Avenue would reduce the average delay experienced at the intersection to LOS A provided a two lane southbound approach to the intersection along with the planned two lane northbound approach already programmed. Similar to the proposed modifications at the intersection of Highway 1 and Ruisseau Francois Avenue, the two lane southbound approach should be long enough to accommodate any queuing caused by the intersection.

Highway 1 and Grandview Boulevard

While the intersection of Highway 1 and Grandview Boulevard meets the signal warrant, the majority of turning movements at these locations are right turns and the roadway striping already provides an acceleration lane for left-turning vehicles. The addition of striping and a slight widening of the approach at Grandview Boulevard would allow for separation of right- and left-turning vehicles so that the warrant would no longer be met. The existing acceleration lane would continue to provide a safe refuge for vehicles turning left onto Highway 1.

Highway 1 and Filbert Street

[6] Currently programmed by the City of Half Moon Bay and under Caltrans review

The intersection of Highway 1 and Filbert Avenue has been identified as an intersection with enough volume from both the west and east approaches on Filbert Street to meets the signal warrant. Signage to allow only right-turning movements would encourage drivers on Filbert Street to make a short diversion to the signal at Poplar Street in order to turn left on or cross Highway 1. The remaining right-turning volume would not meet a signal warrant.

Highway 1 and Seymour Street

The intersection of Highway 1 and Seymour Street has been identified as an intersection with enough volume from the east approach on Seymour Street to meet the signal warrant. Signage to allow only right-turning movements would encourage drivers on Seymour Street to make a short diversion to the either the signal at Poplar Street or proposed signal at Main Street (South) in order to turn left on or cross Highway 1. The remaining right-turning volume would not meet a signal warrant.

Highway 1 and Poplar Street

The signalization of Highway 1 and Poplar Street resulted in increased delays to traffic along Highway 1, especially during the weekend midday peak. The widening of the northbound and southbound approach to allow for two through lanes in each direction would improve the LOS enough to address the deficiency. Based on the length of road needed to allow the vehicles to merge back to one lane safely and without affecting the capacity of the intersection, the recommendation is to provide two through lanes in each direction for the entire length of Highway 1 between Kelly Avenue and Main Street (South).

Safety and Circulation Projects

In addition to the roadway and intersection projects identified to address deficiencies as defined by performance standards, the following proposed projects have been identified to improve safety or circulation in Half Moon Bay:

- Stop signs added to the unsigned intersections at Highway 1 & Young Avenue (East Side) (Half Moon Bay)
- Defined curb and paved shoulder along Highway 1 between Frenchman's Creek Road to Redondo Beach Road will provide a consistent cross section for vehicle and pedestrian safety based on areas of highest pedestrian and bicycle activity
- Consolidation of access to Highway 1 at the following locations:
    - Rocket Farms driveways between Mirada Road and Young Avenue
    - **Grand Avenue and Terrace Avenue** (Already included in Buildout analysis as a planned improvement by the City of Half Moon Bay)

BICYCLE AND PEDESTRIAN FACILITY IMPROVEMENTS

To provide a safer and more connected pedestrian and bicycle environment to the Midcoast area and Half Moon Bay the following measures are recommended. Proposed bicycle facilities

will be composed of Class I, Class II and Class III facilities. Pedestrian facilities will include off street paths, additional crossings, and intersection improvements. Both bicycle and pedestrian safety facilities will also be improved at intersections. While there was interest shown in reducing the speed limit, the recent Caltrans speed survey[7] shows no justification for a lowered speed limit.

Class 1 Multiuse Paths

Currently, a Class I multiuse path runs parallel to a few sections of Highway 1. It is recommended that this trail be extended without any gaps from 2nd St in Montara to Miramontes Point Rd at the southern end of Half Moon Bay. The proposed Class I "parallel trail" alignment would include the following segments to become continuous:

- 6.2 mile segment along Highway 1 between 2nd Street in Montara and the existing facility at the Pillar Point RV Park
- 1.1 mile segment along Highway 1 between Coronado Street and the existing bicycle facilities at Roosevelt Boulevard in Half Moon Bay
- 0.3 mile segment along Highway 1 between SR 92, where the current path turns adjacent to Oak Avenue Park to go under Highway 1 and cross Pilarcitos Creek to join up with SR 92, and Kelly Avenue
- 1.1 mile segment along Highway 1 between the existing bicycle facilities just south of Wavecrest Road and the southern bus stop just south of the Miramontes Point Road at the southern border of Half Moon Bay

Where driveway and cross streets cross the Class 1 path there should be adequate paint to alert drivers that they are entering a space designated for bicycles and pedestrians.

In addition to the Class I path, a Coastal Trail adjacent to the coastline should be extended along the entire study area. The proposed Coastal trail alignment is part of a proposed project separate from this plan and would include the following segments to become continuous:

- 1.82 mile segment along Highway 1 between the Devil's Slide Trail and 2nd Street in Montara
- Surfacing of an existing 1.69 mile dirt path along the coast in south Half Moon Bay.

These two separated paths will provide pedestrians and cyclist (commuters, tourists, and local users) with a safe separated direct connection to communities and locales along Highway 1.

Class II and Class III Bike Lanes

It is also recommended that a Class II bike lane be added to both sides of Highway 1 where the right-of-way and environmental analysis allows, potentially by slightly narrowing Highway 1 lanes in some locations where needed, based on the proposed bicycle environmental quality standard proposed for the Midcoast LCP. Currently, there is no Class II bike lane at any point along this segment of Highway 1. The proposed Class II bike lane would extend a distance of 12.3 miles from the southern border of Half Moon Bay (just south of Miramontes Point Rd, to the parking lot for North Peak Access Road, where the road cut makes any further road widening difficult. The purpose of the Class II bike lane is to separate commuting bicycle traffic

[7] Caltrans Engineering and Traffic Survey Report 4-SM-001-PM 34.60/37.12, December 10, 2014

from the recreational bicycle and pedestrian traffic that would use the parallel and coastal trail paths.

Future improvements should include the extension of the bike network to the north and south. These facilities will be part of the proposed North Coast Bikeway in the County's Comprehensive Bicycle and Pedestrian Plan (CBPP), connecting Daly City, Pacifica, and Half Moon Bay.

Additional Class II bike lanes are recommend along State Route 92 from Main Street in Half Moon Bay to SR-35[8], and Class III bicycle routes along Capistrano Road, which is currently being evaluated for Plan Princeton and was determined not to have room for Class II lanes.

Pedestrian Walkways

In addition to the bicycle improvements along roadway segments, unpaved pedestrian walkways are recommended along Highway 1 in Montara, Moss Beach, Miramar, and developed areas of Half Moon Bay that provide, at minimum, a six foot wide flat surface free of any impediments that could cause a hazard to pedestrians. (Hazards include any surface condition that could cause a pedestrian to trip or injure themselves.) These paths are needed on both sides of the highway and should be separated by a minimum of three feet from bicycle the edge of auto or bicycle travel lanes. This will provide much needed pedestrian access in the areas with the highest pedestrian demand.

Pedestrian Crossings

The lack of striped crossings throughout most of the Midcoast leads to pedestrians crossing Highway 1 at uncontrolled locations without any safety precautions. In order to also address the wishes of the community, the desired maximum distance between pedestrian crossings in areas with potential pedestrian demand would be increased to 0.5 miles. Striped pedestrian crossings with beacons to alert drivers along undeveloped portions of Highway 1 are proposed at the following locations:

- **Gray Whale Cove**
- Montara State Beach
- HMB Airport
- Quarry Road (along SR 92)
- Pilarcitos Creek Road (along SR 92)
- SR 35 (along SR 92)

Striped pedestrian crossings with beacons (except where noted) to alert drivers along developed portions of Highway 1 with potential for regular pedestrian demand are proposed at the following locations:

- **2nd Street (with pedestrian refuge south of second street and no flashing beacon)**
- **7th Street**

[8] There is discussion of a possible Class I path along this section, however it deserves its own study outside of this plan due to its cost and scope

- **Moss Beach Lighthouse (16th Street)**
- North Capistrano Road
- Surfer's Beach Parking area, near Pillar Point RV Park
- Between Magellan Avenue and Medio Avenue
- **Mirada Road**
- Purisima Way
- Redondo Beach Road

Striped pedestrian crossings are proposed as part of the proposed installation of signalized intersections and roundabouts at the following locations:

- **California Street**
- **Cypress Avenue**
- Kehoe Avenue
- **Terrace Avenue/Grand Boulevard**
- **Main Street (South)**

Traffic Signal Pedestrian Improvements

Many signalized intersections within the study area are not pedestrian friendly and should implement the following upgrades:

- Pedestrian count-down indicators on all signalized crosswalks
- Timing adjustments to be consistent with current MUTCD requirements assuming 3.5 feet per second as the walking speed of pedestrians
- Bicycle signal detection
- Pedestrian refuges on wide road crossings

Figure 3 - Existing and Future Coastal Trail and Parallel Trail Facilities

TRANSIT IMPROVEMENTS

The following transit projects are suggested to provide a safer and more connected environment to the Midcoast area and Half Moon Bay:

- More frequent weekend service for the existing SamTrans fixed routes 294 and 17 serving the study area.
- Implementation of the Coastside Beach Shuttle to reduce the parking load at beach lots with additional buses during special events.
- School bus service for Cabrillo Unified School District including a facility for storing the vehicles and maintenance.

The following transit projects are suggested to address transit deficiencies:

- Installation of benches at the following bus stop locations:
  - Highway 1 & SR-92 (average of 16 daily boardings)
  - Strawflower Shopping Center (average of 29 daily boardings)
  - Kelly Avenue & Church Street (average of 24 daily boardings)
  - Main Street & Lewis Foster Drive (average of 21 daily boardings)

PARKING IMPROVEMENTS

The following transit projects are suggested to address transit deficiencies:

- Formalized parallel parking for Montara State Beach, with a physical separation from Highway 1
- Diagonal parking for El Granada separated from Highway 1 (this is part of a proposed Highway 1 realignment, however it is suggested that given the parking need, that it be constructed independent of the approval of the larger project in El Granada)
- Implementation of the Coastside Beach Shuttle to reduce the parking load at beach lots, including the following:
  - Roosevelt Beach
  - Half Moon Bay State Beach parking lot at Kelly Avenue
- Implementation of pricing strategies to bring the deficient lots to desirable occupancy

The following parking projects are suggested to provide a safer environment to the Midcoast area and Half Moon Bay:

- Diagonal parking for Moss Beach along Carlos Street (this is part of a larger improvement, however it is suggested that given the parking need, that it be constructed independent of the approval of the larger project in Moss Beach)
- Improved wayfinding signage
- Paving and striping at the upper Gray Whale Cove parking lot

LAND-USE POLICIES

The following land-use policies are recommended to reduce transportation impacts of future development. These policies and criteria are described in further detail in **Appendix A**.

Mandatory Lot Merger Program

A lot merger program would allow contiguous parcels with the same ownership to be merged as long as at least one of the lots is underdeveloped and less than the minimum parcel size requirement. For undeveloped lots, the program would operate as a voluntary merger program for 21 months after adoption, and then become mandatory, with a process for noticing, hearing, determination, and appeals. During the voluntary period, any property owner who requests a merger would receive a non-expiring voucher that could be used for one of the following: (a) up to 250 square feet bonus floor area; (b) up to $1,500 (new unit) or $300 (existing unit) or a 5 percent reduction in building permit fees, whichever is greater; or an allowance that one parking space may be uncovered. For an affordable housing unit, additional incentives would be provided. Implementation of a mandatory lot merger program, generally following the policy adopted by San Mateo County in 2006, would reduce the number of undeveloped parcels along the Midcoast. The effect of this reduction in lots however was already accounted for in the Buildout forecast, because lot mergers were assumed to take place in the Midcoast LCP.

Mandatory Lot Retirement Program

A lot retirement program could be designed to provide flexibility to project applicants by allowing them to either:

- Directly purchase existing lots from willing sellers, and extinguish development rights;
- Donate lots to a land trust or similar organization that would do the same; or
- Pay an in-lieu fee to the City or County to acquire and retire development rights from willing sellers at a 1:1 ratio. For the in-lieu fee to function properly, an appropriate price per development credit would need to be established, periodically reviewed and updated.

Acquisition of lots for lot retirement would be through donation or purchase. No property owner would be forced to sell their land for the purposes of this program. A lot retirement program requiring one-to-one retirement of development rights on existing lots in exchange for new lots would have the effect of reducing development potential and lessen the effect of new development on the transportation network.

Traffic Fee Mitigation Program

A transportation fee mitigation program would collect fees for new residential and non-residential development on a per-housing-unit basis for residential and per-square-foot basis for non-residential development. The rates would be based on a specified list of projects needed to mitigate the impacts of the growth, the total estimated capital cost of those projects and the

amount of new development expected. Although a Transportation Impact Mitigation Fee Program is being considered as a method for funding transportation improvements needed to accommodate growth rather than as a growth management strategy, the fee program could have some impact on the total amount of new development that occurs, if they raise the cost of development.

EVALUATION OF RECOMMENDED ALTERNATIVE

The following recommended alternative was created to address deficiencies in the Buildout condition based on the standards proposed for the Midcoast LCP and general safety and circulation concerns. The improvements included in the recommended alternative were based on cost; expected impact to existing infrastructure, the environment and the surrounding communities; and the overall effect on residents of the Midcoast Communities and City of Half Moon Bay. The list of improvements proposed in this document does not represent a comprehensive list of all projects that have been programmed or planned within the study area and does not prohibit other projects from being implemented, except where directly contradicted by a proposed improvement. Additional projects that have been analyzed for potential implementation can be found in the following studies:

- Highway 1 Safety and Mobility Improvement Study Phase 1, 2010
- Highway 1 Safety and Mobility Improvement Study Phase 2, 2011
- Half Moon Bay Circulation Element Update, 2013
- Plan Princeton, ongoing
- Half Moon Bay General Plan Update, ongoing
- Half Moon Bay Local Coastal Program Update, ongoing

ROADWAY AND INTERSECTION IMPROVEMENTS

Ability to Address Deficiencies

Intersection and Roadway Standards

As shown in Table 3, the proposed improvements will address the LOS deficiencies for the following intersections:

- Signalization at Highway 1 and California Avenue in Moss Beach (LOS F to LOS A/B)
- Signalization at Highway 1 and Cypress Avenue in Moss Beach (LOS F to LOS B/C)
- Roadway widening at Highway 1 and Ruisseau Francois Avenue in Half Moon Bay (LOS C/E/F to LOS A/A/B)
- Striping at Highway 1 and Spindrift Way in Half Moon Bay will no longer meet a signal warrant
- Roundabout at Highway 1 and Kehoe Avenue in Half Moon Bay (LOS F to LOS B/C)
- Striping at Highway 1 and Grandview Boulevard in Half Moon Bay will no longer meet a signal warrant

- Signalization and consolidation at Highway 1 and Grand Boulevard/Terrace Avenue in Half Moon Bay (Already included in Buildout analysis as an intersection planned to be signalized by the City of Half Moon Bay) (LOS F to LOS B)[4]
- Signage at Highway 1 and Filbert Street in Half Moon Bay (LOS F to LOS C/D)
- Roadway widening at Highway 1 and Poplar Street in Half Moon Bay (LOS D/F to LOS B/C)
- Signage at Highway 1 and Seymour Street in Half Moon Bay (LOS F to LOS C/E)
- Signalization at Highway 1 and Main Street (South) in Half Moon Bay (Already included in Buildout analysis as an intersection planned to be signalized by the City of Half Moon Bay) (LOS E to LOS A)
- Roundabout at SR 92 and SR 35 east of Half Moon Bay (Midday weekend peak remains LOS F, however AM and PM peak improve from LOS F to LOS E)

Table 3 - Effect of Proposed Improvements on Intersection LOS under Buildout Conditions

Street Names	Midcoast LCP LOS Standard[1]	Existing Control Type[2]	Proposed Improvement	AM Peak Hour LOS		PM Peak Hour LOS		Midday Peak Hour LOS	
				No Project	Project	No Project	Project	No Project	Project
Hwy 1 / California Avenue	D	TWSC	Add signal/block Weinke Way	**F**	A	**F**	A	**F**	B
Hwy 1 / Cypress Avenue	D	TWSC	Add signal	**F**	B	**F**	C	**F**	B
Hwy 1 / Ruisseau Francais Avenue	E	Signalized	Highway 1 Widening	E	A	C	A	**F**	B
Hwy 1 / Spindrift Way	E	TWSC	Striped split approach	**F**	**F**[3]	**F**	**F**[3]	**F**	**F**[3]
Hwy 1 / Kehoe Avenue	E	TWSC	Convert to roundabout	**F**	C	**F**	B	**F**	C
Hwy 1 / Grandview Boulevard	E	TWSC	Striped split approach	**F**	**F**[3]	**F**	**F**[3]	**F**	**F**[3]
Hwy 1 / Terrace Ave/Grand Ave	E	TWSC	Add signal/ consolidate Terrace and Grand	B	B	A	A	A	A
Hwy 1 / Filbert Street	E	TWSC	Minor Street right-turn only	**F**	C	**F**	D	**F**	D
Hwy 1 / Poplar Street	E	Signalized	Highway 1 Widening	D	C	D	B	**F**	C
Hwy 1 / Seymour Street	E	TWSC	Minor Street right-turn only	**F**	C	**F**	C	**F**	E
Hwy 1 / Main Street (South)[4]	E	TWSC	Add signal	-	A	-	A	-	A

Street Names	Midcoast LCP LOS Standard[1]	Existing Control Type[2]	Proposed Improvement	AM Peak Hour LOS		PM Peak Hour LOS		Midday Peak Hour LOS	
				No Project	Project	No Project	Project	No Project	Project
SR 92 / SR 35	E	Signalized	Convert to roundabout	D	C	**F**	**E**	**F**	**F**

[1] Standard is given for an individual approach (stop controlled)
[2] TWSC – two-way stop controlled
[3] Despite remaining LOS F, the intersection is no longer considered deficient because the split flow
[4] Signal already programmed, so there is no "No Project" condition

With the addition of the proposed Class II bicycle lane along Highway 1 along the Midcoast, the Delay Index no longer is considered deficient. The City of Half Moon Bay is currently looking into signal coordination to address the congestion caused by the signals north of SR 92. While the segment of Highway 1 is considered deficient based on the Delay Index standard proposed by this study, the City of Half Moon Bay is not bound by the standards or improvements proposed by this study.

The addition of passing/climbing lanes on the eastbound portion of SR-92 between Landfill Road and Pilarcitos Quarry Road will allow cars to pass the high volume of trucks on this roadway segment and provide a passing lane to go around right-turning cars. The cost estimate does not however include any right-of-way acquisition or any large scale earthwork that may be identified with a full design.

Safety and Circulation

- Addition of a left-turn bay and an acceleration lane at Gray Whale Cove parking lot will improve circulation and prevent turning vehicles from restricting flow along Highway 1 in a cost-effective way
- Addition of a median with northbound left-turn bay at 16th Street will improve circulation in Montara and provide a crossing refuge for pedestrians
- The implementation of traffic calming improvements such as speed display units and speed humps along Main Street in Montara and along Carlos Street in Moss Beach is a cost-effective way to slow traffic and improve safety for bicyclists and pedestrians
- Stop signs added to unsigned intersections along Highway 1 and a defined curb and paved shoulder for the following segments along Highway 1 will provide a consistent cross section for vehicle and pedestrian safety based on areas of highest pedestrian and bicycle activity along Highway 1:
    - Montara Segment – 1st Street and 14th Street
    - Moss Beach Segment – Carlos Street to Etheldore Street (South)
    - El Granada Segment – Coral Reef Avenue to Medio Road
    - Half Moon Bay Segment – Frenchman's Creek Road to Redondo Beach Road
- Consolidation of access to Highway 1 at the following locations will reduce the number of vehicle conflicts along Highway 1 and improve circulation:
    - Rocket Farms driveways between Mirada Road and Young Avenue
    - Grand Avenue and Terrace Avenue (Already considered a planned improvement by the City of Half Moon Bay)

- Left-turn lanes at major businesses along SR 92 in Half Moon Bay would be a cost-effective solution to address a circulation issue commonly identified by the community. The main impediment would be acquisition of the required right-of-way at the desired locations. The following locations are suggested:
    - Berta's Farm
    - Lemos Farm
    - Half Moon Bay Nursery

Feasibility Concerns

There were no serious feasibility concerns identified for any of the proposed roadway and intersection improvements, although it is possible that potential environmental impacts may be identified in the environmental review and these may require mitigation. The following design considerations were identified:

- It is recommended access to Wienke Way be blocked at the intersection of Highway 1 and California Avenue if the intersection is signalized. A fifth leg would complicate signalization of the intersection and Wienke Way currently has potential line-of-sight problems for vehicles trying to turn left onto Highway 1. Access to Highway 1 for residents in that area would still be provided at Vallemar Street and the church located at the corner of Weinke Way and California Avenue has an access point directly on California Avenue.
- Adequate vehicle storage length for the proposed southbound left-turn bay at the Gray Whale parking lot should be included for the expected demand in order to minimize the potential for queue spillback.
- Given the topography of the land adjacent to Highway 1, some locations may prove expensive to provide paved shoulders and curb.
- Widening the roadway at Ruisseau Francois Avenue will require 600 feet of the four-lane section in both directions to accommodate the queue and allow traffic leaving the intersection to safely merge without impacting the intersection. South of Ruisseau Francois, the extra southbound lane can transition into a right-turn lane for Venice Avenue, with signage to alert drivers that through traffic should stay left. The existing multi-use path may need to be moved or combined with the proposed Class II bicycle lane through this portion of Highway 1.
- Any left-turn pockets for businesses along SR-92 should have adequate storage lengths to minimize their impact on traffic operation along SR-92.

A listing of feasibility and design considerations is included in **Appendix B**.

Cost Estimates

A summary of the cost of the recommended alternative roadway and intersection improvements is included in **Table 4**. The cost estimate calculations are included in **Appendix C**.

Table 4 - Cost of Recommended Roadway and Intersection Improvements

Project #	Improvement	Cost Estimate
R1	Gray Whale Cove Turn and Acceleration Lanes	$ 440,000
R2	SR-1 Side-Street Stop Signs	$ 18,000
R3A	SR-1 Paved Shoulder and Curb Phase A (Central)	$ 2,302,000
R3B	SR-1 Paved Shoulder and Curb Phase B (Intermediate)	$ 2,841,000
R3C	SR-1 Paved Shoulder and Curb Phase C (Periphery)	$ 820,000
R4	California Avenue Signal	$ 767,000
R5	Cypress Avenue Signal	$ 640,000
R6	Main Street (South) Signal	$ 530,000
R7	Montara Lighthouse Median and Left Turn Bay	$ 170,000
R8	Rocket Farms Access Consolidation	$ 2,926,000
R9	Widening of Highway 1 at Ruisseau Francois Avenue	$ 2,587,000
R10	Terrace Avenue/Grand Boulevard Access Consolidation and Signalization	$ 1,270,000
R11	Widening and striping of approach at Spindrift Way	$ 79,000
R12	Kehoe Avenue Signal	$ 640,000
R13	Widening and striping of approach at Grandview Boulevard	$ 220,000
R14	Signage to allow only right turns from Filbert Street and Seymour Street	$ 2,000
R15	Widening of Highway 1 to four lanes between Kelly Avenue and Main Street (South)	$ 5,732,000
R16	SR-92/SR-35 Roundabout	$ 1,177,000
R17	Main Street Traffic Calming	$ 522,000
R18	Carlos Street Traffic Calming	$ 306,000
R19	SR-92 Left Turn Lanes	$ 418,000
R20	SR-92 Passing/Climbing Lanes[9]	$ 1,519,000
R21	"Trucks Keep Right" signage on SR 92	$ 3,000
	Roadway and Intersection Total Cost	$ 25,929,000

[9] The cost estimate does not include any right-of-way acquisition or any large scale earthwork which may be identified with a full design.

BICYCLE AND PEDESTRIAN FACILITY IMPROVEMENTS

Ability to Address Deficiencies

Bicycle and Pedestrian Standards

The "Parallel Trail" adjacent to Highway 1 and the Coastal Trail adjacent to the coastline (including Airport Street) provides a safe and cost-effective alternative route for pedestrians and recreational bicycles away from the heavier traffic on Highway 1. This addition will raise the Bicycle Environmental Quality Index (BEQI) score on segments without the Class I path from a score of 21 to a score of 49 – 55, depending on the density of driveways and cross streets crossing the segment.

The addition of a Class II Bike path on Highway 1, which would provide bicycle access on both sides of the street (preventing the need to cross), will bring the BEQI score to the minimum recommended score of 61. In addition to meeting the bicycle standard, the addition of a Class II bicycle lane along Highway 1 will meet the multimodal criteria for a higher Delay Index standard. While the Delay Index under Buildout Conditions would still not meet the revised multimodal standard, under the Constrained Development Potential forecast, the standard would be met for the segment between 1st Street in Montara and Etheldore Street in Moss Beach as shown in **Table 2**. The Delay Index standard would also be met for traffic travelling the entire study segment.

Figure 4 provides the location of proposed pedestrian crossings. The proposed improvements reduce the maximum distance between safe pedestrian crossing locations to the revised standard of a maximum of ½ mile between pedestrian crossings in areas with the potential for pedestrian activity, with the exception of the segment between Main Street (South) and Redondo Beach Road which has a spacing of 0.63 miles. Based on the land use along this segment and discussions with City of Half Moon Bay staff, it was determined that this location did have significant potential for pedestrian travel to warrant an additional pedestrian crossing. The density standard and locations of proposed pedestrian crossings was decided based on balancing the needs of providing locations for pedestrians to cross Highway 1 with a desire not to over delay the progress of traffic along Highway 1. As the area continues to develop, the standards may incentivize the implementation of additional crossing locations to mitigate increasing pedestrian demand.

Currently none of the intersections meet the minimum recommended PEQI score. The following proposed improvements to existing signals will improve the PEQI score.

- Pedestrian count-down indicators on all signalized crosswalks
- Timing adjustments to be consistent with current MUTCD requirements assuming 3.5 feet per second as the walking speed of pedestrians
- Bicycle signal detection
- Pedestrian refuges on wide road crossings

Along Highway 1 there are minimal pedestrian facilities, resulting in a low PEQI score. The proposed ADA compliant walking paths in the following locations would provide a more continuous walking path for pedestrians:

- Along Highway 1 in Montara, Moss Beach, Miramar, and developed areas of Half Moon Bay
- Along Coronado Street and Avenue Alhambra in El Granada

These locations were selected due to the potential for pedestrian traffic. By providing a flat obstruction free path that is at least 6 feet wide and has pedestrian scale lighting (not street lighting) the recommended PEQI score would be met. A full listing of BEQI and PEQI scores and recommended improvements needed to meet the standards is included in **Appendix D**.

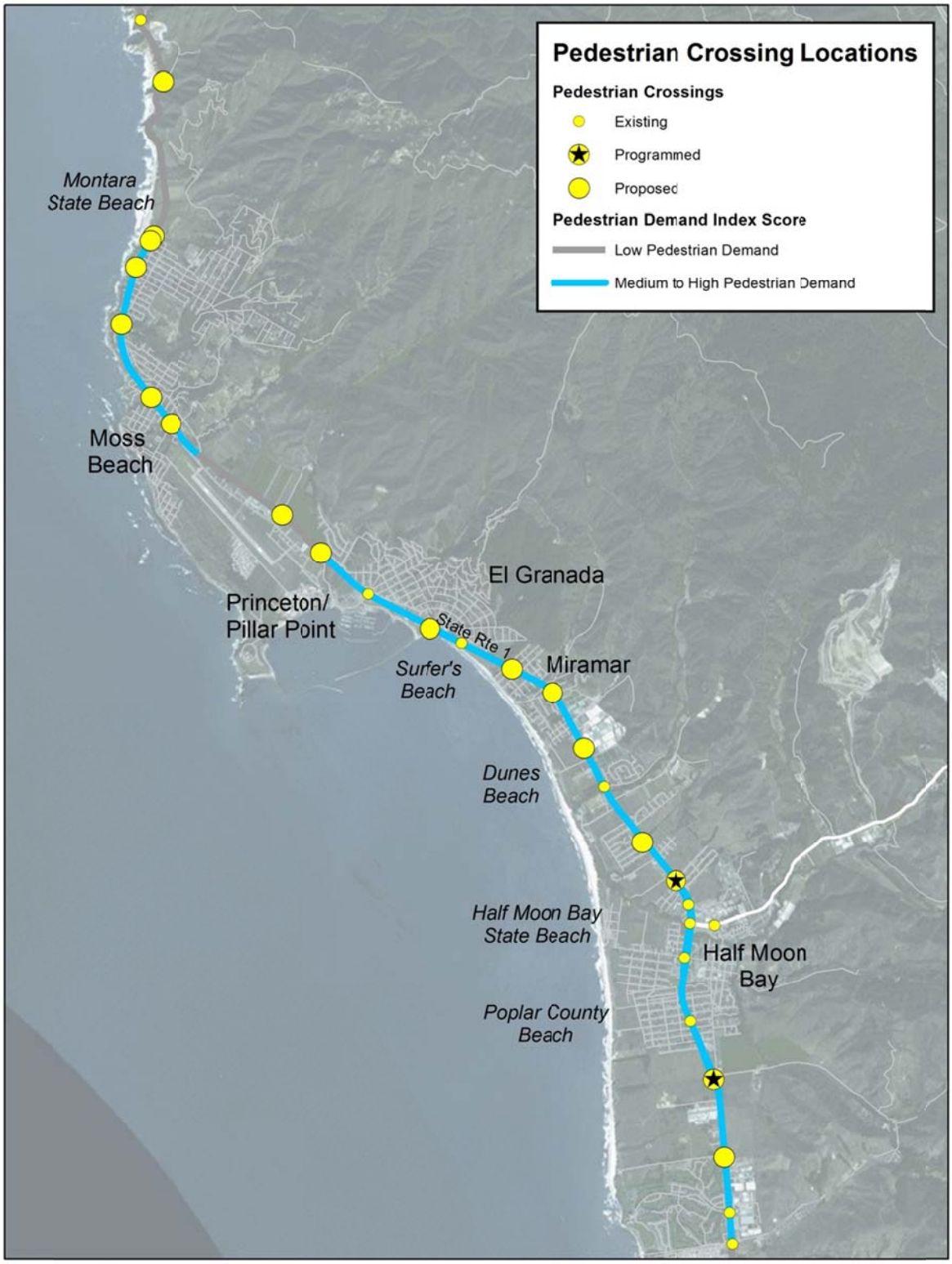

Figure 4 - Proposed Pedestrian Crossing Locations

Safety and Circulation

The following improvements were identified as solutions to provide a safer and more connected environment to the Midcoast area and Half Moon Bay, but they carried a larger price tag. They are suggested if the funding is available.

- A Class II bicycle lane along SR-92 would greatly improve connectivity for bicyclists between San Mateo and Half Moon Bay, however the large cost would make it necessary to perform a demand study to determine if the potential volume of bicyclists who would use the route would make it worth the cost.
- A Class II bike lane along Airport Street would provide another alternate route for bicyclists, however given the cost and the proposed path and lanes along Highway 1 (which have greater priority) we recommend a demand study to determine if the potential volume of bicyclists deem a need for an additional bicycle route.

Feasibility and Design Concerns

There were no serious feasibility concerns identified for any of the proposed pedestrian and bicycle facility improvements, although it is possible that potential environmental impacts may be identified in the environmental review and these may require mitigation. The following design considerations were identified:

- The beach access crosswalk at the Gray Whale Cove parking lot should be placed at a location that would accommodate the southbound storage lane.
- The Parallel Trail would be expected to have an uneven profile and may carry a high engineering cost. Additionally it may encumber significant environmental impacts that could require mitigation.
- Lane width should be narrowed along the proposed Class II bike lanes on Capistrano Road and Airport Street in order to enhance the traffic calming effect.
- While there is a consistent shoulder along Highway 1 for the majority of the study area that could be easily converted to a Class II bicycle lane, intersections with heavy right turning volumes would need to be restriped to allow for a floating bicycle lane to minimize car/bicycle interactions.

A listing of feasibility and design considerations is included in **Appendix B**.

Cost Estimates

Cost estimates for proposed bicycle and pedestrian improvements have been calculated based on standard unit costs and are listed in **Table 5**. Cost estimates include contract items as well as mobilization, construction engineering, designs, permits, and contingency. Calculation of costs is included in **Appendix C**.

Table 5 - Cost of Recommended Bicycle and Pedestrian Improvements

Project #	Project Name	Cost
B1	Striped Pedestrian Crossing with Beacons	$ 2,250,000
B2A	Hwy 1 walkway (Phase A)	$ 1,008,000
B2B	Hwy 1 walkway (Phase B)	$ 1,213,000
B2C	Hwy 1 walkway (Phase C)	$ 1,059,000
B3	Coronado Street and Ave Alhambra walkway	$ 749,000
B4	Parallel Trail adjacent to Highway 1 for the entire study area	$ 11,037,000
B5	Coastal Trail throughout the entire study area	$ 5,251,000
B6	Traffic Signal Updates	$ 1,624,000
B7	Capistrano Road Bicycle Facilities	$ 866,000
B8	Airport Street Class III Bike Lanes	$ 239,000
B9	SR-92 Bike Lanes	$ 20,959,000
B10	Hwy 1 Class II Bicycle Lane	$ 2,724,000
	Bicycle and Pedestrian Total Cost	**$ 48,979,000**

TRANSIT IMPROVEMENTS

The majority of the transit improvements will depend on discussions and negotiations with SamTrans or private bus companies as well as required acquisition and ongoing costs. A more comprehensive recommendation will require a demand study to determine need and want for the variety of services listed here.

Ability to Address Deficiencies

Transit Standards

While only the bus stop at Strawflower Shopping Center meets the 25 daily boarding threshold of the standard, the following bus stops represent locations that have a future level of boardings of 25 or more if better transit service is provided:

- Highway 1 & SR-92 (average of 16 daily boardings)
- Strawflower Shopping Center (average of 29 daily boardings)
- Kelly Avenue & Church Street (average of 24 daily boardings)
- Main Street & Lewis Foster Drive (average of 21 daily boardings)

Neither the SamTrans Route 294 nor Route 17 is running at 85% utilization and therefore there is no deficiency based on transit utilization.

Safety and Circulation

One of the main concerns regarding transit raised by project stakeholders is that demand for transit is not high because of the current lack of transit services. The following improvements address the perceived deficiency in transit service.

- More frequent weekend service for the existing SamTrans fixed routes serving the study area.
- The City of Half Moon Bay has submitted a grant application for a Coastside Beach Access Shuttle that would coordinate with SamTrans Route 17 and Route 294 to bring users to over-capacity parking lots. This shuttle could be modified to support a park-and-ride lot (One potential lot could be Half Moon Bay High School).
- School bus service for Cabrillo Unified School District including a facility for storing the vehicles and maintenance.

Feasibility and Design Concerns

There were no feasibility or design concerns identified for any of the proposed transit improvements.

A listing of feasibility and design considerations is included in **Appendix B**.

Cost Estimate

Cost estimates for proposed transit improvements have been calculated based on standard unit costs and are listed in **Table 6**. Cost estimates include contract items as well as mobilization, construction engineering, designs, permits, and contingency. This cost estimate does not include the cost of school bus service for Cabrillo Unified School District. Calculation of costs is included in **Appendix C**.

Table 6 - Cost of Recommended Transit Improvements

#	Improvement	Cost Estimate
T1	Bus Stop Amenities	$ 3,000
T2	Increased Weekend Samtrans service (annual operating)	$ 525,000

PARKING IMPROVEMENTS

Ability to Address Deficiencies

The lack of capacity for the large amount of weekend recreational parking demand results in a spillover of demand into community parking. There is a need for additional parking in the Midcoast and Half Moon Bay.

Parking Standards

To address the high demand of parking, the following improvements are proposed to mitigate a lack of supply at parking lots with over 85% utilization during peak recreational times:

- Formalized parallel parking for Montara State Beach, with a physical separation from Highway 1
- Diagonal parking for El Granada separated from Highway 1 (this is part of a proposed highway 1 realignment, however it is suggested that given the parking need, that it be constructed independent of the approval of the larger project in El Granada)
- Implementation of the Coastside Beach Shuttle to reduce the parking load at beach lots including the following:
    - Roosevelt Beach
    - Half Moon Bay State Beach parking lot at Kelly Avenue
- Implementation of pricing strategies to bring the deficient lots to desirable occupancy

Safety and Circulation

- Diagonal parking for Moss Beach along Carlos Street (this is part of a larger improvement, however it is suggested that given the parking need, that it be constructed independent of the approval of the larger project in Moss Beach)
- Improved wayfinding signage
- Paving and striping at the upper Gray Whale Cove parking lot

Feasibility and Design Concerns

There were no serious feasibility concerns identified for any of the proposed parking improvements, although it is possible that potential environmental impacts may be identified in the environmental review and these may require mitigation. The following design considerations were identified:

- The proposed parking lot for Montara State Beach should include a left-turn bay for northbound traffic.

A listing of feasibility and design considerations is included in **Appendix B**.

Cost Estimate

Cost estimates for proposed bicycle and pedestrian improvements have been calculated based on standard unit costs and are listed in **Table 7**. Cost estimates include contract items as well as mobilization, construction engineering, designs, permits, and contingency. Calculation of costs is included in **Appendix C**.

Table 7 - Cost of Recommended Parking Improvements

Project #	Project Name	Cost
P1	Montara State Beach Parking Lot Improvements	$ 557,000
P2	Upper Gray Whale Cove Parking Lot Improvements	$ 1,052,000
P3	Wayfinding signage	$ 303,000
P4	Coastside Beach Shuttle (annual cost)	$ 70,000
P5	Carlos Street On-Street Parking	$ 34,000
P6	El Granada Diagonal Parking	$ 54,000
	Parking Improvement Capital Cost	**$ 2,000,000**
	Parking Improvement Operating Cost (annual)	**$ 70,000**

LAND USE POLICIES

Lot Merger Program

Spatial analysis determined that the proposed lot merger program could reduce development potential in the unincorporated portion of the Study Area by an estimated 216 lots. The majority of development potential reduction would occur in residential districts, reducing the number of vacant substandard lots by 40 percent. Most of the lot mergers (165 lots) would occur in residential districts, with a smaller number (51 lots) in the Resource Management (RM-CZ) district. The effect of this reduction in lots is already assumed in the Buildout Condition and the Constrained Development Potential Forecast.

Lot Retirement Program

Under the potential lot retirement program, development potential could be reduced in the unincorporated portion of the Study Area by an estimated 148 units (each retired lot in non-residential districts is assumed to equal one unit). In the unincorporated area, these lots are located in the Resource Management-Coastal Zone and Planned Agricultural districts; the analysis does not include lots in residential districts in order to prioritize infill development.

APPENDIX A – LAND USE POLICY OPTIONS REPORT

LAND USE POLICY OPTIONS

FOR THE COUNTY OF SAN MATEO MIDCOAST COMPREHENSIVE TRANSPORTATION MANAGEMENT PLAN

JANUARY 2016

PREPARED BY

DYETT & BHATIA
Urban and Regional Planners

with

DKS Associates
35 years
Celebrating

FOR **COUNTY OF SAN MATEO**

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1 Introduction

The San Mateo County Midcoast Local Coastal Program (LCP) Update required San Mateo County (County) to prepare a Comprehensive Transportation Management Plan (CTMP). This project is also known as "Connect the Coastside". The CTMP will develop and evaluate measures to mitigate the impact that growth in the region has had on the transportation system.

In this report, a set of potential land use policy concepts are outlined. These policy concepts are analyzed for their potential to manage development potential and thus lessen congestion and improve coastal access. The relationship between these policy concepts and other Coastal Act goals, including concentrating development, protecting natural resources, and reducing hazards, is also considered. One or more land use policy concepts may be included in the CTMP and implemented individually or in combination.

This analysis is limited to the unincorporated San Mateo County portion of the Study Area. Strategies presented here could ultimately be implemented by San Mateo County, the City of Half Moon Bay or both. However, the Connect the Coastside project is sponsored by the County and can only lead directly to County programs.

2 Background

2.1 Paper Subdivisions

The Study Area—including the Midcoast portion of unincorporated San Mateo County as well as the City of Half Moon Bay—contains several "paper subdivisions", mapped in the early part of the 20th Century, where development has yet to take place. These paper subdivisions are indicated on the two subarea maps (Figures 1 and 2) included in this report. There are 183 parcels in paper subdivisions in the unincorporated Midcoast area. However, just because these subdivisions and lots exist, it does not mean actual development will result on individual parcels as there are substantial challenges to development.

The recent *Witt* and *Abernethy* appellate court cases suggest that lots in pre-1929 paper subdivisions may be required to provide additional documentation in order to be considered legal lots. In 2010, San Mateo County's Planning and Building Department established Revised Criteria for Legalization of Parcels Included Within Historic Recorded Subdivisions. The Revised Criteria require that in order for lots within such historical subdivisions to get any discretionary planning permit, parcel legality must first be confirmed through the recording of a Certificate of Compliance (CoC). In addition to the information required by the County's Subdivision regulations, owners of lots in historical subdivisions must also provide a Chain of Title that traces the deed conveyance of the parcel as well as all contiguous parcels or lots around it, starting from when the subject subdivision was first recorded up through the present day. If the Chain of Title

shows that the parcel was conveyed separately from any of the lots around it prior to the County's first subdivision ordinance (effective July 20, 1945), then parcel will likely qualify for a CoC (Type A). If this cannot be shown, then a CoC (Type B) application is required. Because a CoC (Type B) is considered a "land division," a Coastal Development Permit (CDP) is required, and may be appealed to the Coastal Commission.

The land use policy concepts outlined in this report would only apply to lots whose legality could be established following San Mateo County's criteria (in the County). Two things should be noted here. First, some of the lots counted in the development potential analysis may not in fact be "legal" lots under the terms of the *Witt* and *Abernethy* decisions. Second, the development *reduction* potential of the policy concepts outlined here may also be overstated, because the analysis may count lots whose legality cannot be demonstrated.

2.2 Substandard Lots

The Study Area contains parcels that do not meet minimum lot size or lot width requirements established through zoning. The San Mateo County zoning code establishes conditions for development on substandard or non-conforming lots.

In County jurisdiction, lots that are close to meeting the minimum standards (in varying proportion depending on zoning district), may be developed without a use permit. Where the minimum parcel size is 5,000 square feet, non-conforming lots that are at least 3,500 square feet in area may be developed without a use permit. Where the minimum parcel size is greater than 5,000 square feet, a non-conforming parcel of 5,000 square feet or greater may be developed without a use permit. Similarly, in zoning districts that establish minimum lot width at 50 feet, non-conforming parcels that are at least 35 feet wide may still be developed without a use permit. Where required lot width is anything over 50 feet, a non-conforming parcel at least 50 feet wide may be developed without a use permit.

Otherwise, a use permit is required, and findings must be met by the Planning Commission. The proposed development must be proportioned to the size of the parcel on which it would be built; all opportunities to acquire contiguous land must have been infeasible; the proposed development must be as nearly in conformance as is reasonably possible; the proposed use must not result in significant adverse impact to coastal resources; and approval must not constitute a special privilege. The Commission may require conditions for approval (Section 6133, San Mateo County Zoning Ordinance).

3 Land Use Policy Concepts to Reduce Transportation Impacts of Future Development on the Midcoast

Two programs that could reduce development potential on the Midcoast are described in this chapter: a mandatory lot merger program and a lot retirement program. The estimated reduction in development is presented in Chapter 4. In addition, a traffic impact fee mitigation program is discussed here for its potential to reduce development.

3.1 Mandatory Lot Merger Program

BACKGROUND

The San Mateo County Zoning Code and Subdivision Ordinance both establish conditions under which contiguous parcels may be merged. Such mergers may be initiated by the County or, on a voluntary basis, by property owners. The 2013 Midcoast LCP's Policy 2.53, Transportation Management Plan, specifies that such a plan shall evaluate the feasibility of a mandatory lot merger program.

The San Mateo County Board of Supervisors adopted a policy in 2006 authorizing staff to initiate a mandatory lot merger program. As defined in Coastal Commission Report SMC-MAJ-1-07, Exhibit G, the program would establish a process for contiguous substandard parcels under the same ownership to be merged, in the R-1, R-3, and RM-CZ zoning districts on the Midcoast. The lot merger program would apply as follows:

- At least two contiguous parcels in the same ownership;
- At least one parcel is undeveloped;
- The area of at least one lot is less than 4,500 square feet in the R-1 or R-3 districts, and less than 5,000 square feet in the RM-CZ district.

Lots meeting these criteria would be merged to create a parcel or parcels that meet the minimum parcel size requirements in R-1 or R-3 districts, or with a goal to reach at least 5 acres in area in the RM-CZ district.

For undeveloped lots, the program would operate as a voluntary merger program for 21 months after adoption, and then become mandatory, with a process for noticing, hearing, determination, and appeals. During the voluntary period, any property owner who requests a merger would receive a non-expiring voucher that could be used for one of the following: (a) up to 250 square feet bonus floor area; (b) up to $1,500 (new unit) or $300 (existing unit) or a 5 percent reduction in building permit fees, whichever is greater; or an allowance that one parking space may be uncovered. For an affordable housing unit, additional incentives would be provided.

Once the program becomes mandatory, the program a "Notice of Intention to Determine Status" would be prepared, recorded, and mailed to affected property owners. This would be followed by a hearing opportunity; a merger determination; and an appeals opportunity.

For developed parcels, the lot merger program would be triggered by an application to construct, enlarge, or demolish existing structures, following the existing regulations in the Subdivision Ordinance. Building repair is not identified as an action that would trigger lot merger.

STRATEGY FOR CONSIDERATION FOR THE CTMP

For the CTMP, a program within San Mateo County is evaluated as described above. Lots meeting the criteria would be merged to create a parcel or parcels that meet the minimum parcel size requirements in the urban (R-1 or R-3) zoning districts, or at least (or as close as possible to) 5 acres in the resource management (RM-CZ) district.[1] Lots would still be merged even if the resulting lot would still not conform to standards, or reach the 5,000-square foot threshold in the RM-CZ district, because merging would reduce the level of non-conformance. Since this action has yet to be implemented by Staff, it would be appropriate for the Board to re-authorize the 2006 policy.

Lots subject to a potential lot merger program are shown in Figures 1 and 2 for the Unincorporated Midcoast (Urban), and Unincorporated Midcoast (Rural), subareas, respectively.

Implementation of a mandatory lot merger program, generally following the policy adopted by San Mateo County in 2006, would reduce the number of undeveloped parcels along the Midcoast. The effect of this reduction in lots is already accounted for in the estimate of development potential, because lot mergers were assumed to take place in the Midcoast LCP. The merging of contiguously-owned substandard lots is reinforced by LCP policy 1.21: Lot Consolidation which states, "according to the densities shown on the LCP Land Use Map, consolidate contiguous lots, held in the same ownership, in residential subdivisions in Seal Cove to minimize risks to life and property and in Miramar to protect coastal views and scenic coastal areas."

A lot merger program as described would also support LCP policy 1.18 to concentrate new development in urban areas and rural service centers, in that it would not apply in commercial zoning districts.

A mandatory lot merger program could be challenging to carry out in the context of the uncertain legal status of many of the substandard lots in the Midcoast study area.

CASE STUDIES OF LOT MERGER PROGRAMS

Lot merger programs in Cambria and San Luis Obispo County; Sonoma County; Ventura County; and the cities of Santa Barbara, Malibu and Oceanside were identified for this analysis.

[1] The RM-CZ district implements the open space and conservation objectives of the County's General Plan. Development review criteria focus on the preservation of environmental quality, use of environmentally sensitive site design, protection of water resources, protection of cultural resources, and avoidance of hazard exposure. Residential dwellings may be permitted based on a calculation of "density credits" detailed in the Zoning Ordinance.

All of these programs were conducted by coastal municipalities and include common requirements with regards to lot mergers. Parcels must be contiguous and under common ownership. In many cases, parcels must have been legally created. However, certain ordinances provide for the merging of one or more existing lots without legal standing. For example, in Ventura County, while merging legal lots is a ministerial process, merging non-legal lots is a discretionary process that can include conditions contained in a Conditional Certificate of Compliance. Notably, all these lot merger programs were voluntary with the exception of Malibu. Two programs are profiled below.

Cambria and San Luis Obispo County

Cambria is an unincorporated community located entirely within the coastal zone in San Luis Obispo County. As part of its Buildout Reduction Program (BRP), the Cambria Community Services District (CCSD) adopted a Voluntary Lot Merger Program in 2007 to reduce the number of buildable lots in Cambria with the goal of ensuring long-term demand for residential water connections can be met. Within the first two years, Cambria accomplished close to 90 percent of the BRP goal of reducing 394 lots by merging vacant lots with existing lots. A new goal of 592 merger lots was established in 2009. According to a report released by the Cambria Community Services District, by the end of 2010, 481 lots had been reduced by merger.

Prior to 2007, lot mergers had been structured by San Luis Obispo County's property boundary line adjustment process. However, this process offered little incentive to use lot mergers to reduce development rights. The primary disincentive was the time and monetary costs involved. Although the County took steps to streamline the process by providing a Voluntary Merger Package and a User's Guide to clarify lot merger benefits and required steps, lot mergers remained widely unused. Cambria only had about five mergers on an average annual basis at the time.

In response, since 2007, the CCSD provides a "one-stop" approach for merging lots through a contract with First American Title. First American Title handles all paperwork and County processing, and CCSD pays fees associated with the voluntary lot merger process. Merging a vacant parcel with a parcel that has a water allocation can be an opportunity for owners to expand their home on the vacant parcel, or build a guesthouse or a detached garage. Other benefits advertised by the CCSD include ensuring views and eliminating property tax bills. Due to the scarcity of water connections, lot merging can be particularly attractive for owners who own a vacant parcel adjacent to a CCSD Water Wait List parcel.

City of Malibu

The City of Malibu's Local Coastal Program (LCP) provides regulations for land divisions, including lot mergers. Malibu's lot merger program is twofold. The LCP contains provisions for voluntary lot mergers, as well as mergers initiated by the City.

Contiguous parcels under common ownership may be voluntarily merged if authorized or required pursuant to a coastal development permit; or if the City determines that the merger is not inconsistent with any LCP policy that protects Environmentally Sensitive Habitat Areas (ESHAs) or visual resources.

Mergers of contiguous parcels held by the same owner and initiated by the City are only authorized under certain conditions. At least one of the affected parcels must be undeveloped, developed only with accessory structures, or developed with a single structure that is also partially sited on a contiguous parcel. The existing lots must each have been legally created, as specified in the Subdivision Map Act, and a merger must conform to the procedural requirements of the Subdivision Map Act.

3.2 Mandatory Lot Retirement Program

A second policy concept is a lot retirement program. A lot retirement program requiring one-to-one retirement of development rights on existing lots in exchange for new lots would have the effect of reducing development potential and lessen the effect of new development on the transportation network.

RECENT COASTAL COMMISSION APPROVAL REQUIREMENTS

The Coastal Commission has recently required lot retirement at a one-to-one ratio (1:1) as a condition of approval for some proposed residential subdivisions in Half Moon Bay, to mitigate for impacts to the transportation system that and, as a result, public access to the coast.

- The Carnoustie project, approved in 2007, included the development of 32 single-family houses on an 8-acre site adjacent to Ocean Colony. As a condition of approval, the developer was required to retire 34 residential lots in the vicinity of the project site.
- Approval of the Pacific Ridge project, in 2008, included Special Condition 7, requiring the developer to pay a fee of $45,000 for each lot created, to be used by the City to acquire and retire development rights on existing legal lots. The value per lot was determined based on the City of Half Moon Bay's *Transfer of Development Credits* study, which estimated the value of a development credit at $32,500; the number, determined in 1999, was adjusted for inflation.
- The 320 Church Street subdivision for 10 single-family homes and two multifamily home lots, approved in 2014, also includes a 1:1 lot retirement condition. In this case, the developer may "either retire development rights in a pro rata fashion or purchase the lots and donate the lots after purchase to a public or private land management agency, such as a public land trust or similar organization that supports lot retirements in conjunction with the City or County."

Neither the City of Half Moon Bay nor San Mateo County has a program in place requiring lot retirement for new residential development. The Coastal Commission recommended such a program in the Midcoast LCP Update.

The Coastal Commission has found that 1:1 lot retirement is an appropriate way to mitigate the significant adverse impact on the public's ability to access public beaches and other visitor-serving

coastal resources resulting from new development on the Midcoast. The requirement is found to be "reasonably related" and "roughly proportional" to the impact it intends to offset.[2]

STRATEGY FOR CONSIDERATION FOR THE CTMP

San Mateo County could establish a standard program requiring 1:1 lot retirement as a condition for new residential subdivisions.

Program Structure

A lot retirement program could be designed to provide flexibility to project applicants by allowing them to either:

- Directly purchase existing lots from willing sellers, and extinguish development rights;
- Donate lots to a land trust or similar organization that would do the same; or
- Pay an in-lieu fee to the City or County to acquire and retire development rights from willing sellers at a 1:1 ratio. For the in-lieu fee to function properly, an appropriate price per development credit would need to be established, periodically reviewed and updated.

Acquisition of lots for lot retirement would be through donation or purchase. No property owner would be forced to sell their land for the purposes of this program.

Donor Sites

The Coastal Commission has accepted lot retirement anywhere on the Midcoast, on the basis that any development on the Midcoast contributes equally to congestion on highways 1 and 92. However, a lot retirement program could specifically define characteristics of eligible donor sites—sites where development rights would be retired—in order to support other Coastal Act goals and LCP policies.

Specifically, the program could support LCP Policy 1.18, which calls on the County to "concentrate new development in urban areas and rural service centers by requiring the 'infilling' of existing residential subdivisions and commercial areas." The program evaluated here would specify potential donor sites as undeveloped legal parcels having at least one of the following characteristics:

- Located outside of existing residential subdivisions where development has taken place, and outside of existing commercial areas;
- Containing sensitive habitat;
- Located in an area designated for Conservation, Open Space, Recreation or Agriculture in General Plans or Local Coastal Land Use Plans.

[2] California Coastal Commission, W11a: Permit Amendment A-1-HMB-99-022-A-1 (Pacific Ridge), June 18, 2008.

By resulting in retirement of development rights in undeveloped areas, and not in urban areas, this would help support conservation of sensitive habitat areas, agriculture, and priority open spaces, and development in infill areas.

Potential Lot Retirement donor sites in each subarea are shown in Figures 1 and 2.

Project Applicability

Lot retirement could be required only when new residential subdivisions are proposed. This would further support a priority for infill development and for visitor-serving and other commercial development.

CASE STUDIES OF LOT RETIREMENT PROGRAMS

Cambria and County of San Luis Obispo

In addition to the Voluntary Lot Merger Program, the Cambria Community Services District (CCSD) has established incentives for lot retirement to achieve the goals of the Buildout Reduction Program (BRP). Owners may voluntarily elect to retire potential building sites with deed restrictions or conservation easements. The CCSD Water and Sewer Allocation Ordinance (Chapter 8.04 of the CCSD Code) allows property owners to transfer single-family residential water meters or single-family residential water meter wait-list positions between two lots. These transfers are allowed on the condition that the applicant agrees to permanently retire the development rights on the lot from which the meter or water meter wait-list position was transferred. In 2005, it was estimated that nearly 400 lots had been retired through this water transfer program. In addition, tax incentives for donating properties may be provided through the Land Trust Alliance or the Natural Heritage Preservation Credit program.

In addition to the CCSD Water and Sewer Allocation Ordinance, the County of San Luis Obispo Transfer of Development Credits (TDC) provides additional incentives for retiring lots. While the program is applied countywide and TDC typically does not retire development rights, the County has its own variation of TDC in Cambria. Property owners in designated areas in Cambria may exceed permitted building size in exchange for retiring development rights. This provision applies to lots located in Special Project Areas, designated by the County due to sensitive habitat or steep slopes. Under the Cambria TDC program, property owners pay a fee, which is used to purchase lots and retire development rights.

The Land Conservancy of San Luis Obispo County has undertaken an aggressive lot development rights acquisition program since 1986, as part of the Cambria/Lodge Hill Restoration Program. The Lodge Hill area features a combination of rare Monterey pine trees, as well as one of the largest concentrations of antiquated, substandard lots on the California Coast. Through the TDC program, the Land Conservancy purchases priority lots, sells the associated development credits, and establishes a revolving fund. By 2005, more than 250 lots had been retired and conveyed to the CCSD under this lot acquisition program, with a conversation easement retained by the Land Conservancy.

Santa Monica Mountains/Malibu

Since 1978, the California Coastal Commission has used a transfer of development credit (TDC) program using lot retirement to mitigate cumulative impacts on coastal resources in the Santa Monica Mountains/Malibu region. Through this program, the development potential on existing parcels in designated areas is retired for each new parcel created through an approved subdivision or for multi-family residential projects. According to a Regional Cumulative Assessment Project (ReCAP) report, by 1999, approximately 1,050 lots had been retired in the Santa Monica Mountains through the lot retirement program, covering about 1,673 acres of land. The report recommended that the in-lieu fee program established in 1996 should be discontinued, as Commissions staff found that lot retirement through in-lieu fees had been difficult to implement and manage. In addition, the report encouraged the City of Malibu and the County of Los Angeles to implement a similar program through their LCPs in order to achieve region-wide coordination.

In September 2002, the lot retirement program was incorporated into the City of Malibu Local Coastal Program. Lots that contain environmentally sensitive habitat areas (ESHA), are located in small-lot subdivisions, or are located adjacent to parklands can be retired for transfer of development credits. The LCP specifies additional stipulations for certain donor areas, such as requiring that lots are contiguous to each other or to other retired lots. Donor credits are implemented through open space easement dedication and the merging of retired lots with one or more adjacent developed or buildable parcels.

The number of development credits to be transferred is determined by the formula:

Credit Area = (A/5) * (50-S)/35,
where A is the area of the small lot in square feet,
and S is the average slope of the small lot in percent.

In August 2014, Los Angeles County adopted a Local Coastal Program for the Santa Monica Mountains segment of the Country's coastal zone, which incorporates the lot retirement program. Donor areas include listed "rural villages" (split into primary and secondary areas) and parcels which contain habitat area, or are adjoining or within 200 feet of habitat areas or parklands.

3.3 Traffic Fee Mitigation Program

As part of the CTMP, the DKS Team will evaluate the potential role of a Transportation Impact Mitigation Fee Program in providing funds for the transportation improvements recommended as mitigation for future development in the Midcoast area. Such a program would collect fees for new residential and non-residential development on a per-housing-unit basis for residential and per-square-foot basis for non-residential development. The rates would be based on a specified list of projects needed to mitigate the impacts of the growth, the total estimated capital cost of those projects and the amount of new development expected. An assessment of the portion of total project need attributable to growth will determine what a legally defensible rate structure might be for a Transportation Impact Mitigation Fee Program.

New development would constitute about 21 percent of total housing units anticipated in the constrained Development Forecast for the unincorporated portion of the Study Area (the remaining 79 percent is existing housing). New development would represent 49 percent of jobs in the unincorporated portions of the Study Area. (Existing jobs constitutes 51 percent.) These percentages indicate that an estimated 30 to 40 percent of the capital cost for transportation improvements could be eligible for funding from a Transportation Impact Mitigation Fee program in the unincorporated Midcoast. Strategies designed to reduce the total Buildout would likely reduce these percentages.

Although a Transportation Impact Mitigation Fee Program is being considered as a method for funding transportation improvements needed to accommodate growth rather than as a growth management strategy, the fee program could have some impact on the total amount of new development that occurs, if they raise the cost of development. Because some transportation improvements are often required as a condition of approval in the absence of a fee program, the degree to which the fee program would increase development costs is uncertain. By providing funding for transportation improvements in a systematic and predictable way, the Transportation Impact Mitigation Fee Program could also result in more development than might otherwise occur, by facilitating the transportation improvements needed to accommodate the growth. However, this should not lead to a higher level of Buildout than is established by the Comprehensive Transportation Management Plan.

4 Evaluation of Land Use Policy Concepts

4.1 Buildout Reduction Potential

The potential for lot merger and lot retirement policy concepts to reduce development potential in the unincorporated Midcoast portion of the Study Area is summarized in Tables 1 and 2.

LOT MERGER PROGRAM

Spatial analysis determined that the proposed lot merger program could reduce development potential in the unincorporated portion of the Study Area by an estimated 216 lots, or housing units. The majority of development potential reduction would occur in residential districts, reducing the number of vacant substandard lots by 40 percent. The number of vacant substandard lots would be reduced by 40 percent. Most of the lot mergers (165 lots) would occur in residential districts, with a smaller number (51 lots) in the Resource Management (RM-CZ) district.

The effect of this reduction in lots is already accounted for in the estimate of development potential, as described on page 4 of this report.


Figure 1
Lots Eligible for Potential CTMP Land Use Programs, Unincorporated Midcoast (Urban)
Lots Eligible for Potential Lot Merger Program
Lots Eligible for Potential Lot Retirement Program
Paper Lots & Subdivisions
Existing Parks, Open Space & Recreation
Montara
Point Montara Light Station
Moss Beach
Rancho Corral de Tierra
Fitzgerald Marine Reserve
Pillar Point Bluff
Half Moon Bay Airport
Princeton
El Granada
Miramar
Quarry Park
Ross' Cove
Princeton Beach
Perched Beach
Pillar Point Beach
Pillar Point Harbor
El Granada Beach
Pillar Point
Mavericks Beach
Miramar Beach
Roosevelt Beach
Pacific Ocean
Half Moon Bay
Cabrillo Hwy
Airport St
Obispo Rd
The Alameda
Freeways
Major Highways
Major Streets
CTMP Study Area
City of Half Moon Bay
Midcoast LCP Project Area
Princeton Study Area Boundary
Half Moon Bay Planning Area
Lakes/Ocean
Data Source: San Mateo County GIS, 2014; MTC, 2013; ESRI, 2014; Dyett & Bhatia, 2014


Figure 2
Sites Eligible for Potential CTMP Land Use Programs, Unincorporated Midcoast (Rural)
Lots Eligible for Potential Lot Merger Program
Lots Eligible for Potential Lot Retirement Program
Existing Parks, Open Space & Recreation
Milagra Ridge
Mori Point
Pacifica
Pacifica State Beach
Sweeney Ridge
Pedro Point Headlands
Gray Whale Cove SB
San Pedro Valley Park
Montara State Beach
Montara
Point Montara Light Station
Moss Beach
Fitzgerald Marine Reserve
Half Moon Bay Airport
Princeton
El Granada
Pillar Point
San Andreas Lake
Junipero Serra Park
San Bruno
Millbrae
Burlingame
San Mateo
Hillsborough
Belmont
San Francisco State Fish and Game Refuge
SAN MATEO
Rancho Corral de Tierra
Lower Crystal Springs Reservoir
Upper Crystal Springs Reservoir
Half Moon Bay State Beach
Half Moon Bay
Burleigh H. Murray Ranch State Park
Johnston Ranch
Purisma Creek Redwoods Open Space
GGNRA
Huddart Park
Pacific Ocean
Freeways
Major Highways
Major Streets
BART
Caltrain
Coastal Zone Boundary
CTMP Planning Boundary
Pacifica City Limits
City of Half Moon Bay
Midcoast LCP Project Area
Pacifica Planning Area Boundary
Princeton Study Area Boundary
Half Moon Bay Planning Area
Lakes/Ocean
Data Source: San Mateo County GIS, 2014; MTC, 2013; ESRI, 2014; Dyett & Bhatia, 2014
0 0.5 1 2 Miles

LOT RETIREMENT PROGRAM

Under the potential lot retirement program, development potential could be reduced in the unincorporated portion of the Study Area by an estimated 148 units (each retired lot in non-residential districts is assumed to equal one unit). In the unincorporated area, these lots are located in the RM-CZ and PAD districts; the analysis does not include lots in residential districts in order to prioritize infill development.

Table 1: Estimated Development Potential Reduction Resulting from a Lot Merger Program

	Vacant Substandard Lots	*Contiguously Owned Substandard Lots*[1]	*Lot Reduction as a Result of Merging*[2]	*Percent Reduction in Vacant Substandard Lots*
San Mateo County Unincorporated Midcoast				
Residential Districts	403	212	165	41%
Resource Management-Coastal Zone District (RM-CZ)	136	65	51	38%
Planned Agriculture District (PAD)	0	0	0	NA
Total, San Mateo County Midcoast	***539***	***277***	***216***	***40%***

Notes:

1 Contiguously owned lots of less than 4,500 square feet in residential districts, less than 5,000 square feet in resource management, planned development, or urban reserve districts. At least one of the contiguously owned lots must be undeveloped.

2 Lots are assumed to be combined to create lots that conform to the criteria outlined in the previous section, or to reduce non-conformance.

Table 2: Estimated Development Potential Reduction Resulting from a Lot Retirement Program

	Eligible Donor Lots[1]
San Mateo County Midcoast	
Residential Districts	0
Resource Management-Coastal Zone District (RM-CZ)	104
Planned Agriculture District (PAD)	44
Total, San Mateo County Midcoast	***148***

Notes:

1 Undeveloped legal lots. Each retired lot is assumed to reduce Buildout by one unit.

4.2 Relationship with Coastal Act Policies

Table 3 summarizes the manner and degree to which a lot merger program and a lot retirement program would relate to relevant Coastal Act policies. The last policy in the matrix, "Maintenance and Enhancement of Coastal Access," is the basis for the Comprehensive Transportation Management Plan, but other goals must also be considered.

Table 3: Relationship to Selected Coastal Act Goals

Zoning Districts	*Lot Merger Program*	*Lot Retirement Program*
Article 4: Marine Environment		
Sec. 30233: Diking, filling or dredging; continued movement of sediment and nutrients. The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted…where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following…	By reducing number of potential development sites, reduces potential for disturbance to sensitive areas.	By reducing number of potential development sites *and contributing to the permanent conservation of land in conservation priority areas*, reduces potential for disturbance to sensitive areas.
Article 5: Land Resources		
Sec. 30240: Environmentally sensitive habitat areas; adjacent developments. Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas…	By reducing number of potential development sites, reduces potential for disturbance to sensitive areas.	By reducing number of potential development sites *and contributing to the permanent conservation of land in conservation priority areas*, reduces potential for disturbance to sensitive areas.
Sec. 30241: Prime agricultural land; maintenance in agricultural production. The maximum amount of prime agricultural land shall be maintained in agricultural production to assure the protection of the areas' agricultural economy, and conflicts shall be minimized between agricultural and urban uses.	Limited implications for agricultural land preservation in County. County lot merger program would not apply in Planned Agricultural District; few substandard parcels exist on agricultural land.	Program could support maintenance of agricultural land by permanently removing development rights from parcels used for agriculture, in both jurisdictions.
Article 6: Development		
Sec. 30250: Location; existing developed area. New residential, commercial, or industrial development… shall be located within, contiguous with, or in close proximity to, existing developed areas…	Lot merger program would apply in both existing developed areas and in undeveloped areas such as paper subdivisions. However, most substandard lots are in paper subdivisions, so the policy would have an overall benefit to concentrating development.	Lot retirement program could be tailored to areas where agricultural and natural resource conservation are prioritized, and would support concentration of development.

Table 3: Relationship to Selected Coastal Act Goals

Zoning Districts	*Lot Merger Program*	*Lot Retirement Program*
Sec. 30251: Scenic and visual qualities. The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance…	By reducing development potential on small lots and in paper subdivisions, supports maintenance of visual character of coast	By reducing development potential on small lots and in paper subdivisions *and contributing to permanent land conservation in priority conservation and agricultural areas,* supports maintenance of visual character of coast
Sec. 30252: Maintenance and enhancement of public access. The location and amount of new development should maintain and enhance public access to the coast…	By reducing development potential, limits impacts to congestion on major roadways and supports public access to the coast	By reducing development potential, limits impacts to congestion on major roadways and supports public access to the coast

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DYETT & BHATIA
Urban and Regional Planners

755 Sansome Street, Suite 400
San Francisco, California 94111
415 956 4300 415 956 7315

APPENDIX B - FEASIBILITY AND DESIGN CONSIDERATIONS

FEASIBILITY CONSIDERATIONS

#	Improvement	Feasibility and Design Considerations
Roadway and Intersection Improvements		
R1	Gray Whale Cove Turn and Acceleration Lanes	Improvement is feasible. Provide adequate storage length for southbound (SB) lane based on expected queuing to minimize the potential for queue spill back from the left-turn lane and rear end collision. The beach access crosswalk should be placed at a location that would accommodate the southbound storage lane. Southbound merge lane is feasible
R2	SR-1 Side-Street Stop Signs	Feasible as stated
R3	SR-1 Paved Shoulder and Curb Phase A	While technically feasible, some of the segments of Highway 1 have hills on both sides of the roadway, which can make providing paved shoulders expensive along Highway 1 through the Midcoast area and Half Moon Bay.
R4	California Avenue Signal	This intersection may require careful design considerations because of the Wienke Way leg that makes it a five legged intersection. Striping enhancements may be necessary to create safe pedestrian crossing opportunities at the Highway 1/California Avenue intersection
R5	Cypress Avenue Signal	Feasible as stated
R6	Main Street (South) Signal	Feasible as stated
R7	Montara Lighthouse Median and Left Turn Bay	Feasible as stated
R8	Rocket Farms Access Consolidation	Feasible as stated
R9	Widening of Highway 1 at Ruisseau Francois Avenue	The existing bike path to the east of Highway 1 north of Ruisseau Francois Avenue and west of Highway 1 south of Ruisseau Francois may need to be moved based on the widening.

#	Improvement	Feasibility and Design Considerations
R10	Terrace Avenue/Grand Boulevard Access Consolidation and Signalization	Feasible as stated
R11	Widening and striping of approach at Spindrift Way	Additional right of way will be needed north of Spindrift to allow for the widening
R12	Kehoe Avenue Signal	Feasible as stated
R13	Widening and striping of approach at Grandview Boulevard	Additional right of way will be needed either north or south of Grandview Boulevard to allow for the widening
R14	Signage to allow only right turns from Filbert Street and Seymour Street	Feasible as stated
R15	Widening of Highway 1 to four lanes between Kelly Avenue and Main Street (South)	Feasible as stated
R16	SR-92/SR-35 Roundabout	Feasible as stated
R17	Main Street Traffic Calming	Feasible with good traffic engineering design and appropriate traffic calming device installations
R18	Carlos Street Traffic Calming	Feasible with good traffic engineering design and appropriate traffic calming device installations
R19	SR-92 Left Turn Lanes	Feasible. The left-turn pockets should have adequate storage lengths to minimize their impact on traffic operation along SR-92
R20	SR-92 Passing/Climbing Lanes	Feasible with careful highway design considerations
R21	"Trucks Keep Right" signage on SR 92	Feasible as stated
Bicycle and Pedestrian Improvements		
B1	Striped Pedestrian Crossing with Beacons	Feasible. Specifically, the Rapid Rectangular Flashing Beacon technology can be installed to effectively warn motorists for pedestrian safety.

#	Improvement	Feasibility and Design Considerations
B2	Hwy 1 walkway	Feasible and recommended because of high pedestrian activities
B3	Coronado Street and Ave Alhambra walkway	Feasible as stated
B4	Parallel Trail adjacent to Highway 1 for the entire study area	While it is feasible to install a parallel trail along Highway 1, it is not likely to be a low cost improvement option as the trail alignment is likely to have uneven profile and will need to be engineered. Additionally, a lot of trees will need to be removed to accommodate the trail
B5	Coastal Trail throughout the entire study area	Feasible as stated
B6	Traffic Signal Updates	Feasible and cost effective.
B7	Capistrano Road Bicycle Facilities	Feasible as stated
B8	Airport Street Class III Bike Lanes	Feasible as stated
B9	SR-92 Bike Lanes	Feasible with careful highway design considerations
B10	Hwy 1 Class II Bicycle Lane	Feasible with careful highway design considerations
Transit Improvements		
T1	Bus Stop Amenities	Feasible as stated
T2	Increased Weekend Samtrans service	Feasible as stated
Parking Improvements		
P1	Montara State Beach Parking Lot Improvements	Feasible with northbound left-turn lane for access
P2	Upper Gray Whale Cove Parking Lot Improvements	Feasible as stated
P3	Wayfinding signage	Feasible and highly recommended
P4	Coastside Beach Shuttle	Feasible as stated
P5	Carlos Street On-Street Parking	Feasible as stated
P6	El Granada Diagonal Parking	Feasible as stated

APPENDIX C - COST ESTIMATE CALCULATIONS

DKS Associates

Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **R1**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: Gray Whale Cove Turn and Acceleration Lanes

Project Location: Gray Whale Cove Parking Lot

Description

Project would install a left turn bay with painted island to provide a storage area for left turn movements in and out of parking lot. The concept shown includes roadway horizontal alignment consistent with existing curves in this area and can be constructed with very little necessary earthwork. Without extending the widening through areas that require signifianctly more earthwork, standard Caltrans left turn deceleration lengths cannot be achieved. However, a retrofit with the shorter deceleration length shown here provides significant safety benefits over the existing condition with no left turn lane.

Project Length (ft): 370

Date of Estimate: Feb. 6, 2015

Prepared by: T. Krakow

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
1	Earthwork	4163	SF	$2.00	$ 8,326
2	Class 2 Aggregate Base	308	CY	$65.00	$ 20,044
3	Hot Mix Asphalt (Type A)	206	Ton	$110.00	$ 22,668
4	Restripe roadway	370	LF	$8.00	$ 2,960
5	Stripe high visibility (zebra) crosswalk	198	SF	$7.00	$ 1,386
6	Ped-activated flashing beacon installation	2	EA	$18,400.00	$ 36,800
7	Install pedestrian crossing warning signs	2	EA	$250.00	$ 500
8	Additional signs	2	EA	$250.00	$ 500
9	Clearing and grubbing	1	LS	$30,000.00	$ 30,000
10	Temporary traffic control	1	LS	$9,300.00	$ 9,300
11	Prepare Water Pollution Control Plan	1	LS	$6,000.00	$ 6,000
12	Surveying	1	LS	$30,000.00	$ 30,000
13	Mobilization	1	LS	$ 16,800.00	$ 16,800

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 168,000

Project Number **R1**

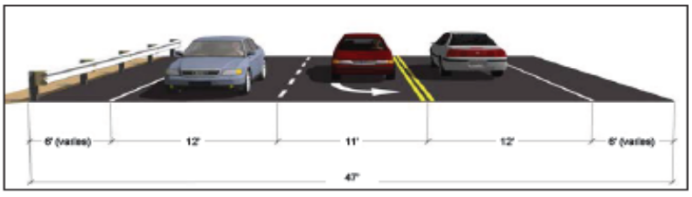
Planning Engineering (TE)	$ 30,000	Contract Items	$ 184,800
Preliminary Engineering (Design/Survey)*	$ 100,000	Other Costs (CON)	$ 37,000
Utility Coordination (Design)	$ 30,000	Contingency*	$ 28,000
Environmental (Environmental, Real Property)	$ 30,000	Subtotal (Contract Items)	$ 249,800
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ 30,000
Real Property Labor	$ -	Subtotal (PE)	$ 160,000
R/W Acquisition	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ 37,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 227,000		
		Grand Total	$ 439,800
		Current Year	2015
		Escalation Year	2015
		Escalation Rate	0.0%
		➢ **TOTAL (in 2015 dollars)**	**$ 440,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 15% of contract items. ($10,000 min.)

Project R1: Gray Whale Cove Turn and Acceleration Lanes



DKS Associates

Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **R2**

☐ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.
☐ Click here if this project is a surface treatment or overlay project.

Project Name: SR-1 Side-Street Stop Signs
Project Location: Midcoast and Half Moon Bay

Description

Project will install stop signs to all unsigned side-street intersections along Hwy 1. These include Young Avenue in Half Moon Bay, Furtado Lane in El Granada, and 16th Street, 13th Street, 11th Street, 7th Street, Seacliff Lane, and 1st Street in Montara.

Project Length (ft): N/A

Date of Estimate: Feb. 6, 2015

Prepared by: T. Krakow

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
1	Install R1-1 Sign	8	EA	$250.00	$ 2,000
2	Mobilization	1	LS	$ 200.00	$ 200

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 2,000

Project Number **R2**

Planning Engineering (TE)	$ -	Contract Items	$ 2,200
Preliminary Engineering (Design/Survey)*	$ 15,000	Other Costs (CON)	$ -
Utility Coordination (Design)	$ -	Contingency*	$ 1,000
Environmental (Environmental, Real Property)	$ -	Subtotal (Contract Items)	$ 3,200
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ -
Real Property Labor	$ -	Subtotal (PE)	$ 15,000
R/W Acquisition	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ -		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 15,000		
		Grand Total	$ 18,200
		Current Year	2015
		Escalation Year	2015
		Escalation Rate	0.0%
		➢ **TOTAL (in 2015 dollars)**	**$ 18,000**

* CONTINGENCY is 15% of contract items.

Project R2: SR-1 Side-Street Stop Signs

Locations Missing Stop Signs:

Half Moon Bay
SR-1 and Young Avenue

El Granada
SR-1 and Furtado Lane

Montara
SR-1 and 16th Street
SR-1 and 13th Street
SR-1 and 11th Street
SR-1 and 7th Street
SR-1 and Seacliff Ct
SR-1 and 1st Street

R1-1

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Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **R3A**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.
☐ Click here if this project is a surface treatment or overlay project.

Project Name: SR-1 Paved Shoulder and Curb (Phase A)
Project Location: Half Moon Bay to Montara

Description

Project will provide a consistent cross section along Highway 1 for vehicle and pedestrian safety. In addition to the 6' paved shoulder which currently exists in the developed portions of Half Moon Bay, El Granada, Moss Beach, and Montara, the project will construct a concrete curb and gutter. Phase A improvements of Project 4 will be implemented during Alternative 1, whereas Phase B and C improvements will be implemented during Alternatives 2 and 3.

Project Length (ft): Varies

Date of Estimate: Feb. 11, 2015

Prepared by: T. Krakow

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
1	Curb and gutter	2	LF/LF	$35.00	$ 70.00
2	Temporary traffic control	1	LF/LF	$3.50	$ 3.50
3	Prepare Water Pollution Control Plan	1	LF/LF	$1.50	$ 1.50
4	Clearing and grubbing	1	LF/LF	$3.00	$ 3.00
5	Surveying	1	LF/LF	$3.00	$ 3.00
6	Misc. Drainage Modifications	1	LF/LF	$7.00	$ 7.00
				Cost Per Linear Foot:	$ 88.00
7	Half Moon Bay Seg.- Terrace Ave to Seymour St	7350	LF	$ 88.00	$ 646,800
8	El Granada Seg.- Capistrano Rd to Coronado St	4460	LF	$ 88.00	$ 392,480
9	Moss Beach Seg.- California Ave to Cypress Ave	1430	LF	$ 88.00	$ 125,840
10	Montara Seg.- between 7th St and 9th St	545	LF	$ 88.00	$ 47,960
11	Mobilization	1	LS	$ 121,300.00	$ 121,300

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 1,213,000

Project Number **R3A**

Planning Engineering (TE)	$ 122,000	Contract Items	$ 1,334,300
Preliminary Engineering (Design/Survey)*	$ 201,000	Other Costs (CON)	$ 201,000
Utility Coordination (Design)	$ 121,308	Contingency*	$ 201,000
Environmental (Environmental, Real Property)	$ 121,308	Subtotal (Contract Items)	$ 1,736,300
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ 122,000
Real Property Labor	$ -	Subtotal (PE)	$ 443,616
R/W Acquisition	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ 201,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 766,616		
		Grand Total	$ 2,301,916
		Current Year	2015
		Escalation Year	2015
		Escalation Rate	0.0%
		➢ **TOTAL (in 2015 dollars)**	**$ 2,302,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)
* Construction Engineering is 15% of contract items. ($20,000 min.)
* CONTINGENCY is 15% of contract items. ($10,000 min.)

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Project Number **R3B**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: SR-1 Paved Shoulder and Curb (Phase B)

Project Location: Half Moon Bay to Montara

Description

Project will provide a consistent cross section along Highway 1 for vehicle and pedestrian safety. In addition to the 6' paved shoulder which currently exists in the developed portions of Half Moon Bay, El Granada, Moss Beach, and Montara, the project will construct a concrete curb and gutter. Phase B improvements of Project 4 will be implemented during Alternative 2, whereas Phase A and C improvements were/will be implemented during Alternatives 1 and 3.

Project Length (ft): Varies

Date of Estimate: Feb. 11, 2015

Prepared by: T. Krakow

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
1	Curb and gutter	2	LF/LF	$35.00	$ 70.00
2	Temporary traffic control	1	LF/LF	$3.50	$ 3.50
3	Prepare Water Pollution Control Plan	1	LF/LF	$1.50	$ 1.50
4	Clearing and grubbing	1	LF/LF	$3.00	$ 3.00
5	Surveying	1	LF/LF	$3.00	$ 3.00
6	Misc. Drainage Modifications	1	LF/LF	$7.00	$ 7.00
				Cost Per Linear Foot:	$ 88.00
7	Half Moon Bay Seg.- Seymour to Redondo Bch & Ter	8930	LF	$ 88.00	$ 785,840
8	El Granada Seg.- Coronado St to Medio Ave & Capist	4800	LF	$ 88.00	$ 422,400
9	Moss Beach Seg.- Cypress Ave to Etheldore St	1720	LF	$ 88.00	$ 151,360
10	Montara Seg.- between 1st St and 7th St	1570	LF	$ 88.00	$ 138,160
11	Mobilization	1	LS	$ 149,800.00	$ 149,800

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 1,498,000

Project Number **R3B**

Planning Engineering (TE)	$ 150,000	Contract Items	$ 1,647,800
Preliminary Engineering (Design/Survey)*	$ 248,000	Other Costs (CON)	$ 248,000
Utility Coordination (Design)	$ 149,776	Contingency*	$ 248,000
Environmental (Environmental, Real Property)	$ 149,776	Subtotal (Contract Items)	$ 2,143,800
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ 150,000
Real Property Labor	$ -	Subtotal (PE)	$ 547,552
R/W Acquisition	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ 248,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 945,552		
		Grand Total	$ 2,841,352
		Current Year	2015
		Escalation Year	2015
		Escalation Rate	0.0%
		➢ **TOTAL (in 2015 dollars)**	**$ 2,841,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 15% of contract items. ($10,000 min.)

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1970 Broadway Ste 740, Oakland CA 94612

Project Number **R3C**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.
☐ Click here if this project is a surface treatment or overlay project.

Project Name: SR-1 Paved Shoulder and Curb (Phase C)
Project Location: Half Moon Bay to Montara

Description: Project will provide a consistent cross section along Highway 1 for vehicle and pedestrian safety. In addition to the 6' paved shoulder which currently exists in the developed portions of Half Moon Bay, El Granada, Moss Beach, and Montara, the project will construct a concrete curb and gutter. Phase C improvements of Project 4 will be implemented during Alternative 3, whereas Phase A and B improvements were previously implemented during Alternatives 1 and 2.

Project Length (ft): Varies

Date of Estimate: Feb. 11, 2015

Prepared by: T. Krakow

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
1	Curb and gutter	2	LF/LF	$35.00	$ 70.00
2	Temporary traffic control	1	LF/LF	$3.50	$ 3.50
3	Prepare Water Pollution Control Plan	1	LF/LF	$1.50	$ 1.50
4	Clearing and grubbing	1	LF/LF	$3.00	$ 3.00
5	Surveying	1	LF/LF	$3.00	$ 3.00
6	Misc. Drainage Modifications	1	LF/LF	$7.00	$ 7.00
				Cost Per Linear Foot:	$ 88.00
7	Half Moon Bay Seg.- Redondo Bch to Miramntes Pt Rd & Frenchmar		LF	$ 88.00	$ -
8	El Granada Seg.- Medio Ave to Mirada Rd		LF	$ 88.00	$ -
9	Moss Beach Seg.- Carlos St to California Ave	3220	LF	$ 88.00	$ 283,360
10	Montara Seg.- between 9th St and 14th St	1345	LF	$ 88.00	$ 118,360
11	Mobilization	1	LS	$ 40,200.00	$ 40,200

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 402,000

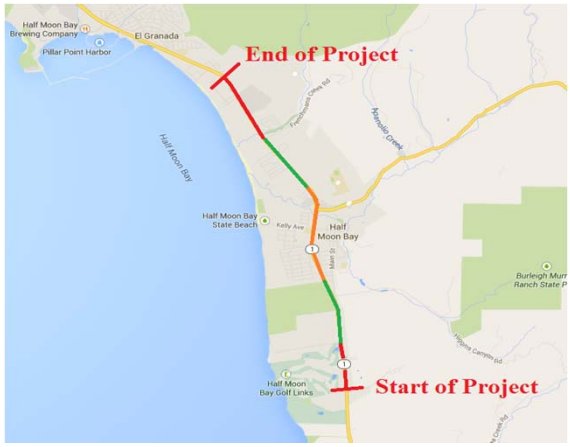
Project Number **R3C**

Planning Engineering (TE)	$ 41,000	Contract Items	$ 442,200
Preliminary Engineering (Design/Survey)*	$ 100,000	Other Costs (CON)	$ 89,000
Utility Coordination (Design)	$ 40,172	Contingency*	$ 67,000
Environmental (Environmental, Real Property)	$ 40,172	Subtotal (Contract Items)	$ 598,200
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ 41,000
Real Property Labor	$ -	Subtotal (PE)	$ 180,344
R/W Acquisition	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ 89,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 310,344		
		Grand Total	$ 819,544
		Current Year	2015
		Escalation Year	2015
		Escalation Rate	0.0%
		➢ **TOTAL (in 2015 dollars)**	**$ 820,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)
* Construction Engineering is 15% of contract items. ($20,000 min.)
* CONTINGENCY is 15% of contract items. ($10,000 min.)

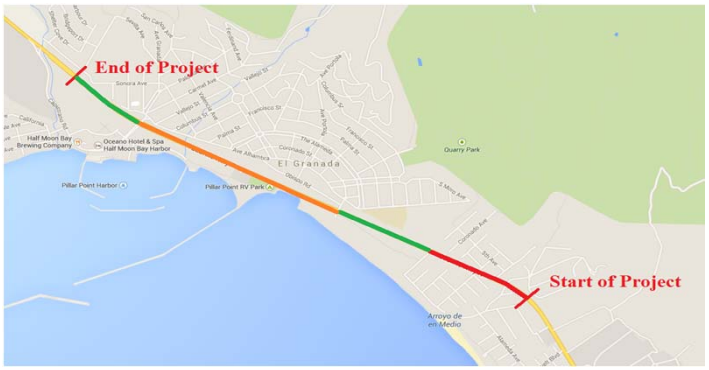
Project R3: SR-1 Paved Shoulder and Curb

Half Moon Bay Segment

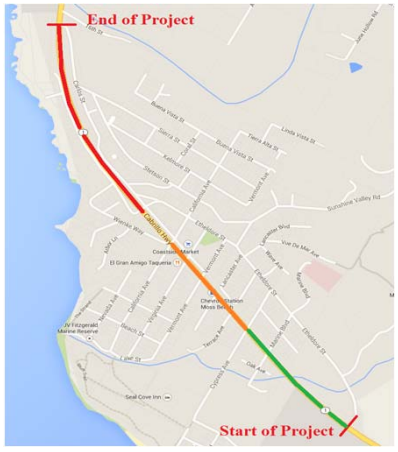


Phase A Improvement
Phase B Improvement
Phase C Improvement

El Granada Segment



Moss Beach Segment



Montara Segment

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Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **R4**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: California Avenue Signal

Project Location: SR-1 and California Avenue, Moss Beach

Description: Project will signalize the intersection of SR-1 and California Avenue in Moss Beach.

Project Length (ft): N/A

Date of Estimate: Feb. 11, 2015

Prepared by: T. Krakow

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
1	Install traffic signal with safety lighting	5	EA	$ 68,750.00	$ 343,750
2	Removal of signs	1	LS	$ 500.00	$ 500
3	Removal of pavement legends	1	LS	$ 1,000.00	$ 1,000
4	Thermoplastic striping for crosswalks	1	LS	$ 2,000.00	$ 2,000
5	Restripe intersection approach	5	EA	$ 2,500.00	$ 12,500
6	Temporary traffic control	1	LS	$ 9,000.00	$ 9,000
7	Prepare Water Pollution Control Plan	1	EA	$6,000.00	$ 6,000
8	Mobilization	1	LS	$ 37,500.00	$ 37,500

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 375,000

Project Number **R4**

Planning Engineering (TE)	$ 38,000	Contract Items	$ 412,500
Preliminary Engineering (Design/Survey)*	$ 100,000	Other Costs (CON)	$ 83,000
Utility Coordination (Design)	$ 35,975	Contingency*	$ 62,000
Environmental (Environmental, Real Property)	$ 35,975	Subtotal (Contract Items)	$ 557,500
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ 38,000
Real Property Labor	$ -	Subtotal (PE)	$ 171,950
R/W Acquisition	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ 83,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 292,950		
		Grand Total	$ 767,450
		Current Year	2015
		Escalation Year	2015
		Escalation Rate	0.0%
		➢ **TOTAL (in 2015 dollars)**	**$ 767,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 15% of contract items. ($10,000 min.)

Project R4: California Avenue Signal

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Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **R5**

☐ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: Cypress Avenue Signal

Project Location: SR-1 and Cypress Avenue, Moss Beach

Description: Project will signalize the intersection of SR-1 and Cypress Avenue in Moss Beach.

Project Length (ft): N/A

Date of Estimate: Feb. 11, 2015

Prepared by: T. Krakow

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
1	Install traffic signal with safety lighting	4	EA	$ 68,750.00	$ 275,000
2	Removal of signs	1	LS	$ 500.00	$ 500
3	Removal of pavement legends	1	LS	$ 1,000.00	$ 1,000
4	Thermoplastic striping for crosswalks	1	LS	$ 2,000.00	$ 2,000
5	Restripe intersection approach	4	EA	$ 2,500.00	$ 10,000
6	Temporary traffic control	1	LS	$ 7,000.00	$ 7,000
7	Prepare Water Pollution Control Plan	1	EA	$6,000.00	$ 6,000
8	Mobilization	1	LS	$ 30,200.00	$ 30,200

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 302,000

Project Number **R5**

Planning Engineering (TE)	$ 31,000	Contract Items	$ 332,200
Preliminary Engineering (Design/Survey)*	$ 100,000	Other Costs (CON)	$ 67,000
Utility Coordination (Design)	$ 30,000	Contingency*	$ 50,000
Environmental (Environmental, Real Property)	$ 30,000	Subtotal (Contract Items)	$ 449,200
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ 31,000
Real Property Labor	$ -	Subtotal (PE)	$ 160,000
R/W Acquisition	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ 67,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 258,000		
		Grand Total	$ 640,200
		Current Year	2015
		Escalation Year	2015
		Escalation Rate	0.0%
		➢ **TOTAL (in 2015 dollars)**	**$ 640,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 15% of contract items. ($10,000 min.)

Project R5: Cypress Avenue Signal

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Planning Cost Estimate

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Project Number **R6**

☐ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: Main Street (S) Signal

Project Location: SR-1 and Main Street (S), Half Moon Bay

Description: Project will signalize the intersection of SR-1 and Main Street (S) in Half Moon Bay.

Project Length (ft): N/A

Date of Estimate: Feb. 11, 2015

Prepared by: T. Krakow

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
1	Install traffic signal with safety lighting	3	EA	$ 68,750.00	$ 206,250
2	Removal of signs	1	LS	$ 500.00	$ 500
3	Removal of pavement legends	1	LS	$ 1,000.00	$ 1,000
4	Thermoplastic striping for crosswalks	1	LS	$ 2,000.00	$ 2,000
5	Restripe intersection approach	3	EA	$ 2,500.00	$ 7,500
6	Temporary traffic control	1	LS	$ 5,000.00	$ 5,000
7	Prepare Water Pollution Control Plan	1	EA	$6,000.00	$ 6,000
8	Mobilization	1	LS	$ 22,800.00	$ 22,800

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 228,000

Project Number **R6**

Planning Engineering (TE)	$ 30,000	Contract Items	$ 250,800
Preliminary Engineering (Design/Survey)*	$ 100,000	Other Costs (CON)	$ 51,000
Utility Coordination (Design)	$ 30,000	Contingency*	$ 38,000
Environmental (Environmental, Real Property)	$ 30,000	Subtotal (Contract Items)	$ 339,800
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ 30,000
Real Property Labor	$ -	Subtotal (PE)	$ 160,000
R/W Acquisition	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ 51,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 241,000		
		Grand Total	$ 529,800
		Current Year	2015
		Escalation Year	2015
		Escalation Rate	0.0%
		➢ **TOTAL (in 2015 dollars)**	**$ 530,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 15% of contract items. ($10,000 min.)

Project R6: Main Street (S) Signal

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Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **R7**

☐ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.
☐ Click here if this project is a surface treatment or overlay project.

Project Name: Montara Lighthouse Median and Left Turn Bay
Project Location: SR-1 and between Carlos Street and Lighthouse Driveway

Description

Project would install a median with a northbound left turn bay into the lighthouse driveway. This median would also provide a southbound left turn bay at Carlos Street, complementing the left turn restriction out of Carlos Street proposed in Alternative 1.

Project Length (ft): 175

Date of Estimate: Feb. 6, 2015

Prepared by: T. Krakow

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
1	Remove existing striping	1	LS	$1,000.00	$ 1,000
2	Demolish existing asphalt	700	SF	$3.00	$ 2,100
3	Construct concrete median	350	LF	$70.00	$ 24,500
4	Striping turn bays	150	LF	$3.00	$ 450
5	Stripe left turn arrow	2	EA	$200.00	$ 400
6	Install new signage	1	LS	$2,000.00	$ 2,000
7	Mobilization	1	LS	$ 3,000.00	$ 3,000

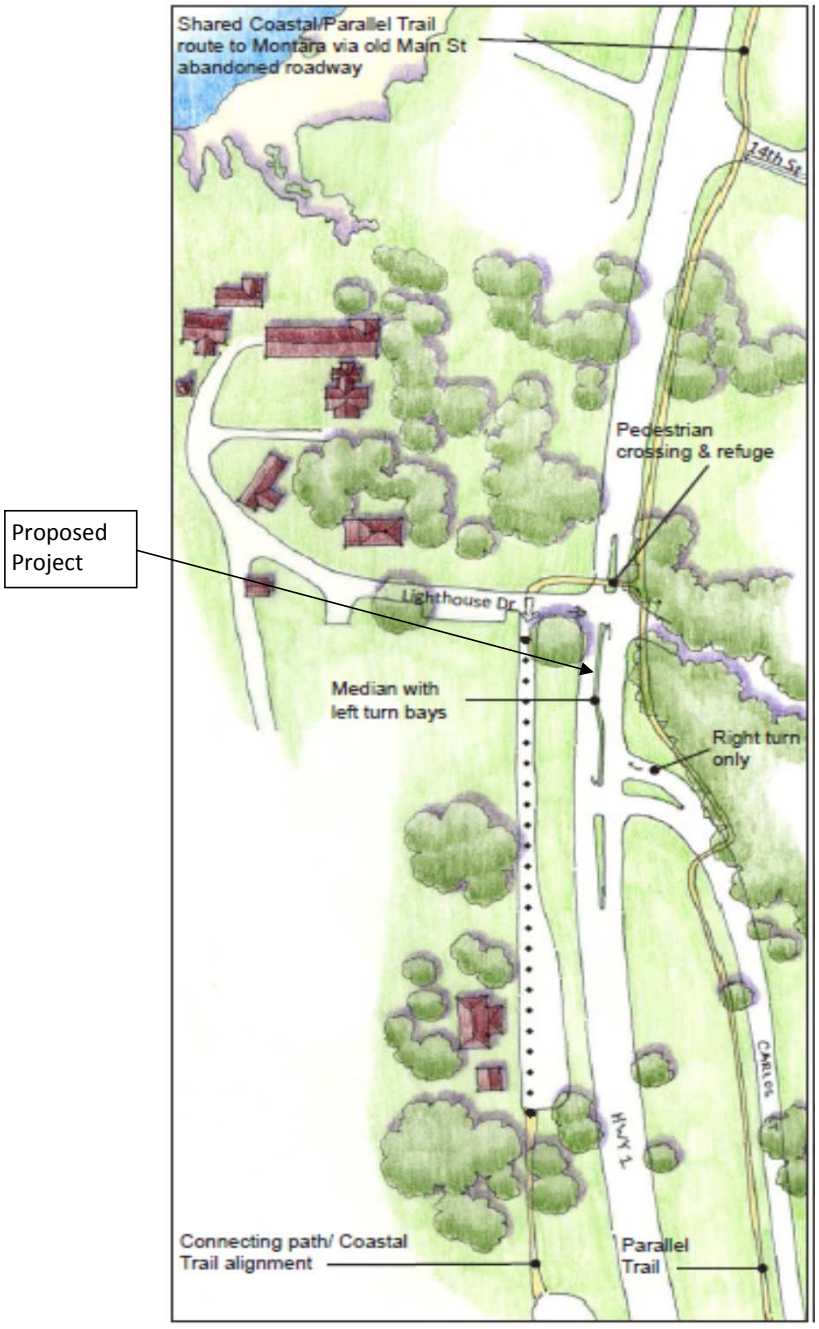
CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 30,000

Project Number **R7**

Planning Engineering (TE)	$ 30,000	Contract Items	$ 33,000
Preliminary Engineering (Design/Survey)*	$ 17,000	Other Costs (CON)	$ 20,000
Utility Coordination (Design)	$ 30,000	Contingency*	$ 10,000
Environmental (Environmental, Real Property)	$ 30,000	Subtotal (Contract Items)	$ 63,000
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ 30,000
Real Property Labor	$ -	Subtotal (PE)	$ 77,000
R/W Acquisition	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ 20,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 127,000		
		Grand Total	$ 170,000
		Current Year	2015
		Escalation Year	2015
		Escalation Rate	0.0%
		➢ **TOTAL (in 2015 dollars)**	**$ 170,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)
* Construction Engineering is 15% of contract items. ($20,000 min.)
* CONTINGENCY is 15% of contract items. ($10,000 min.)

Project R7: Montara Lighthouse Median and Left Turn Bay



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Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **R8**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.
☐ Click here if this project is a surface treatment or overlay project.

Project Name: Rocket Farms Access Consolidation
Project Location: East of SR-1 from Young Avenue to Roosevelt Boulevard

Description

This project would consolidate the current parallel, informal, gravel driveway system into a more defined system. Specifically, a service road would be constructed (roughly in the current footprint of unpaved Alto Avenue), beginning at the driveway south of Young Avenue and continuing northward to Mirada Road. This is larger in scope than the minimal alternative, which only cosolidates access adjaceent to Rocket Farms. This expanded alternatives is expected to cost significantly more, but offers additional benefit in colidating more driveways along SR-1. This project would serve to minimize pedestrian conflicts and provide an opportunity to enhance pedestrian facilities, such as leave room for lighting and landscaping. While this project could even be implemented at the same time as the City of Half Moon Bay proposed trail on the east side of the highway, this trail or its related amenities are not included in this cost estimate.

Project Length (ft): 3530

Date of Estimate: Feb. 6, 2015

Prepared by: T. Krakow

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
1	Earthwork	84720	SF	$2.00	$ 169,440
2	Class 2 Aggregate Base	6276	CY	$65.00	$ 407,911
3	Hot Mix Asphalt (Type A)	4194	Ton	$110.00	$ 461,300
4	Striping	10590	LF	$3.00	$ 31,770
5	Clearing and grubbing	84720	SF	$1.00	$ 84,720
6	Demolish existing asphalt at dwys to be removed	1750	SF	$3.00	$ 5,250
7	Landscape gravel areas at dwys to be removed	10710	SF	$7.00	$ 74,970
8	Misc. drainage modifications	1	LS	$247,100.00	$ 247,100
9	Temporary traffic control	1	LS	$61,800.00	$ 61,800
10	Prepare Water Pollution Control Plan	1	LS	$6,000.00	$ 6,000
11	Surveying	1	LS	$30,000.00	$ 30,000
12	Mobilization	1	LS	$ 158,000.00	$ 158,000

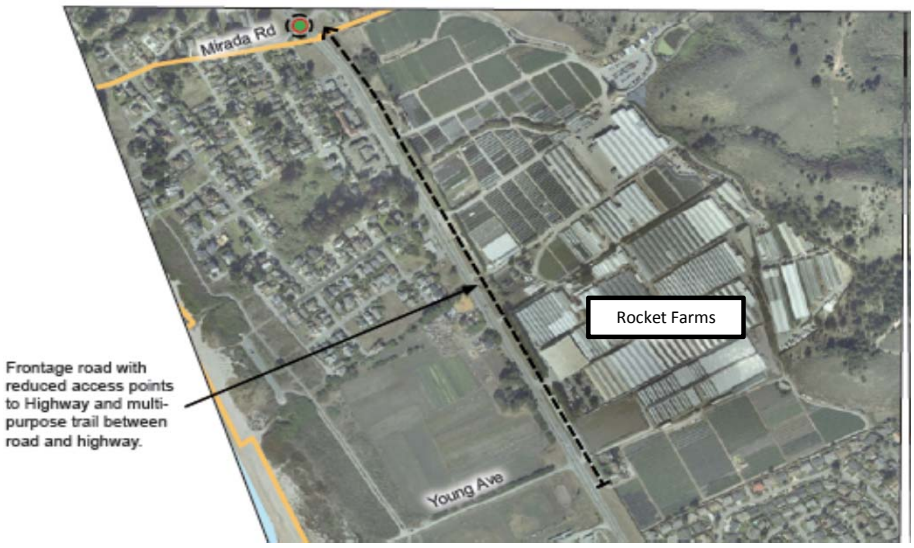
CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 1,580,000

Project Number **R8**

Planning Engineering (TE)	$ 158,000	Contract Items	$ 1,738,000
Preliminary Engineering (Design/Survey)*	$ 261,000	Other Costs (CON)	$ 261,000
Utility Coordination (Design)	$ 123,536	Contingency*	$ 261,000
Environmental (Environmental, Real Property)	$ 123,536	Subtotal (Contract Items)	$ 2,260,000
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ 158,000
Real Property Labor	$ -	Subtotal (PE)	$ 508,072
R/W Acquisition	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ 261,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 927,072		
		Grand Total	$ 2,926,072
		Current Year	2015
		Escalation Year	2015
		Escalation Rate	0.0%
		➢ **TOTAL (in 2015 dollars)**	**$ 2,926,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)
* Construction Engineering is 15% of contract items. ($20,000 min.)
* CONTINGENCY is 15% of contract items. ($10,000 min.)

Project R8: Rocket Farms Access Consolidation



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Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **R9**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: SR-1 Widening in North Half Moon Bay

Project Location: SR-1 from Venice Boulevard to Young Avenue

R9

Description

Project will widen Highway 1 from two to four lanes between Venice Boulevard and Young Avenue. The northbound 4 lane section starts past Frenchman's Creek Road and tapers back to one lane just south of Young Avenue. The southbound widening starts south of Young Avenue and continues until it becomes a drop lane at Venice Boulevard. The last 250 feet of the existing bike path will have to be relocated to the west. The widening is primarily to the east side of the existing roadway in order to avoid conflicts with the existing bike path.

Project Length (ft): 2050

Date of Estimate: Feb. 4, 2016

Prepared by: C. Shew

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
1	Demolish existing bike path	2000	SF	$5.00	$ 10,000
2	Clearing and grubbing	36600	SF	$3.00	$ 109,800
3	Earthwork	36600	SF	$6.00	$ 219,600
4	Class 2 Aggregate Base	2711	CY	$65.00	$ 176,222
5	Hot Mix Asphalt (Type A)	1510	Ton	$110.00	$ 166,073
6	Restripe roadway	2050	LF	$12.00	$ 24,600
7	Reconstruct 8' multi-use path	250	LF	$75.00	$ 18,750
8	Install truncated domes	2	EA	$1,000.00	$ 2,000
9	New signage	1	LS	$2,000.00	$ 2,000
10	Relocate signs	1	LS	$10,000.00	$ 10,000
11	Temporary traffic control	1	LS	$36,500.00	$ 36,500
12	Prepare Water Pollution Control Plan	1	LS	$6,000.00	$ 6,000
13	Misc. Drainage Modifications	1	LS	$116,331.71	$ 116,332
14	Modify signalized intersection	1	EA	$300,000.00	$ 300,000
15	Modify unsignalized intersection	1	EA	$100,000.00	$ 100,000
16	Mobilization	1	LS	$ 129,787.64	$ 129,788

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 1,297,876

Project Number **38**

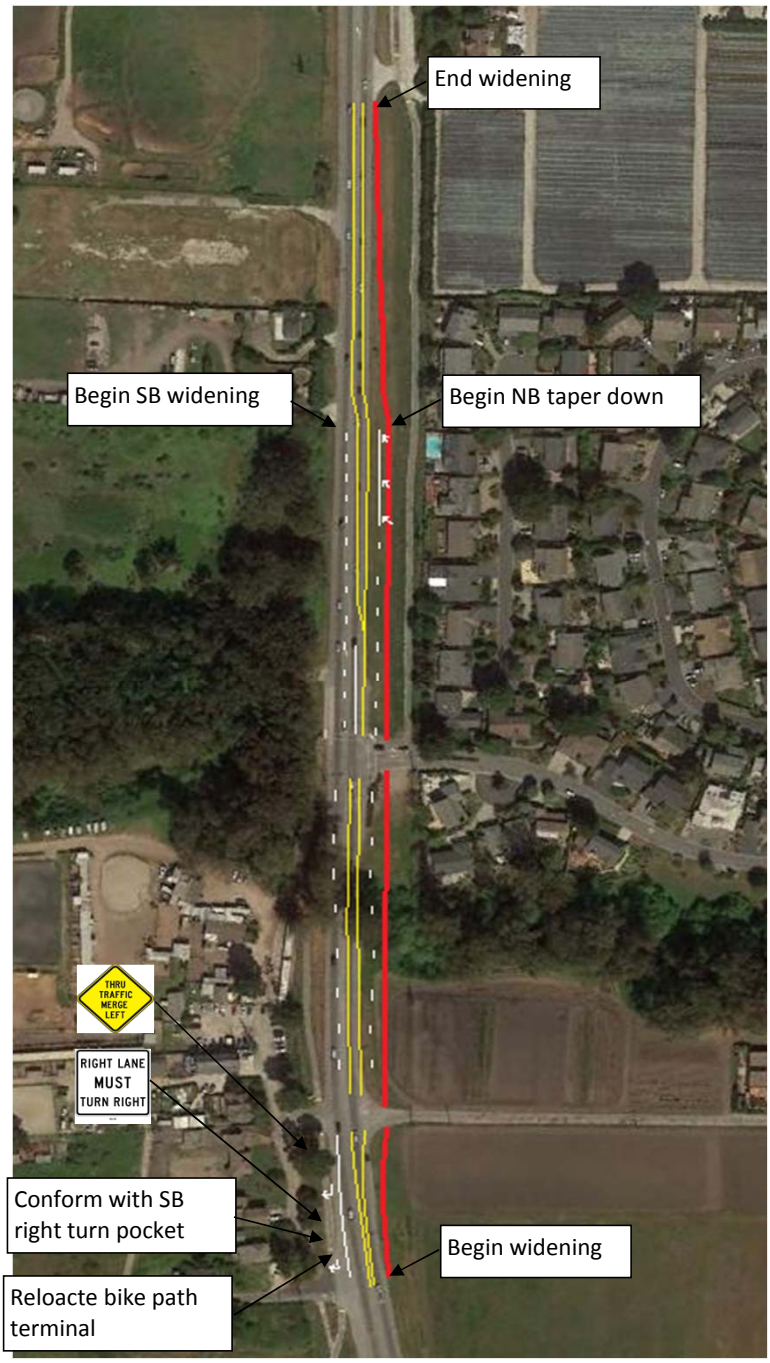
Planning Engineering (TE)	$ 130,000	Contract Items	$ 1,427,664
Preliminary Engineering (Design/Survey)*	$ 215,000	Other Costs (CON)	$ 215,000
Utility Coordination (Design)	$ 89,788	Contingency*	$ 357,000
Environmental (Environmental, Real Property)	$ 152,639	Subtotal (Contract Items)	$ 1,999,664
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ 130,000
Real Property Labor	$ -	Subtotal (PE)	$ 457,427
R/W Acquisition	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ 215,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 802,427		
		Grand Total	$ 2,587,091
		Current Year	2015
		Escalation Year	2015
		Escalation Rate	0.0%
		➢ **TOTAL (in 2015 dollars)**	**$ 2,587,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 25% of contract items. ($10,000 min.)

Project R9: SR-1 Widening in North Half Moon Bay



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Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **R10**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.
☐ Click here if this project is a surface treatment or overlay project.

Project Name: Terrace Avenue/Grand Boulevard Access Consolidation and Signalization
Project Location: SR-1 from Terrace Avenue to Grand Boulevard

Description

This project would consolidate access to SR-1 in the vicinity of Terrace Avenue and Grand Bouelvard. Specifically, the intersection of SR-1 and Terrace Avenue will be signalized, and the existing frontage road extended along the east side of SR-1 to Grand Boulevard. This frontage road will provide the sole access to Grand Boulevard. Traffic from Grand Boulevard would still be able to turn right onto SR-1, but would have to use the frontage road to the new Terrace Avenue signal to turn left onto the highway. The existing bike path would need to be realigned to construct the frontage road. While SR-1 will ultimately be widened to 4 lanes, this project does not assume this improvement.

Project Length (ft): 700

Date of Estimate: Feb. 6, 2015

Prepared by: T. Krakow

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
Signalization					
1	Install traffic signal with safety lighting	4	EA	$ 68,750.00	$ 275,000
2	Thermoplastic striping for crosswalks	1	LS	$ 2,000.00	$ 2,000
3	Restriping SR-1	700	LF	$ 8.00	$ 5,600
Extend Frontage Road					
4	Clearing and grubbing	13200	SF	$1.00	$ 13,200
5	Remove existing pavement	1700	SF	$3.00	$ 5,100
6	Earthwork	13200	SF	$2.00	$ 26,400
7	Class 2 Aggregate Base	978	CY	$65.00	$ 63,556
8	Hot Mix Asphalt (Type A)	653	Ton	$110.00	$ 71,874
9	Striping new frontage road	1650	LF	$3.00	$ 4,950
10	Misc. drainage modifications	1	LS	$37,000.00	$ 37,000
11	Retaining wall	250	LF	$200.00	$ 50,000
Relocate Bike Trail					
12	Remove existing pavement	5760	SF	$3.00	$ 17,280
13	Clearing and grubbing	5600	SF	$1.00	$ 5,600
14	Earthwork	5600	SF	$2.00	$ 11,200
15	Class 2 Aggregate Base	207	CY	$65.00	$ 13,481
16	Hot Mix Asphalt (Type A)	139	Ton	$110.00	$ 15,246
17	Striping	700	LF	$3.00	$ 2,100
18	Temporary traffic control	1	LS	$26,600.00	$ 26,600
19	Prepare Water Pollution Control Plan	1	LS	$6,000.00	$ 6,000
20	Mobilization	1	LS	$ 65,200.00	$ 65,200

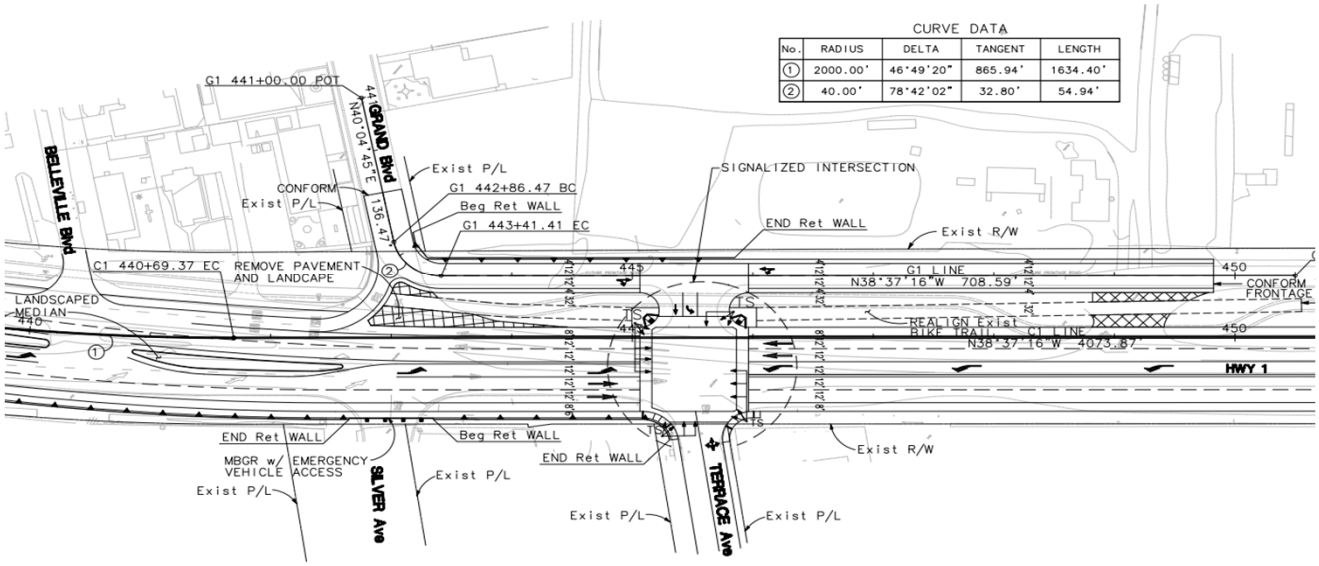
CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 652,000

Project Number **R10**

Planning Engineering (TE)	$ 66,000	Contract Items	$ 717,200
Preliminary Engineering (Design/Survey)*	$ 108,000	Other Costs (CON)	$ 108,000
Utility Coordination (Design)	$ 81,519	Contingency*	$ 108,000
Environmental (Environmental, Real Property)	$ 81,519	Subtotal (Contract Items)	$ 933,200
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ 66,000
Real Property Labor	$ -	Subtotal (PE)	$ 271,037
R/W Acquisition	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ 108,000		

Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 445,037		
		Grand Total	$ 1,270,237
* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)		Current Year	2015
* Construction Engineering is 15% of contract items. ($20,000 min.)		Escalation Year	2015
* CONTINGENCY is 15% of contract items. ($10,000 min.)		Escalation Rate	0.0%
		➢ **TOTAL (in 2015 dollars)**	**$ 1,270,000**

Project R10: Terrace Avenue/Grand Boulevard Access Consolidation and Signalization



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Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **R11**

☐ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: Spindrift Way Separate Turn Lanes

Project Location: Spindrift Way and SR-1

Description

Project would restripe the approach of Spindrift Way at SR-1 to provide separate right and left turn lanes. 11-ft lanes could be achieved with the existing pavement by prohibiting parking for an 85-ft stretch on the south side of the roadway.

Project Length (ft): 150

Date of Estimate: Jan. 29, 2016

Prepared by: C. Shew

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
1	Restripe roadway	150	LF	$8.00	$ 1,200
2	Paint south curb red	85	LF	$3.00	$ 255
3	Parking prohibition signs	1	LS	$500.00	$ 500
4	Temporary traffic control	1	LS	$200.00	$ 200
5	Prepare Water Pollution Control Plan	1	LS	$6,000.00	$ 6,000
6	Mobilization	1	LS	$ 800.00	$ 800

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 8,000

Project Number **R11**

Planning Engineering (TE)	$ 10,000	Contract Items	$ 8,800
Preliminary Engineering (Design/Survey)*	$ 20,000	Other Costs (CON)	$ 20,000
Utility Coordination (Design)	$ -	Contingency*	$ 10,000
Environmental (Environmental, Real Property)	$ 10,000	Subtotal (Contract Items)	$ 38,800
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ 10,000
Real Property Labor	$ -	Subtotal (PE)	$ 30,000
R/W Acquisition	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ 20,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 60,000		
		Grand Total	$ 78,800
		Current Year	2015
		Escalation Year	2015
		Escalation Rate	0.0%
		➢ **TOTAL (in 2015 dollars)**	**$ 79,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 15% of contract items. ($10,000 min.)

Project R11: Spindrift Way Separate Turn Lanes

DKS Associates

Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **R12**

☐ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: Kehoe Avenue Signal

Project Location: SR-1 and Kehoe Avenue, Half Moon Bay

Description: Project will signalize the intersection of SR-1 and Kehoe Avenue in Half Moon Bay.

Project Length (ft): N/A

Date of Estimate: Feb. 11, 2015

Prepared by: T. Krakow

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
1	Install traffic signal with safety lighting	4	EA	$ 68,750.00	$ 275,000
2	Removal of signs	1	LS	$ 500.00	$ 500
3	Removal of pavement legends	1	LS	$ 1,000.00	$ 1,000
4	Thermoplastic striping for crosswalks	1	LS	$ 2,000.00	$ 2,000
5	Restripe intersection approach	4	EA	$ 2,500.00	$ 10,000
6	Temporary traffic control	1	LS	$ 7,000.00	$ 7,000
7	Prepare Water Pollution Control Plan	1	EA	$6,000.00	$ 6,000
8	Mobilization	1	LS	$ 30,200.00	$ 30,200

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 302,000

Project Number **12**

Planning Engineering (TE)	$ 31,000	Contract Items	$ 332,200
Preliminary Engineering (Design/Survey)*	$ 100,000	Other Costs (CON)	$ 67,000
Utility Coordination (Design)	$ 30,000	Contingency*	$ 50,000
Environmental (Environmental, Real Property)	$ 30,000	Subtotal (Contract Items)	$ 449,200
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ 31,000
Real Property Labor	$ -	Subtotal (PE)	$ 160,000
R/W Acquisition	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ 67,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 258,000		
		Grand Total	$ 640,200
		Current Year	2015
		Escalation Year	2015
		Escalation Rate	0.0%
		➢ **TOTAL (in 2015 dollars)**	**$ 640,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 15% of contract items. ($10,000 min.)

Project 12: Kehoe Avenue Signal

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Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **R13**

☐ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: Grandview Blvd Separate Turn Lanes

Project Location: Grandview Blvd and SR-1

Description: Project would widen and restripe the approach of Grandview Blvd at SR-1 to provide separate right and left turn lanes. Parking would continue to be prohibited for an 35-ft stretch on the south side of the roadway.

Project Length (ft): 90

Date of Estimate: Jan. 29, 2016

Prepared by: C. Shew

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
1	Demolish existing curb and gutter	1	LS	$1,000.00	$ 1,000
2	Clearing and grubbing	1	LS	$10,000.00	$ 10,000
3	Earthwork	800	SF	$6.00	$ 4,800
4	Class 2 Aggregate Base	59	CY	$65.00	$ 3,852
5	Hot Mix Asphalt (Type A)	20	Ton	$110.00	$ 2,178
6	Curb and gutter	35	LF	$35.00	$ 1,225
7	Misc. drainage modifications	1	LS	$5,000.00	$ 5,000
8	Reconstruct driveway	1	LS	$5,000.00	$ 5,000
9	Restripe roadway	90	LF	$8.00	$ 720
10	Repaint south curb red	35	LF	$3.00	$ 105
11	Parking prohibition signs	1	LS	$500.00	$ 500
12	Temporary traffic control	1	LS	$5,000.00	$ 5,000
13	Prepare Water Pollution Control Plan	1	LS	$6,000.00	$ 6,000
14	Mobilization	1	LS	$ 4,500.00	$ 4,500

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 45,000

Project Number **36**

Planning Engineering (TE)	$ 30,000
Preliminary Engineering (Design/Survey)*	$ 50,000
Utility Coordination (Design)	$ 30,000
Environmental (Environmental, Real Property)	$ 30,000
R/W Engineering (Survey)	$ -
Real Property Labor	$ -
R/W Acquisition	$ -
Construction Engineering *	$ 20,000
Environmental Monitoring and Mitigation Fees	$ -
SUBTOTAL of OTHER COSTS (ALL)	$ 160,000

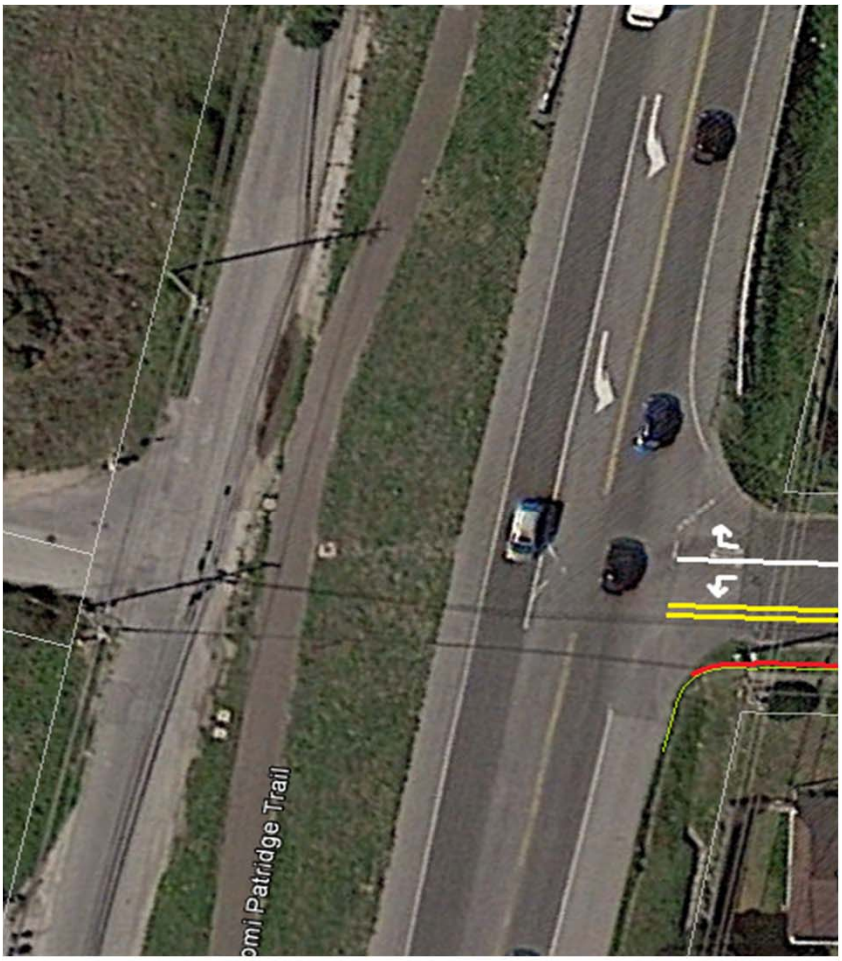
Contract Items	$ 49,500
Other Costs (CON)	$ 20,000
Contingency*	$ 10,000
Subtotal (Contract Items)	$ 79,500
Subtotal (Plan)	$ 30,000
Subtotal (PE)	$ 110,000
Subtotal (R/W)	$ -
Grand Total	$ 219,500
Current Year	2015
Escalation Year	2015
Escalation Rate	0.0%
➢ **TOTAL (in 2015 dollars)**	**$ 220,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 15% of contract items. ($10,000 min.)

Project R13: Grandview Blvd Separate Turn Lanes



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Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **R14**

☐ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.
☐ Click here if this project is a surface treatment or overlay project.

Project Name: Right Turn Only Signs
Project Location: SR-1/Seymour Street and SR-1/Filbert Street

Description: Project will install R3-5R (Right Turn Only) signs at the two Seymour Street and two Filbert Street approaches at SR-1.

Project Length (ft): N/A

Date of Estimate: Jan. 29, 2016

Prepared by: C. Shew

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
1	Install R3-5R Sign	4	EA	$250.00	$ 1,000
2	Mobilization	1	LS	$ 100.00	$ 100

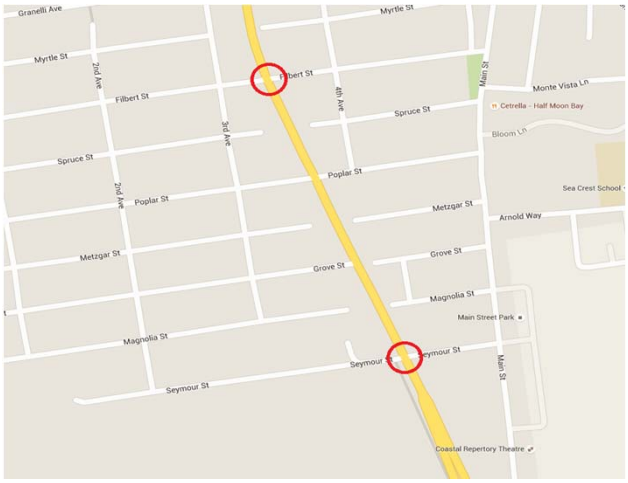
CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 1,000

Project Number **39**

Planning Engineering (TE)	$ -	Contract Items	$ 1,100
Preliminary Engineering (Design/Survey)*	$ -	Other Costs (CON)	$ -
Utility Coordination (Design)	$ -	Contingency*	$ 1,000
Environmental (Environmental, Real Property)	$ -	Subtotal (Contract Items)	$ 2,100
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ -
Real Property Labor	$ -	Subtotal (PE)	$ -
R/W Acquisition	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ -		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ -		
		Grand Total	$ 2,100
		Current Year	2016
		Escalation Year	2016
		Escalation Rate	0.0%
		➢ **TOTAL (in 2016 dollars)**	**$ 2,000**

* CONTINGENCY is 15% of contract items.

Project R14: Right Turn Only Signs



R3-5R

DKS Associates

Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **R15**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.
☐ Click here if this project is a surface treatment or overlay project.

Project Name: SR-1 Widening in South Half Moon Bay
Project Location: SR-1 from 500' south of Kelly Avenue to 650' north of South Main Street

Description: Project will widen Highway 1 from two to four lanes between Kelly Avenue and South Main Street. This cost is only to add an additional 12-foot lane and relocate/reconstruct the 8' multi-use path, as necessary. Cost to add paved shoulder and curb was costed separately in Project 4A.

Project Length (ft): 4070

Date of Estimate: Jan. 29, 2016

Prepared by: C. Shew

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
1	Demolish existing bike path	13720	SF	$5.00	$ 68,600
2	Clearing and grubbing	97680	SF	$3.00	$ 293,040
3	Earthwork	97680	SF	$4.00	$ 390,720
4	Class 2 Aggregate Base	7236	CY	$65.00	$ 470,311
5	Hot Mix Asphalt (Type A)	4029	Ton	$110.00	$ 443,223
6	Restripe roadway	16280	LF	$3.00	$ 48,840
7	Reconstruct portions of 8' multi-use path	1715	LF	$75.00	$ 128,625
8	Relocate signs	1	LS	$10,000.00	$ 10,000
9	Temporary traffic control	1	LS	$89,200.00	$ 89,200
10	Prepare Water Pollution Control Plan	1	LS	$6,000.00	$ 6,000
11	Misc. Drainage Modifications	1	LS	$291,383.87	$ 291,384
12	Modify signalized intersection	1	EA	$300,000.00	$ 300,000
13	Modify unsignalized intersection	3	EA	$100,000.00	$ 300,000
14	Mobilization	1	LS	$ 283,994.30	$ 283,994

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 2,839,943

Project Number **15**

Planning Engineering (TE)	$ 284,000
Preliminary Engineering (Design/Survey)*	$ 469,000
Utility Coordination (Design)	$ 223,994
Environmental (Environmental, Real Property)	$ 380,790
R/W Engineering (Survey)	$ -
Real Property Labor	$ -
R/W Acquisition	$ -
Construction Engineering *	$ 469,000
Environmental Monitoring and Mitigation Fees	$ -
SUBTOTAL of OTHER COSTS (ALL)	$ 1,826,785

Contract Items	$ 3,123,937
Other Costs (CON)	$ 469,000
Contingency*	$ 781,000
Subtotal (Contract Items)	$ 4,373,937
Subtotal (Plan)	$ 284,000
Subtotal (PE)	$ 1,073,785
Subtotal (R/W)	$ -
Grand Total	$ 5,731,722
Current Year	2015
Escalation Year	2015
Escalation Rate	0.0%
➢ **TOTAL (in 2015 dollars)**	**$ 5,732,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)
* Construction Engineering is 15% of contract items. ($20,000 min.)
* CONTINGENCY is 25% of contract items. ($10,000 min.)

Project 15: SR-1 Widening in South Half Moon Bay

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Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **R16**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.
☐ Click here if this project is a surface treatment or overlay project.

Project Name: SR-92/SR-35 Roundabout
Project Location: SR-92 and SR-35

Description

Project would install a 130' roundabout at the intersection of SR-92 and SR-35. The costs of the medians on the roundabout approaches are assumed to be included. The roadway costs for the each approach (within 50' of the roundabout) is assumed to be included.

Project Length (ft): N/A

Date of Estimate: Feb. 9, 2015

Prepared by: T. Krakow

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
1	Surveying	1	LS	$30,000.00	$ 30,000
2	Demolition (including existing traffic signal)	13,273	SF	$5.00	$ 66,366
3	Excavation	1,383	CY	$75.00	$ 103,740
4	Class 2 Aggregate Base	679	CY	$65.00	$ 44,151
5	Hot Mix Asphalt (Type A)	454	Ton	$110.00	$ 49,930
6	Curb & Gutter	946	LF	$35.00	$ 33,095
7	Striping	748	LF	$3.00	$ 2,245
8	Irrigation and Landscaping	9,503	SF	$10.00	$ 95,033
9	Pavers	1,649	SF	$25.00	$ 41,233
10	Relocate exising lighting fixtures	2	EA	$2,000.00	$ 4,000
11	Lighting fixtures	6	EA	$8,000.00	$ 48,000
12	Construction area Signs	1	LS	$1,500.00	$ 1,500
13	Removal of existing signs	1	LS	$500.00	$ 500
14	New signage	1	LS	$1,500.00	$ 1,500
15	Misc. drainage improvements	1	LS	$98,300.00	$ 98,300
16	Mobilization	1	LS	$ 62,000.00	$ 62,000

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 620,000

Project Number **16**

Planning Engineering (TE)	$ 62,000	Contract Items	$ 682,000
Preliminary Engineering (Design/Survey)*	$ 103,000	Other Costs (CON)	$ 103,000
Utility Coordination (Design)	$ 61,959	Contingency*	$ 103,000
Environmental (Environmental, Real Property)	$ 61,959	Subtotal (Contract Items)	$ 888,000
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ 62,000
Real Property Labor	$ -	Subtotal (PE)	$ 226,919
R/W Acquisition	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ 103,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 391,919		
		Grand Total	$ 1,176,919
		Current Year	2015
		Escalation Year	2015
		Escalation Rate	0.0%
		➢ **TOTAL (in 2015 dollars)**	**$ 1,177,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)
* Construction Engineering is 15% of contract items. ($20,000 min.)
* CONTINGENCY is 15% of contract items. ($10,000 min.)

Project 16: SR-92/SR-35 Roundabout

DKS Associates

Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **R17**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.
☐ Click here if this project is a surface treatment or overlay project.

Project Name: Main Street Traffic Calming
Project Location: Main Street in Montara

Description: Project would construct curb extensions and crosswalks at the intersections of Main and 7th, Main and 8th, and Main and 9th. The project would also install a mini traffic calming circle at Main and 9th. Additionally, sidewalks (where they do not currently exist) and ADA curb ramps would be constructed on both sides of Main Street from 7th Street to 9th Street, and on the east side of the roadway from 9th Street to 10th Street.

Project Length (ft): 800

Date of Estimate: Feb. 6, 2015

Prepared by: T. Krakow

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
1	Surveying	1	LS	$30,000.00	$ 30,000
2	Construct new concrete sidewalk	4,344	SF	$7.50	$ 32,580
3	Curb & Gutter for new sidewalk	771	LF	$35.00	$ 26,989
4	ADA curb ramp	13	EA	$3,000.00	$ 39,000
5	Concrete for curb extensions	4,400	SF	$7.50	$ 33,000
6	Curb & Gutter for curb extensions	660	LF	$35.00	$ 23,100
7	Striping-crosswalks and traffic circle	527	LF	$3.00	$ 1,581
8	Irrigation and Landscaping	177	SF	$10.00	$ 1,767
9	Construction area Signs	1	LS	$1,500.00	$ 1,500
10	New signage for traffic calming circle	1	LS	$1,000.00	$ 1,000
11	Misc. drainage improvements	1	LS	$32,100.00	$ 32,100
12	Mobilization	1	LS	$ 22,300.00	$ 22,300

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 223,000

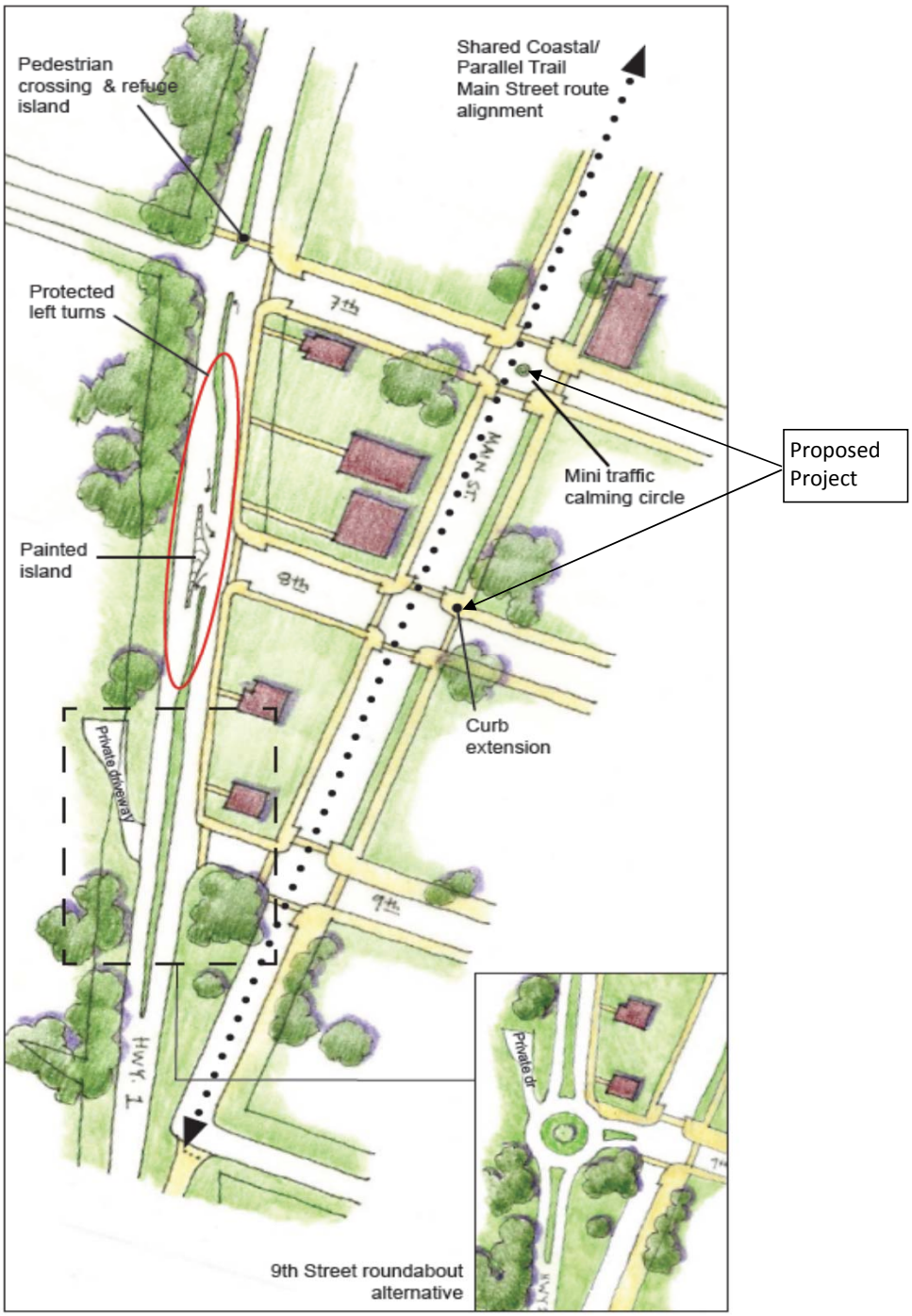
Project Number **17**

Planning Engineering (TE)	$ 30,000
Preliminary Engineering (Design/Survey)*	$ 100,000
Utility Coordination (Design)	$ 30,000
Environmental (Environmental, Real Property)	$ 30,000
R/W Engineering (Survey)	$ -
Real Property Labor	$ -
R/W Acquisition	$ -
Construction Engineering *	$ 50,000
Environmental Monitoring and Mitigation Fees	$ -
SUBTOTAL of OTHER COSTS (ALL)	$ 240,000

Contract Items	$ 245,300
Other Costs (CON)	$ 50,000
Contingency*	$ 37,000
Subtotal (Contract Items)	$ 332,300
Subtotal (Plan)	$ 30,000
Subtotal (PE)	$ 160,000
Subtotal (R/W)	$ -
Grand Total	$ 522,300
Current Year	2015
Escalation Year	2015
Escalation Rate	0.0%
➢ **TOTAL (in 2015 dollars)**	**$ 522,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)
* Construction Engineering is 15% of contract items. ($20,000 min.)
* CONTINGENCY is 15% of contract items. ($10,000 min.)

Project 17: Main Street Traffic Calming



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Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **R18**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: Carlos Street Traffic Calming

Project Location: Carlos Street from Etheldore Street to California Avenue in Moss Beach

Description

The project would stripe formal diagonal parking and parallel parking along Carlos Street, which functions as the community's main street. In addition, a continuous sidewalk would be constructed along the north side of the roadway, and crosswalks striped at the interesection of Carlos and California. Curb and gutter would be constructed along the south side of the roadway. One or both utility poles on the north side of the roadway may need to be relocated; this cost is not assumed in this estimate.

Project Length (ft): 490

Date of Estimate: Feb. 6, 2015

Prepared by: T. Krakow

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
1	Surveying	1	LS	$30,000.00	$ 30,000
2	Construct new concrete sidewalk	840	SF	$7.50	$ 6,300
3	Curb & Gutter for new sidewalk	630	LF	$35.00	$ 22,050
4	ADA curb ramp	2	EA	$3,000.00	$ 6,000
5	Striping	634	LF	$3.00	$ 1,902
6	Construction area Signs	1	LS	$1,500.00	$ 1,500
7	Misc. drainage improvements	1	LS	$7,600.00	$ 7,600
8	Mobilization	1	LS	$ 7,500.00	$ 7,500

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 75,000

Project Number **18**

Planning Engineering (TE)	$ 30,000	Contract Items	$ 82,500
Preliminary Engineering (Design/Survey)*	$ 100,000	Other Costs (CON)	$ 20,000
Utility Coordination (Design)	$ 30,000	Contingency*	$ 13,000
Environmental (Environmental, Real Property)	$ 30,000	Subtotal (Contract Items)	$ 115,500
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ 30,000
Real Property Labor	$ -	Subtotal (PE)	$ 160,000
R/W Acquisition	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ 20,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 210,000		
		Grand Total	$ 305,500
		Current Year	2015
		Escalation Year	2015
		Escalation Rate	0.0%
		➢ **TOTAL (in 2015 dollars)**	**$ 306,000**

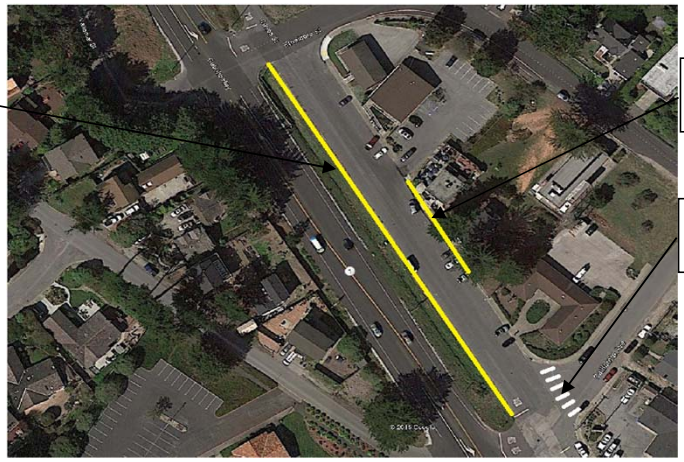
* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 15% of contract items. ($10,000 min.)

Project 18: Carlos Street Traffic Calming

Stripe diagonal and parallel parking



New curb

New sidewalk and curb

New crosswalk and curb ramps

DKS Associates — Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612 — **Project Number** **R19**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.
☐ Click here if this project is a surface treatment or overlay project.

Project Name: SR-92 Left Turn Lanes
Project Location: Half Moon Bay

Description: This project will provide left turn pockets in select locations to enhance business access and promote safe, efficient highway traffic flow.

Project Length (ft): Varies

Date of Estimate: Feb. 9, 2015

Prepared by: T. Krakow

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
1	Clearing and grubbing	11	SF/LF	$0.50	$ 5.50
2	Earthwork	11	SF/LF	$2.00	$ 22.00
3	Class 2 Aggregate Base	0.81	CY/LF	$65.00	$ 53
4	Hot Mix Asphalt (Type A)	0.54	Ton/LF	$110.00	$ 60
5	Curb & Gutter	0	LF/LF	$35.00	$ -
6	Striping	2	LF/LF	$3.00	$ 6
7	Misc. Drainage Modifications	1	LF/LF	$29.27	$ 29.27
				Cost Per Linear Foot:	$ 148.13
8	Left Turn Pocket #1 Berta's Fruit Farm	250	LF	$ 148.13	$ 37,032
9	Left Turn Pocket #2 Lemos Farm	250	LF	$ 148.13	$ 37,032
10	Left Turn Pocket #3	250	LF	$ 148.13	$ 37,032
11	Left Turn Pocket #4	0	LF	$ 148.13	$ -
12	Temporary traffic control	1	LF/LF	$5,554.86	$ 5,554.86
13	Prepare Water Pollution Control Plan	1	LS	$6,000.00	$ 6,000.00
14	Surveying	1	LS	$30,000.00	$ 30,000.00
15	Mobilization	1	LS	$ 15,300.00	$ 15,300

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 153,000

Project Number **19**

Planning Engineering (TE)	$ 30,000
Preliminary Engineering (Design/Survey)*	$ 100,000
Utility Coordination (Design)	$ 30,000
Environmental (Environmental, Real Property)	$ 30,000
R/W Engineering (Survey)	$ -
Real Property Labor	$ -
R/W Acquisition	$ -
Construction Engineering *	$ 34,000
Environmental Monitoring and Mitigation Fees	$ -
SUBTOTAL of OTHER COSTS (ALL)	$ 224,000

Contract Items	$ 168,300
Other Costs (CON)	$ 34,000
Contingency*	$ 26,000
Subtotal (Contract Items)	$ 228,300
Subtotal (Plan)	$ 30,000
Subtotal (PE)	$ 160,000
Subtotal (R/W)	$ -
Grand Total	$ 418,300
Current Year	2015
Escalation Year	2015
Escalation Rate	0.0%

➢ **TOTAL (in 2015 dollars)** **$ 418,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)
* Construction Engineering is 15% of contract items. ($20,000 min.)
* CONTINGENCY is 15% of contract items. ($10,000 min.)

DKS Associates

Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **R20**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: SR-92 Passing/Climbing Lanes

Project Location: Between Half Moon Bay and San Mateo

Description

This project will provide passing/climbing lanes along select segments of SR-92 to alleviate truck-induced bottlenecks. This will improve the operations and safety of the highway.

Project Length (ft): Varies

Date of Estimate: Feb. 9, 2015

Prepared by: T. Krakow

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
1	Clearing and grubbing	18	SF/LF	$0.50	$ 9.00
2	Earthwork	18	SF/LF	$4.00	$ 72.00
3	Class 2 Aggregate Base	1.33	CY/LF	$65.00	$ 87
4	Hot Mix Asphalt (Type A)	0.89	Ton/LF	$110.00	$ 98
5	Curb & Gutter	0	LF/LF	$35.00	$ -
6	Striping	2	LF/LF	$3.00	$ 6
7	Misc. Drainage Modifications	1	LF/LF	$54.34	$ 54.34
				Cost Per Linear Foot:	$ 245.01
8	Passing Lane #1	3000	LF	$ 245.01	$ 735,036
9	Passing Lane #2	0	LF	$ 245.01	$ -
10	Passing Lane #3	0	LF	$ 245.01	$ -
11	Passing Lane #4	0	LF	$ 245.01	$ -
12	Temporary traffic control	1	LF/LF	$36,751.80	$ 36,751.80
13	Prepare Water Pollution Control Plan	1	LS	$6,000.00	$ 6,000.00
14	Surveying	1	LS	$30,000.00	$ 30,000.00
15	Mobilization	1	LS	$ 80,800.00	$ 80,800

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 808,000

Project Number **32**

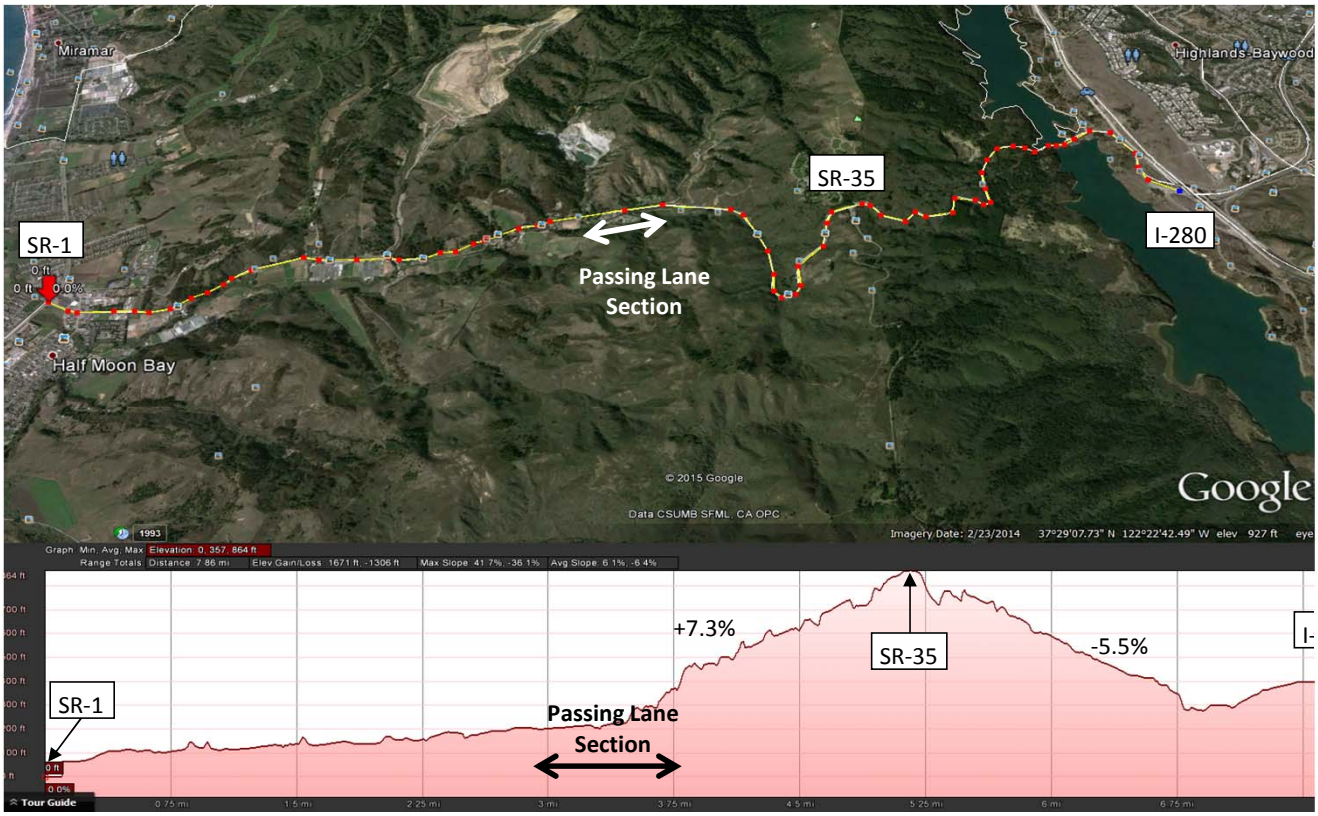
Planning Engineering (TE)	$ 81,000	Contract Items	$ 888,800
Preliminary Engineering (Design/Survey)*	$ 134,000	Other Costs (CON)	$ 134,000
Utility Coordination (Design)	$ 73,504	Contingency*	$ 134,000
Environmental (Environmental, Real Property)	$ 73,504	Subtotal (Contract Items)	$ 1,156,800
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ 81,000
Real Property Labor	$ -	Subtotal (PE)	$ 281,007
R/W Acquisition	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ 134,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 496,007		
		Grand Total	$ 1,518,807
		Current Year	2015
		Escalation Year	2015
		Escalation Rate	0.0%
		➢ **TOTAL (in 2015 dollars)**	**$ 1,519,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 15% of contract items. ($10,000 min.)

Project 20: SR-92 Passing/Climbing Lanes



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Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **R21**

☐ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.
☐ Click here if this project is a surface treatment or overlay project.

Project Name: SR-92 Truck Signs
Project Location: Between Pilarcitos Creek and SR-35

Description: Project will two additional install R4-5 ("TRUCKS USE RIGHT LANE") signs at two locations on SR-92 Eastbound:
-Prior to the horizontal curve just east of Pilarcitos Creek
-Before the start of the retaining wall section between Pilarcitos Creek and SR-35

Project Length (ft): N/A

Date of Estimate: Jan. 7, 2016

Prepared by: C. Shew

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
1	Install R4-5 Sign	2	EA	$250.00	$ 500
2	Mobilization	1	LS	$ 100.00	$ 100

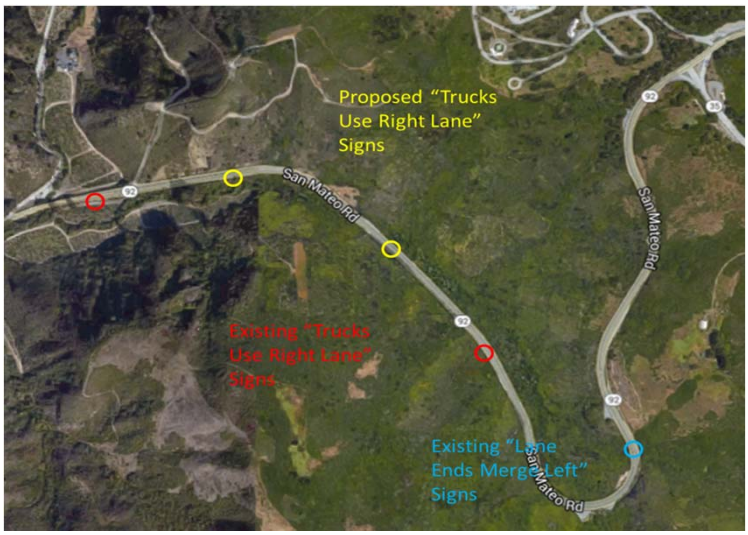
CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 1,000

Project Number **21**

Planning Engineering (TE)	$ -	Contract Items	$ 1,100
Preliminary Engineering (Design/Survey)*	$ -	Other Costs (CON)	$ -
Utility Coordination (Design)	$ -	Contingency*	$ 1,000
Environmental (Environmental, Real Property)	$ -	Subtotal (Contract Items)	$ 2,100
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ -
Real Property Labor	$ -	Subtotal (PE)	$ -
R/W Acquisition	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ -		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ -		
		Grand Total	$ 2,100
		Current Year	2016
		Escalation Year	2016
		Escalation Rate	0.0%
		➢ **TOTAL (in 2016 dollars)**	**$ 2,000**

* CONTINGENCY is 15% of contract items.

Project 21: SR-92 Truck Signs



R4-5

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Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **B1**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: Striped Pedestrian Crossing with Beacons

Project Location: Various

Description

Project would install striped (high visibility) pedestrian crossings with flashing beacons to alert traffic at high demand/bus stop locations. The 17 locations include: Montara State Beach, 2nd Street, 7th Street, Moss Beach Lighthouse (16th Street), Virginia Street, California Street, Cypress Avenue, Half Moon Bay Airport, North Capistrano Road, Surfer's Beach Parking Area north of Coronado Street, Medio Avenue, Mirada Road, Kehoe Avenue, Terrace Avenue/Grand Boulevard, Quarry Road (along SR-92), Pilarcitos Creek Road (along SR-92), and SR-35 (along SR-92). The cost (per location) is shown below.

Project Length (ft): N/A

Date of Estimate: Feb. 18, 2015

Prepared by: T. Krakow

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
1	Stripe high visibility (zebra) crosswalk	1	EA	$1,500.00	$ 1,500
2	Ped-activated flashing beacon installation	2	EA	$18,400.00	$ 36,800
3	Install pedestrian crossing warning signs	2	EA	$250.00	$ 500
4	Additional signs	2	EA	$250.00	$ 500
5	Traffic control	1	LS	$5,000.00	$ 5,000
6	Water pollution control	1	LS	$3,000.00	$ 3,000
7	Mobilization	1	LS	$ 4,700.00	$ 4,700

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 47,000

Project Number **B1**

Planning Engineering (TE)	$ 12,000
Preliminary Engineering (Design/Survey)*	$ 26,000
Utility Coordination (Design)	$ 15,000
Environmental (Environmental, Real Property)	$ 15,000
R/W Engineering (Survey)	$ -
Real Property Labor	$ -
R/W Acquisition	$ -
Construction Engineering *	$ 20,000
Environmental Monitoring and Mitigation Fees	$ -
SUBTOTAL of OTHER COSTS (ALL)	$ 88,000

Contract Items	$ 51,700
Other Costs (CON)	$ 20,000
Contingency*	$ 10,000
Subtotal (Contract Items)	$ 81,700
Subtotal (Plan)	$ 12,000
Subtotal (PE)	$ 56,000
Subtotal (R/W)	$ -
Grand Total	$ 149,700
Current Year	2015
Escalation Year	2015
Escalation Rate	0.0%

* Preliminary Engineering is minimum 25% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 15% of contract items. ($10,000 min.)

➢ **TOTAL (in 2015 dollars)** **$ 150,000** per location

Project B1: Striped Pedestrian Crossing with Beacons

Crossing Locations:
Gray Whale Cove
Montara State Beach
2nd Street (median refuge, no flashing beacon)
7th Street
Moss Beach Lighthouse (16th Street)
Half Moon Bay Airport
North Capistrano Road
Surfer's Beach Parking Area, north of Coronado Street
Between Magellan Avenue and Medio Avenue
Mirada Road
Purisima Way
Redondo Beach Road
Quarry Road (along SR-92)
Pilarcitos Creek Road (along SR-92)
SR-35 (along SR-92)

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Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **B2A**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: SR-1 Natural Pathway (Phase A)

Project Location: Half Moon Bay to Montara

Description

Project will provide a natural pathway along Highway 1 for pedestrian safety. This project uses the same segments identified in roadway improvement projects 4A, 4B, and 4C. Phase A improvements of Project 2 will be implemented during Alternative 1, whereas Phase B and C improvements will be implemented during Alternatives 2 and 3.

Project Length (ft): Varies

Date of Estimate: Feb. 18, 2015

Prepared by: T. Krakow

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
A	Construct natural pathway	1	LF/LF	$24.00	$ 24.00
B	Temporary traffic control	1	LF/LF	$3.50	$ 3.50
C	Prepare Water Pollution Control Plan	1	LF/LF	$1.50	$ 1.50
D	Clearing and grubbing	1	LF/LF	$3.00	$ 3.00
E	Surveying	1	LF/LF	$3.00	$ 3.00
F	Misc. Drainage Modifications	1	LF/LF	$2.40	$ 2.40
				Cost Per Linear Foot:	$ 37.40
1	Half Moon Bay Seg.- Terrace Ave to Seymour St	7350	LF	$ 37.40	$ 274,890
2	El Granada Seg.- Capistrano Rd to Coronado St	4460	LF	$ 37.40	$ 166,804
3	Moss Beach Seg.- California Ave to Cypress Ave	1430	LF	$ 37.40	$ 53,482
4	Montara Seg.- between 7th St and 9th St	545	LF	$ 37.40	$ 20,383
5	Mobilization	1	LS	$ 51,600.00	$ 51,600

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 516,000

Project Number **B2A**

Planning Engineering (TE)	$ 52,000	Contract Items	$ 567,600
Preliminary Engineering (Design/Survey)*	$ 100,000	Other Costs (CON)	$ 86,000
Utility Coordination (Design)	$ 30,000	Contingency*	$ 142,000
Environmental (Environmental, Real Property)	$ 30,000	Subtotal (Contract Items)	$ 795,600
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ 52,000
Real Property Labor	$ -	Subtotal (PE)	$ 160,000
R/W Acquisition	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ 86,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 298,000		
		Grand Total	$ 1,007,600
		Current Year	2015
		Escalation Year	2015
		Escalation Rate	0.0%
		➢ **TOTAL (in 2015 dollars)**	**$ 1,008,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 25% of contract items. ($10,000 min.)

DKS Associates

Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **B2B**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: SR-1 Natural Pathway (Phase B)

Project Location: Half Moon Bay to Montara

Description

Project will provide a natural pathway along Highway 1 for pedestrian safety. This project uses the same segments identified in roadway improvement projects 4A, 4B, and 4C. Phase B improvements of Project 2 will be implemented during Alternative 2, whereas Phase A and C improvements were/will be implemented during Alternatives 1 and 3.

Project Length (ft): Varies

Date of Estimate: Feb. 18, 2015

Prepared by: T. Krakow

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
A	Construct natural pathway	1	LF/LF	$24.00	$ 24.00
B	Temporary traffic control	1	LF/LF	$3.50	$ 3.50
C	Prepare Water Pollution Control Plan	1	LF/LF	$1.50	$ 1.50
D	Clearing and grubbing	1	LF/LF	$3.00	$ 3.00
E	Surveying	1	LF/LF	$3.00	$ 3.00
F	Misc. Drainage Modifications	1	LF/LF	$2.40	$ 2.40
				Cost Per Linear Foot:	$ 37.40
1	Half Moon Bay Seg.- Seymour to Redondo Bch & Ter	8930	LF	$ 37.40	$ 333,982
2	El Granada Seg.- Coronado St to Medio Ave & Capistr	4800	LF	$ 37.40	$ 179,520
3	Moss Beach Seg.- Cypress Ave to Etheldore St	1720	LF	$ 37.40	$ 64,328
4	Montara Seg.- between 1st St and 7th St	1570	LF	$ 37.40	$ 58,718
5	Mobilization	1	LS	$ 63,700.00	$ 63,700

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 637,000

Project Number **B2B**

Planning Engineering (TE)	$ 64,000	Contract Items	$ 700,700
Preliminary Engineering (Design/Survey)*	$ 106,000	Other Costs (CON)	$ 106,000
Utility Coordination (Design)	$ 30,000	Contingency*	$ 176,000
Environmental (Environmental, Real Property)	$ 30,000	Subtotal (Contract Items)	$ 982,700
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ 64,000
Real Property Labor	$ -	Subtotal (PE)	$ 166,000
R/W Acquisition	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ 106,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 336,000		
		Grand Total	$ 1,212,700
		Current Year	2015
		Escalation Year	2015
		Escalation Rate	0.0%
		➢ **TOTAL (in 2015 dollars)**	**$ 1,213,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 25% of contract items. ($10,000 min.)

DKS Associates

Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **B2C**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: SR-1 Natural Pathway (Phase C)

Project Location: Half Moon Bay to Montara

Description

Project will provide a natural pathway along Highway 1 for pedestrian safety. This project uses the same segments identified in roadway improvement projects 4A, 4B, and 4C. Phase C improvements of Project 2 will be implemented during Alternative 3, whereas Phase A and B improvements were previously implemented during Alternatives 1 and 2.

Project Length (ft): Varies

Date of Estimate: Feb. 18, 2015

Prepared by: T. Krakow

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
A	Construct natural pathway	1	LF/LF	$24.00	$ 24.00
B	Temporary traffic control	1	LF/LF	$3.50	$ 3.50
C	Prepare Water Pollution Control Plan	1	LF/LF	$1.50	$ 1.50
D	Clearing and grubbing	1	LF/LF	$3.00	$ 3.00
E	Surveying	1	LF/LF	$3.00	$ 3.00
F	Misc. Drainage Modifications	1	LF/LF	$2.40	$ 2.40
				Cost Per Linear Foot:	$ 37.40
1	Half Moon Bay Seg.- Redondo Bch to Miramntes Pt R	8820	LF	$ 37.40	$ 329,868
2	El Granada Seg.- Medio Ave to Mirada Rd	1240	LF	$ 37.40	$ 46,376
3	Moss Beach Seg.- Carlos St to California Ave	3220	LF	$ 37.40	$ 120,428
4	Montara Seg.- between 9th St and 14th St	1345	LF	$ 37.40	$ 50,303
5	Mobilization	1	LS	$ 54,700.00	$ 54,700

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 547,000

Project Number **B2C**

Planning Engineering (TE)	$ 55,000	Contract Items	$ 601,700
Preliminary Engineering (Design/Survey)*	$ 100,000	Other Costs (CON)	$ 91,000
Utility Coordination (Design)	$ 30,000	Contingency*	$ 151,000
Environmental (Environmental, Real Property)	$ 30,000	Subtotal (Contract Items)	$ 843,700
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ 55,000
Real Property Labor	$ -	Subtotal (PE)	$ 160,000
R/W Acquisition	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ 91,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 306,000		
		Grand Total	$ 1,058,700
		Current Year	2015
		Escalation Year	2015
		Escalation Rate	0.0%
		➢ **TOTAL (in 2015 dollars)**	**$ 1,059,000**

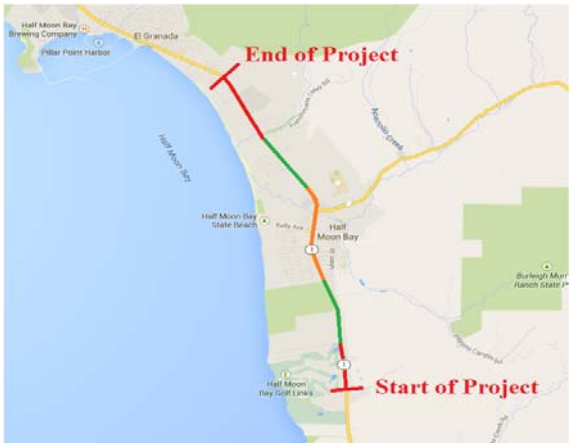
* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 25% of contract items. ($10,000 min.)

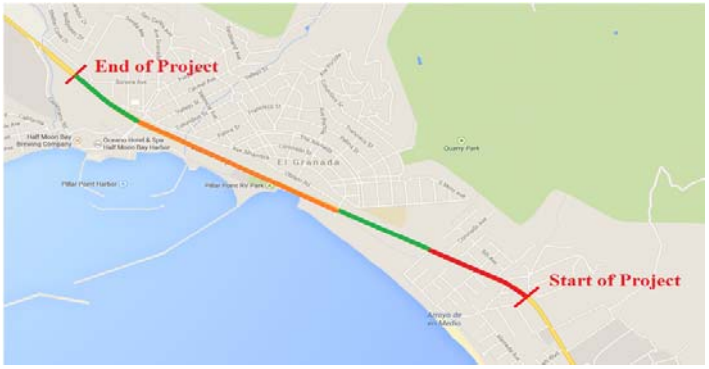
Project B2: SR-1 Sidewalk

Half Moon Bay Segment

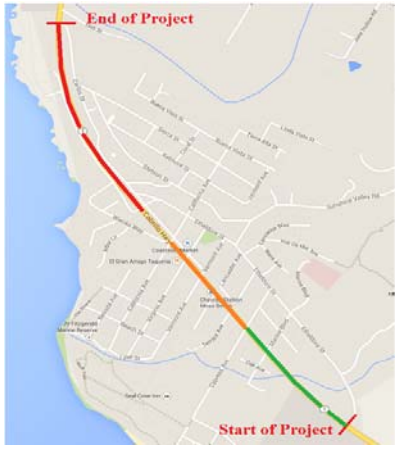


Phase A Improvement
Phase B Improvement
Phase C Improvement

El Granada Segment



Moss Beach Segment



Montara Segment

DKS Associates

Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **B3**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: Coronado Street and Ave Alhambra Sidewalk

Project Location: Ave Alhambra/Coronado Street from SR-1 to Capistrano Road

Description: Project will provide a consistent 6' concrete sidewalk along Avenue Alhambra for pedestrian safety, filling in gaps in the existing network.

Project Length (ft): 4770

Date of Estimate: Feb. 19, 2015

Prepared by: T. Krakow

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
1	Clearing and grubbing	19680	SF	$0.50	$ 9,840.00
2	Sidewalk	19680	SF	$7.50	$ 147,600.00
3	New ADA curb ramps	46	EA	$3,000.00	$ 138,000.00
4	Temporary traffic control	1	LS	$ 30,000.00	$ 30,000
5	Prepare Water Pollution Control Plan	1	EA	$6,000.00	$ 6,000
6	Misc. Drainage Modifications	1	LS	$31,488.00	$ 31,488.00
7	Mobilization	1	LS	$ 36,300.00	$ 36,300

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 363,000

Project Number **B3**

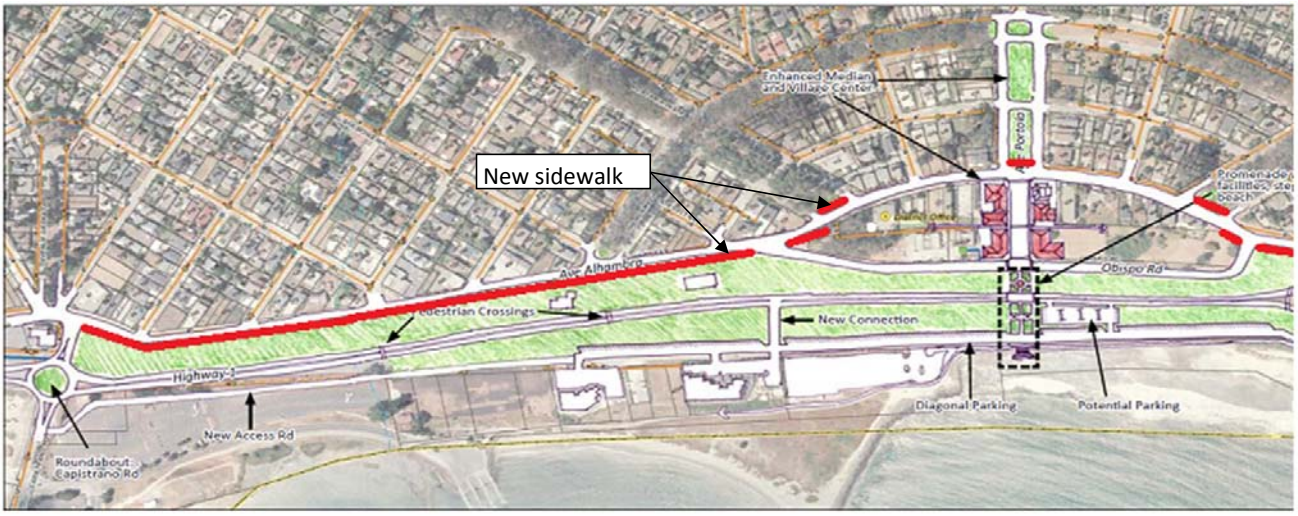
Planning Engineering (TE)	$ 37,000	Contract Items	$ 399,300
Preliminary Engineering (Design/Survey)*	$ 100,000	Other Costs (CON)	$ 80,000
Utility Coordination (Design)	$ 36,293	Contingency*	$ 60,000
Environmental (Environmental, Real Property)	$ 36,293	Subtotal (Contract Items)	$ 539,300
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ 37,000
Real Property Labor	$ -	Subtotal (PE)	$ 172,586
R/W Acquisition	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ 80,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 289,586		
		Grand Total	$ 748,886
		Current Year	2015
		Escalation Year	2015
		Escalation Rate	0.0%
		➢ **TOTAL (in 2015 dollars)**	**$ 749,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 15% of contract items. ($10,000 min.)

Project B3: Coronado Street and Ave Alhambra Sidewalk



DKS Associates — **Planning Cost Estimate**

1970 Broadway Ste 740, Oakland CA 94612 — **Project Number** **B6**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.
☐ Click here if this project is a surface treatment or overlay project.

Project Name: Traffic Signal Updates
Project Location: Half Moon Bay

Description

Project will update all traffic signals in Half Moon Bay to provide pedestrian countdown indicators on all signalized crosswalks, adjust signal timing to accommodate slower walking speeds, install bicycle detection equipment, and provide pedestrian refuge spaces on wide road crossings. The cost (per location) is shown below.

Project Length (ft): N/A

Date of Estimate: Feb. 11, 2015

Prepared by: T. Krakow

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
1	Install pedestrian countdown indicators	1	LS	$ 5,000.00	$ 5,000
2	Adjust signal timing	1	LS	$ 1,500.00	$ 1,500
3	Install bicycle detection	1	LS	$ 10,000.00	$ 10,000
4	Upgrades (curb ramps, median refuge, etc.)	1	LS	$ 5,000.00	$ 5,000
6	Temporary traffic control	1	LS	$ 2,000.00	$ 2,000
7	Prepare Water Pollution Control Plan	1	EA	$6,000.00	$ 6,000
8	Mobilization	1	LS	$ 3,000.00	$ 3,000

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 30,000

Project Number **B6**

Planning Engineering (TE)	$ 30,000	Contract Items	$ 33,000
Preliminary Engineering (Design/Survey)*	$ 50,000	Other Costs (CON)	$ 20,000
Utility Coordination (Design)	$ 30,000	Contingency*	$ 10,000
Environmental (Environmental, Real Property)	$ 30,000	Subtotal (Contract Items)	$ 63,000
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ 30,000
Real Property Labor	$ -	Subtotal (PE)	$ 110,000
R/W Acquisition	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ 20,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 160,000	Grand Total	$ 203,000
		Current Year	2015
		Escalation Year	2015
		Escalation Rate	0.0%
		➢ **TOTAL (in 2015 dollars)**	**$ 203,000** per location

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)
* Construction Engineering is 15% of contract items. ($20,000 min.)
* CONTINGENCY is 15% of contract items. ($10,000 min.)

Project B6: Traffic Signal Updates

DKS Associates

Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **B7**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: Capistrano Road Bicycle Facilities

Project Location: Capistrano Road from North Terminus at SR-1 to South Terminus at SR-1

Description

Along the rural/fringe segment (between the north terminus at the Mezzaluna Restaurant parking lot), the roadway would be widened from 23' to 40' to provide 12' travel lanes with an 8' shoulder/Class II bike lane. Along the urban segment (between the Mezzaluna Restaurant parking lot and the south terminus), the roadway would be striped with sharrows and signed as a Class III bike route. The existing right of way

Project Length (ft): 3880

Date of Estimate: Feb. 19, 2015

Prepared by: T. Krakow

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
Between North Terminus at SR-1 and Mezzaluna Parking Lot					
1	Clearing and grubbing	28900	SF	$0.50	$ 14,450
2	Earthwork	28900	SF	$2.00	$ 57,800
3	Class 2 Aggregate Base	2141	CY	$65.00	$ 139,148
4	Hot Mix Asphalt (Type A)	1431	Ton	$110.00	$ 157,361
5	Striping	7760	LF	$3.00	$ 23,280
Between Mezzaluna Parking Lot and South Terminus at SR-1					
6	Restripe roadway to provide 5' bike lanes	4360	LF	$3.00	$ 13,080
7	Temporary traffic control	1	LS	$20,300.00	$ 20,300
8	Prepare Water Pollution Control Plan	1	LS	$6,000.00	$ 6,000
9	Mobilization	1	LS	$ 43,100.00	$ 43,100

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 431,000

Project Number **B7**

Planning Engineering (TE)	$ 44,000	Contract Items	$ 474,100
Preliminary Engineering (Design/Survey)*	$ 100,000	Other Costs (CON)	$ 95,000
Utility Coordination (Design)	$ 40,512	Contingency*	$ 72,000
Environmental (Environmental, Real Property)	$ 40,512	Subtotal (Contract Items)	$ 641,100
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ 44,000
Real Property Labor	$ -	Subtotal (PE)	$ 181,024
R/W Acquisition	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ 95,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 320,024		
		Grand Total	$ 866,124
		Current Year	2015
		Escalation Year	2015
		Escalation Rate	0.0%
		➢ **TOTAL (in 2015 dollars)**	**$ 866,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 15% of contract items. ($10,000 min.)

Project B7: Capistrano Road Bicycle Facilities

DKS Associates

Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **12**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: Airport Street Class III Bike Routes

Project Location: Airport Street from Cypress Avenue to Harvard Avenue

Description: This project would widen Airport Street to provide 12' travel lanes, 8' shoulders/bike lanes between Cypress Avenue and Stanford Avenue, and 5' bike lanes from Stanford Avenue to Harvard Avenue.

Project Length (ft): 8710

Date of Estimate: Feb. 19, 2015

Prepared by: T. Krakow

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
1	Restripe roadway to provide 5' bike lanes	4360	LF	$3.00	$ 13,080
2	Temporary traffic control	1	LS	$0.00	$ -
3	Prepare Water Pollution Control Plan	1	LS	$6,000.00	$ 6,000
4	Mobilization	1	LS	$ 1,900.00	$ 1,900

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 19,000

Project Number **12**

Planning Engineering (TE)	$ 30,000	Contract Items	$ 19,000
Preliminary Engineering (Design/Survey)*	$ 100,000	Other Costs (CON)	$ 20,000
Utility Coordination (Design)	$ 30,000	Contingency*	$ 10,000
Environmental (Environmental, Real Property)	$ 30,000	Subtotal (Contract Items)	$ 49,000
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ 30,000
Real Property Labor	$ -	Subtotal (PE)	$ 160,000
R/W Acquisition	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ 20,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 210,000		
		Grand Total	$ 239,000
		Current Year	2015
		Escalation Year	2015
		Escalation Rate	0.0%
		➢ **TOTAL (in 2015 dollars)**	**$ 239,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 15% of contract items. ($10,000 min.)

#REF!

DKS Associates

Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **B9**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: SR-92 Bike Lanes

Project Location: Between Half Moon Bay and San Mateo

Description: This project will provide Class II bike lanes along segments of SR-92 to enhance bicyclist safety.

Project Length (ft): Varies

Date of Estimate: Feb. 19, 2015

Prepared by: T. Krakow

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
1	Clearing and grubbing	16	SF/LF	$0.50	$ 8.00
2	Earthwork	16	SF/LF	$4.00	$ 64.00
3	Class 2 Aggregate Base	1.19	CY/LF	$65.00	$ 77.04
4	Hot Mix Asphalt (Type A)	0.79	Ton/LF	$110.00	$ 87.12
5	Striping	2	LF/LF	$3.00	$ 6.00
6	Misc. Drainage Modifications	1	LF/LF	$48.43	$ 48.43
				Cost Per Linear Foot:	$ 290.59
7	Bike Lane Segment #1 Main St to SR-35	36325	LF	$ 290.59	$ 10,555,625
8	Bike Lane Segment #2	0	LF	$ 290.59	$ -
9	Bike Lane Segment #3	0	LF	$ 290.59	$ -
10	Bike Lane Segment #4	0	LF	$ 290.59	$ -
11	Temporary traffic control	1	LF/LF	$527,781.26	$ 527,781.26
12	Prepare Water Pollution Control Plan	1	LS	$6,000.00	$ 6,000.00
13	Surveying	1	LS	$30,000.00	$ 30,000.00
14	Mobilization	1	LS	$ 1,111,900.00	$ 1,111,900

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 11,119,000

Project Number **B9**

Planning Engineering (TE)	$ 1,112,000
Preliminary Engineering (Design/Survey)*	$ 1,835,000
Utility Coordination (Design)	$ 1,055,563
Environmental (Environmental, Real Property)	$ 1,055,563
R/W Engineering (Survey)	$ -
Real Property Labor	$ -
R/W Acquisition	$ -
Construction Engineering *	$ 1,835,000
Environmental Monitoring and Mitigation Fees	$ -
SUBTOTAL of OTHER COSTS (ALL)	$ 6,893,125

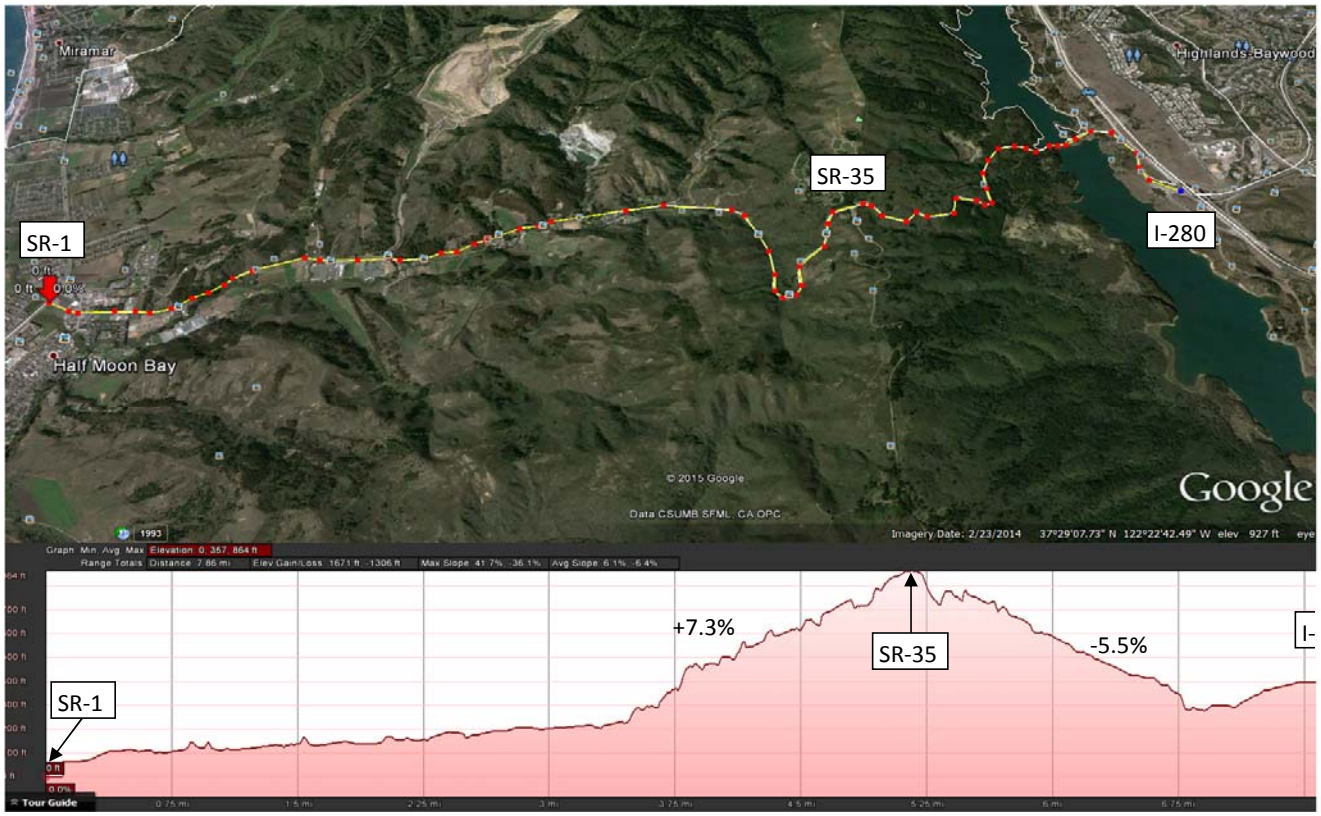
Contract Items	$ 12,230,900
Other Costs (CON)	$ 1,835,000
Contingency*	$ 1,835,000
Subtotal (Contract Items)	$ 15,900,900
Subtotal (Plan)	$ 1,112,000
Subtotal (PE)	$ 3,946,125
Subtotal (R/W)	$ -
Grand Total	$ 20,959,025
Current Year	2015
Escalation Year	2015
Escalation Rate	0.0%
➢ **TOTAL (in 2015 dollars)**	**$ 20,959,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 15% of contract items. ($10,000 min.)

Project B9: SR-92 Bike Lanes



DKS Associates

Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **B10**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: SR-1 Bike Lanes

Project Location: SR-1 between Miramontes Point Road (Half Moon Bay) and the Montara Mountain Trailhead

Description

This project will provide Class II bike lanes along SR-1 from Miramontes Point Road (south Half Moon Bay) to the Montara Mountain Trailhead. From Half Moon Bay to Montara, the shoulder is adequate to stripe bike lanes without additional widening. North of Montara, the roadway will be widened to provide a paved shoulder and the bike lanes. Treatments will be provided at signalized intersections to widen the approach to shift the bicycle lane to the left of the right turn lane, where applicable.

Project Length (ft): Varies

Date of Estimate: Jan. 7, 2016

Prepared by: C. Shew

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
A	Clearing and grubbing	10	SF/LF	$0.50	$ 5.00
B	Earthwork	10	SF/LF	$4.00	$ 40.00
C	Class 2 Aggregate Base	0.74	CY/LF	$65.00	$ 48.15
D	Hot Mix Asphalt (Type A)	0.50	Ton/LF	$110.00	$ 54.45
E	Stripe bike lanes and pavement markings	2	LF/LF	$3.00	$ 6.00
F	Misc. Drainage Modifications	1	LF/LF	$30.72	$ 30.72
				Cost Per Linear Foot (Widening and Striping):	$ 184.32
G	Stripe bike lanes and pavement markings	2	LF/LF	$3.00	$ 6.00
				Cost Per Linear Foot (Striping Only):	$ 6.00
H	Clearing and grubbing	1000	SF	$0.50	$ 500.00
I	Earthwork	1000	SF	$4.00	$ 4,000.00
J	Class 2 Aggregate Base	74.07	CY	$65.00	$ 4,814.81
K	Hot Mix Asphalt (Type A)	49.50	Ton	$110.00	$ 5,445.00
L	Stripe bike lanes offset from right turn lane	200	LF	$3.00	$ 600.00
M	Misc. Drainage Modifications	1	LF	$3,071.96	$ 3,071.96
				Cost Per Intersection Approach (Widening and Restriping):	$ 18,431.78
1	Bike Lane Segment #1: Miramontes Point Rd (Half Moon Bay) to 7th Street (Montara)	52200	LF	$ 6.00	$ 313,200
2	Bike Lane Segment #2: 7th Street (Montara) to Montara Mountain Trailhead	4530	LF	$ 184.32	$ 834,960
3	Intersection Treatments (per Approach with Right Turn Lane)	12	EA	$ 18,431.78	$ 221,181
5	Temporary traffic control	1	LF/LF	$68,467.04	$ 68,467.04
6	Prepare Water Pollution Control Plan	1	LS	$6,000.00	$ 6,000.00
7	Mobilization	1	LS	$ 144,400.00	$ 144,400

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 1,444,000

Project Number **B10**

Planning Engineering (TE)	$ 145,000	Contract Items	$ 1,588,400
Preliminary Engineering (Design/Survey)*	$ 239,000	Other Costs (CON)	$ 239,000
Utility Coordination (Design)	$ 136,934	Contingency*	$ 239,000
Environmental (Environmental, Real Property)	$ 136,934	Subtotal (Contract Items)	$ 2,066,400
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ 145,000
Real Property Labor	$ -	Subtotal (PE)	$ 512,868

R/W Acquisition	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ 239,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 896,868		
		Grand Total	$ 2,724,268
		Current Year	2015
		Escalation Year	2015
		Escalation Rate	0.0%
		➢ **TOTAL (in 2015 dollars)**	**$ 2,724,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 15% of contract items. ($10,000 min.)

DKS Associates

Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **P1**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: Montara State Beach Parking Lot Improvements

Project Location: Northernmost Montara State Beach Parking Lot

Description: Project would improve the existing dirt parking lot by paving with pervious concrete. This solution will improve the visitor experience, drainage characteristics of the site, and is environmentally-conscious.

Project Length (ft): N/A

Date of Estimate: Feb. 23, 2015

Prepared by: T. Krakow

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
1	Earthwork	13700	SF	$2.00	$ 27,400
2	Geotextile fabric	13700	SF	$1.00	$ 13,700
3	ASTM No. 57 (drain rock) base	1015	CY	$65.00	$ 65,963
4	Pervious concrete	13700	SF	$8.00	$ 109,600
5	Concrete curb (edge restraint)	420	LF	$7.00	$ 2,940
6	Stripe parking lot	13700	SF	$0.50	$ 6,850
7	Signage	1	LS	$2,000.00	$ 2,000
8	Temporary traffic control	1	LS	$11,400.00	$ 11,400
9	Prepare Water Pollution Control Plan	1	LS	$6,000.00	$ 6,000
10	Mobilization	1	LS	$ 24,600.00	$ 24,600

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 246,000

Project Number **P1**

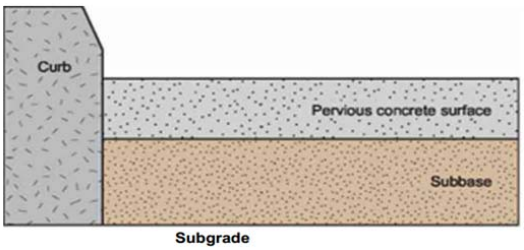
Planning Engineering (TE)	$ 30,000	Contract Items	$ 270,600
Preliminary Engineering (Design/Survey)*	$ 100,000	Other Costs (CON)	$ 55,000
Utility Coordination (Design)	$ 30,000	Contingency*	$ 41,000
Environmental (Environmental, Real Property)	$ 30,000	Subtotal (Contract Items)	$ 366,600
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ 30,000
Real Property Labor	$ -	Subtotal (PE)	$ 160,000
R/W Acquisition	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ 55,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 245,000		
		Grand Total	$ 556,600
		Current Year	2015
		Escalation Year	2015
		Escalation Rate	0.0%
		➢ **TOTAL (in 2015 dollars)**	**$ 557,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 15% of contract items. ($10,000 min.)

Project P1: Montara State Beach Parking Lot Improvements



DKS Associates

Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **P2**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: Upper Gray Whale Cove Parking Lot Improvements

Project Location: Upper Gray Whale Cove Parking Lot

Description

Project would improve the existing parking lot (which is partially paved with asphalt and partially dirt) by paving with pervious concrete. This solution will improve the pavement structure, drainage characteristics of the site, and is environmentally-conscious.

Project Length (ft): N/A

Date of Estimate: Feb. 23, 2015

Prepared by: T. Krakow

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
1	Remove existing asphalt	16000	SF	$3.00	$ 48,000
2	Earthwork	28600	SF	$2.00	$ 57,200
3	Geotextile fabric	28600	SF	$1.00	$ 28,600
4	ASTM No. 57 (drain rock) base	2119	CY	$65.00	$ 137,704
5	Pervious concrete	28600	SF	$8.00	$ 228,800
6	Concrete curb (edge restraint)	820	LF	$7.00	$ 5,740
7	Stripe parking lot	28600	SF	$0.50	$ 14,300
8	Signage	1	LS	$2,000.00	$ 2,000
9	Temporary traffic control	1	LS	$23,700.00	$ 23,700
10	Prepare Water Pollution Control Plan	1	LS	$6,000.00	$ 6,000
11	Mobilization	1	LS	$ 55,200.00	$ 55,200

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 552,000

Project Number **P2**

Planning Engineering (TE)	$ 56,000
Preliminary Engineering (Design/Survey)*	$ 100,000
Utility Coordination (Design)	$ 52,234
Environmental (Environmental, Real Property)	$ 52,234
R/W Engineering (Survey)	$ -
Real Property Labor	$ -
R/W Acquisition	$ -
Construction Engineering *	$ 92,000
Environmental Monitoring and Mitigation Fees	$ -
SUBTOTAL of OTHER COSTS (ALL)	$ 352,469

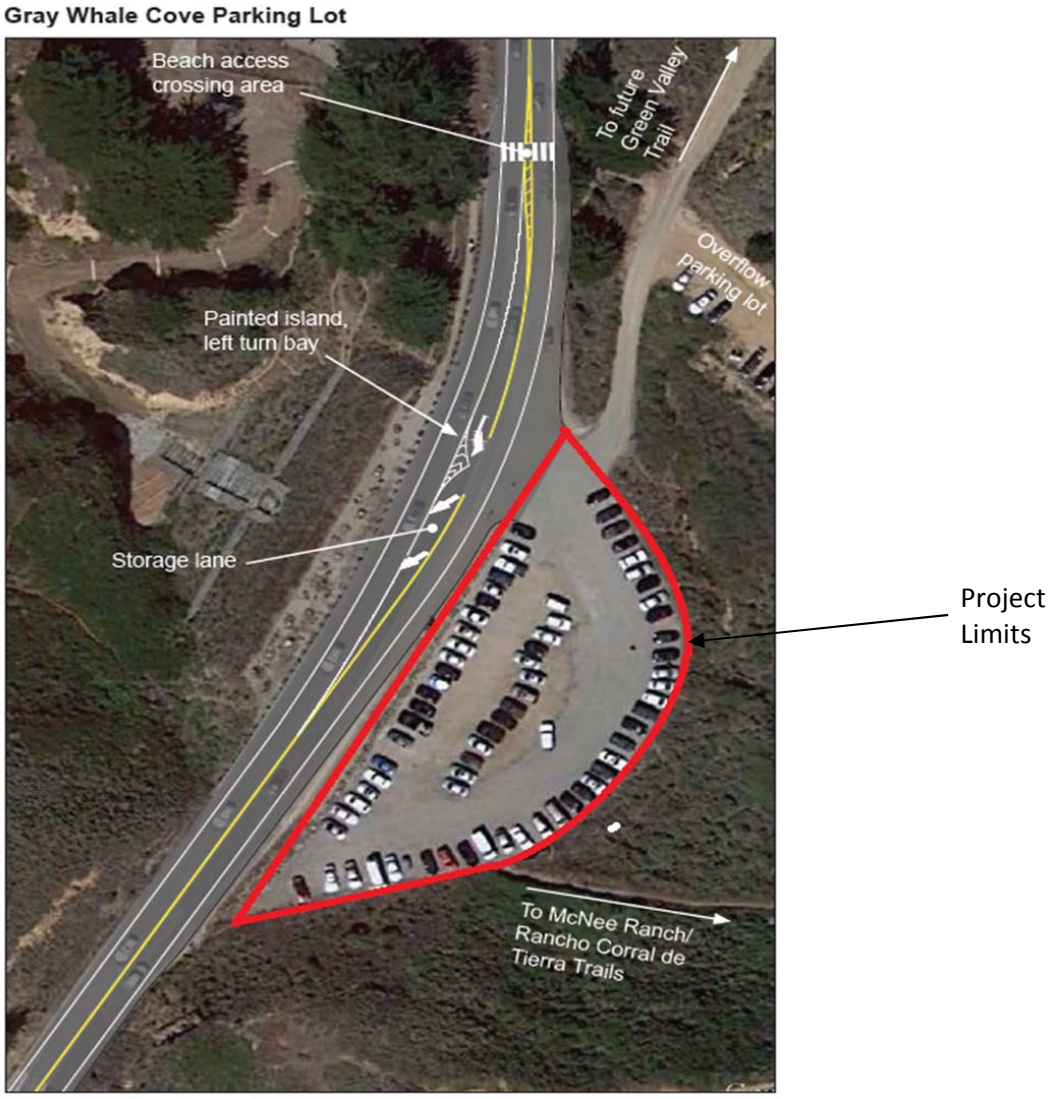
Contract Items	$ 607,200
Other Costs (CON)	$ 92,000
Contingency*	$ 92,000
Subtotal (Contract Items)	$ 791,200
Subtotal (Plan)	$ 56,000
Subtotal (PE)	$ 204,469
Subtotal (R/W)	$ -
Grand Total	$ 1,051,669
Current Year	2015
Escalation Year	2015
Escalation Rate	0.0%
➢ **TOTAL (in 2015 dollars)**	######

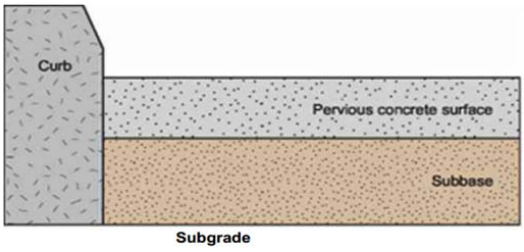
* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 15% of contract items. ($10,000 min.)

Project P2: Montara State Beach Parking Lot Improvements





DKS Associates

Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **P3**

☐ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: Wayfinding

Project Location: Midcoast and Half Moon Bay

Description: Project will install wayfinding signs to help drivers navigate and find parking. This budget assumes $100,000 in Half Moon Bay, $50,000 in Montara, and $25,000 in both Moss Beach and El Granada to implement wayfinding programs.

Project Length (ft): N/A

Date of Estimate: Feb. 23, 2015

Prepared by: T. Krakow

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
1	Install wayfinding signage	1	LS	$200,000.00	$ 200,000
2	Mobilization	1	LS	$ 20,000.00	$ 20,000

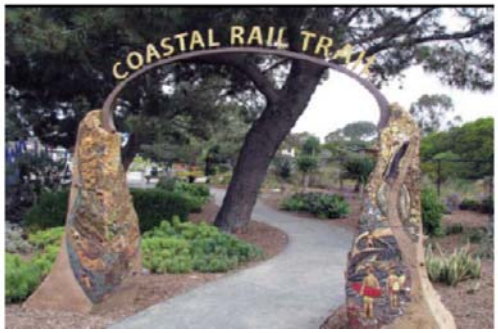
CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 200,000

Project Number **P3**

Planning Engineering (TE)	$ -	Contract Items	$ 220,000
Preliminary Engineering (Design/Survey)*	$ 50,000	Other Costs (CON)	$ -
Utility Coordination (Design)	$ -	Contingency*	$ 33,000
Environmental (Environmental, Real Property)	$ -	Subtotal (Contract Items)	$ 253,000
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ -
Real Property Labor	$ -	Subtotal (PE)	$ 50,000
R/W Acquisition	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ -		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 50,000		
		Grand Total	$ 303,000
		Current Year	2015
		Escalation Year	2015
		Escalation Rate	0.0%
		➢ **TOTAL (in 2015 dollars)**	**$ 303,000**

* CONTINGENCY is 15% of contract items. ($10,000 min.)

Project P3: Wayfinding



DKS Associates

Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **P5**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: Carlos Street On-Street Parking

Project Location: Carlos Street from Etheldore Street to California Avenue in Moss Beach

Description: The project would stripe formal diagonal parking and parallel parking along Carlos Street, which functions as Moss Beach's main street. This parking project is a companion to a roadway project which would construct a continuous sidewalk along the north side of the roadway, stripe crosswalks at the interesection of Carlos and California, and construct curb and gutter along the south side of the roadway.

Project Length (ft): 490

Date of Estimate: Feb. 23, 2015

Prepared by: T. Krakow

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
1	Stripe diagonal parking	560	LF	$3.00	$ 1,680
2	Stripe parallel parking	490	LF	$3.00	$ 1,470
3	Construction area Signs	1	LS	$1,000.00	$ 1,000
4	Mobilization	1	LS	$ 400.00	$ 400

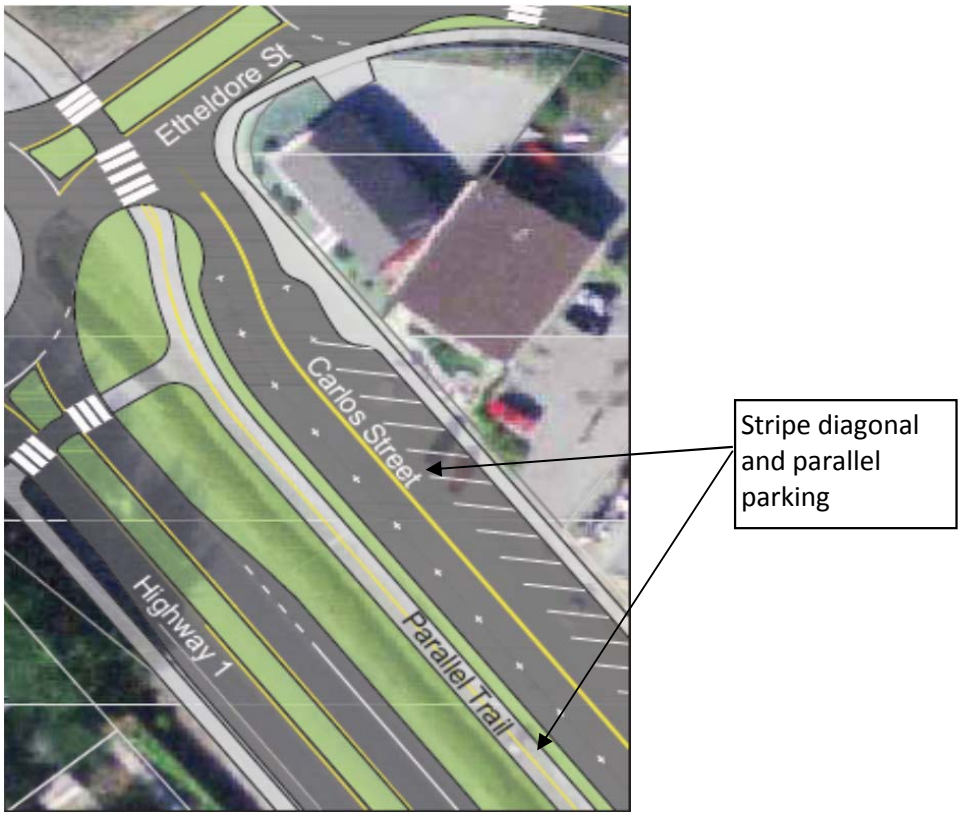
CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 4,000

Project Number **P5**

Planning Engineering (TE)	$ -	Contract Items	$ 4,400
Preliminary Engineering (Design/Survey)*	$ 20,000	Other Costs (CON)	$ -
Utility Coordination (Design)	$ -	Contingency*	$ 10,000
Environmental (Environmental, Real Property)	$ -	Subtotal (Contract Items)	$ 14,400
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ -
Real Property Labor	$ -	Subtotal (PE)	$ 20,000
R/W Acquisition	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ -		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 20,000		
		Grand Total	$ 34,400
		Current Year	2015
		Escalation Year	2015
		Escalation Rate	0.0%
		➢ **TOTAL (in 2015 dollars)**	**$ 34,000**

* CONTINGENCY is 15% of contract items. ($10,000 min.)

Project P5: Carlos Street On-Street Parking



DKS Associates

Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **P6**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☑ Click here if this project is a surface treatment or overlay project.

Project Name: El Granada Diagonal Parking

Project Location: Current SR-1 alignment from Coronado Street to Capistrano Road

Description

This project would stripe diagonal parking along the current alignment of SR-1. This parking project is a companion project to a roadway project which proposes to realign Highway 1, shifting the roadway toward the eastern edge of the Caltrans right-of-way, and away from the coastal erosion area. Another roadway project would also construct two roundabouts at the intersections of SR-1 and Coronado Street and SR-1 and Capistrano Road.

Project Length (ft): 4300

Date of Estimate: Feb. 23, 2015

Prepared by: T. Krakow

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
Construct New SR-1 Alignment (between Coronado St Roundabout and Capistrano Rd Roundabout)					
1	Stripe diagonal parking	4000	LF	$3.00	$ 12,000
2	Construction area signs	1	LS	$1,000.00	$ 1,000
3	Mobilization	1	LS	$ 1,300.00	$ 1,300

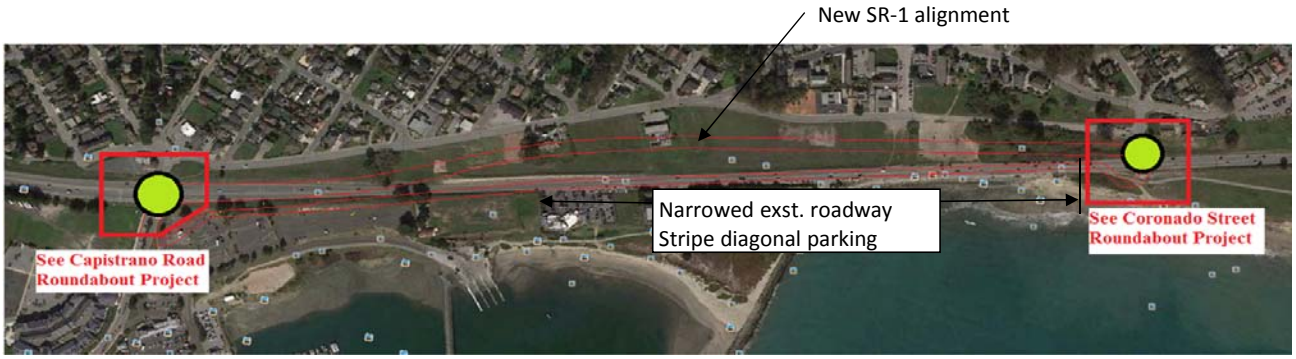
CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 13,000

Project Number **P6**

Planning Engineering (TE)	$ -	Contract Items	$ 14,300
Preliminary Engineering (Design/Survey)*	$ 30,000	Other Costs (CON)	$ -
Utility Coordination (Design)	$ -	Contingency*	$ 10,000
Environmental (Environmental, Real Property)	$ -	Subtotal (Contract Items)	$ 24,300
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ -
Real Property Labor	$ -	Subtotal (PE)	$ 30,000
R/W Acquisition	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ -		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 30,000		
		Grand Total	$ 54,300
		Current Year	2015
		Escalation Year	2015
		Escalation Rate	0.0%
		➢ **TOTAL (in 2015 dollars)**	**$ 54,000**

* CONTINGENCY is 15% of contract items. ($10,000 min.)

Project P6: El Granada Diagonal Parking



APPENDIX D – PEDESTRIAN (PEQI) AND BICYCLE (BEQI) ENVIRONMENTAL QUALITY INDEX SCORES

Buildout Conditions		Pedestrian Demand Index Score	PEQI Standard	PEQI Score (North or West)	PEQI Score (South or East)	West side Pedestrian Deficent?	East side Pedestrian Deficent?	Pedestrian Improvements needed to meet standard	BEQI Standard	BEQI Score (Single side fo st score given for side with path if present) (without Auto Volume incorporated)	Bike Deficent?	Bicycle Improvements needed to meet standard
Montara/Moss Beach	1st - Etheldor S											
	1st - 7th	30-40	61 or higher	16	16	Deficent	Deficent	Add 6ft wide ADA compliant walkways and continuous pedestrian scale lighting to both sides of street	61 or Higher	12	Deficent	Add class 1 bike path to one side of street and Add on street 6ft wide class 2 bike lanes to both sides
	7th - 9th	30-40	61 or higher	13	20	Deficent	Deficent	Add 6ft wide ADA compliant walkways and continuous pedestrian scale lighting to both sides of street	61 or Higher	16	Deficent	Add class 1 bike path to one side of street and Add on street 6ft wide class 2 bike lanes to both sides
	9th - 14th	30-40	61 or higher	19	19	Deficent	Deficent	Add 6ft wide ADA compliant walkways and continuous pedestrian scale lighting to both sides of street	61 or Higher	19	Deficent	Add class 1 bike path to one side of street and Add on street 6ft wide class 2 bike lanes to both sides
	14th - Carlos St	<20	no requirements	13	13				61 or Higher	21	Deficent	Add class 1 bike path to one side of street and Add on street 6ft wide class 2 bike lanes to both sides
	Carlos St - Vallemar/Etheldor St	20-30	41 or higher	13	13	Deficent	Deficent	Add 6ft wide ADA compliant walkways on both sides of street	61 or Higher	21	Deficent	Add class 1 bike path to one side of street and Add on street 6ft wide class 2 bike lanes to both sides
Moss Beach	Vallemar/Etheldore St - Capistrano Rd (S)											
	Vallemar - Cypress Ave	20-30	41 or higher	13	13	Deficent	Deficent	Add 6ft wide ADA compliant walkways to both sides of street	61 or Higher	21	Deficent	Add class 1 bike path to one side of street and Add on street 6ft wide class 2 bike lanes to both sides
	Marine Blvd - Capistrano Rd (N)	<20	no requirements	13	13				61 or Higher	21	Deficent	Add class 1 bike path to one side of street and Add on street 6ft wide class 2 bike lanes to both sides
	Capistrano Rd (N) - Capistrano Rd (S)	20-30	41 or higher	24	24	Deficent	Deficent	Add 6ft wide ADA compliant walkways to both sides of street	61 or Higher	19	Deficent	Add class 1 bike path to one side of street and Add on street 6ft wide class 2 bike lanes to both sides
El Granada/Miramar	Capistrano Rd (S) - Mirada Rd											
	Capistrano Rd (S) - Coronado St	20-30	41 or higher	42	31		Deficent	Add 6ft wide ADA compliant walkways to East side of Street	61 or Higher	21	Deficent	Add class 1 bike path to one side of street and Add on street 6ft wide class 2 bike lanes to both sides
	Coronado St - Magellan Ave	20-30	41 or higher	28	25	Deficent	Deficent	Add 6ft wide ADA compliant walkways to both sides of street	61 or Higher	21	Deficent	Add class 1 bike path to one side of street and Add on street 6ft wide class 2 bike lanes to both sides
	Magellan Ave - Medio Ave	20-30	41 or higher	28	25	Deficent	Deficent	Add 6ft wide ADA compliant walkways to both sides of street	61 or Higher	21	Deficent	Add class 1 bike path to one side of street and Add on street 6ft wide class 2 bike lanes to both sides
	Medio Ave - Mirada Rd	30-40	61 or higher	17	17	Deficent	Deficent	Add 6ft wide ADA compliant walkways with continuous pedestrian scale lighting to both sides of street	61 or Higher	21	Deficent	Add class 1 bike path to one side of street and Add on street 6ft wide class 2 bike lanes to both sides
North Half Moon Bay	Mirada Rd - Hwy 92											
	Mirada Rd - Roosevelt Blvd	20-30	41 or higher	32	25	Deficent	Deficent	Add 6ft wide ADA compliant walkways on both sides of street	61 or Higher	21	Deficent	Add class 1 bike path to one side of street and Add on street 6ft wide class 2 bike lanes to both sides
	Roosevelt Blvd - Young Ave	30-40	61 or higher	19	60	Deficent	Deficent	Add 6ft wide ADA compliant walkways to West side of Street and Continuous lighting to both sides of street	61 or Higher	55	Deficent	Add on street 6ft wide class 2 bike lanes to both sides of st.
	Young Ave - Ruisseau Franais Ave	20-30	41 or higher	59	26		Deficent	Add 6ft wide walkways to East side of Street	61 or Higher	55	Deficent	Add on street 6ft wide class 2 bike lanes to both sides of st.
	Ruisseau Franais Ave - Frenchmans Creek Rd	20-30	41 or higher	59	26		Deficent	Add 6ft wide ADA compliant walkways to East side of Street	61 or Higher	55	Deficent	Add on street 6ft wide class 2 bike lanes to both sides of st.
	Frenchmans Creek Rd - Grandview Blvd	20-30	41 or higher	59	26		Deficent	Add 6ft wide ADA compliant walkways to East side of Street	61 or Higher	49	Deficent	Add on street 6ft wide class 2 bike lanes to both sides of st.
	Grandview Blvd- Terrace Ave	30-40	61 or higher	59	16	Deficent	Deficent	Add 6ft wide walkways to East side of Street and Continuous lighting to both sides of street	61 or Higher	49	Deficent	Add on street 6ft wide class 2 bike lanes to both sides of st.
	Terrace Ave - Grand Blvd	20-30	41 or higher	57	23		Deficent	Add 6ft wide ADA compliant walkways to East side of Street	61 or Higher	49	Deficent	Add on street 6ft wide class 2 bike lanes to both sides of st.
	Grand Blvd - Main St	30-40	61 or higher	57	12	Deficent	Deficent	Add 6ft wide ADA compliant walkways to East side of Street and Continuous lighting to both sides of street	61 or Higher	47	Deficent	Add on street 6ft wide class 2 bike lanes to both sides of st.
	Main St - SR 92	30-40	61 or higher	61	12		Deficent	Add 6ft wide ADA compliant walkways and Continous lighting to East side of Street	61 or Higher	48	Deficent	Add on street 6ft wide class 2 bike lanes to both sides of st.
Half Moon Bay	Hwy 92 - Miramontes Point Rd											
	SR 92 - Kelly Ave	40-50	61 or higher	12	12	Deficent	Deficent	Add 6ft wide ADA compliant walkways with continuous pedestrian scale lighting to both sides of street	61 or Higher	21	Deficent	Add class 1 bike path to one side of street and Add on street 6ft wide class 2 bike lanes to both sides
	Kelly Ave - Filbert St	30-40	61 or higher	60	12	Deficent	Deficent	Add 6ft wide ADA compliant walkways to East side of Street and Continuous lighting to both sides of street	61 or Higher	48	Deficent	Add on street 6ft wide class 2 bike lanes to both sides of st.
	Filbert St - Seymour St	40-50	61 or higher	62	22		Deficent	Add ADA compliant walkways and pedestrian lighting to east side of street	61 or Higher	45	Deficent	Add on street 6ft wide class 2 bike lanes to both sides of st.
	Seymour St - Main St (S)/Higgins Canyon Rd	20-30	41 or higher	55	25		Deficent	Add 6ft wide ADA compliant walkways to East side of Street	61 or Higher	44	Deficent	Add on street 6ft wide class 2 bike lanes to both sides of st.
	Main St (S)/Higgins Canyon Rd - Fairway Dr	20-30	41 or higher	25	25	Deficent	Deficent	Add 6ft wide ADA compliant walkways on both sides of street	61 or Higher	25	Deficent	Add class 1 bike path to one side of street and Add on street 6ft wide class 2 bike lanes to both sides
	Fairway Dr - Miramontes Pt Rd	20-30	41 or higher	15	20	Deficent	Deficent	Add 6ft wide ADA compliant walkways on both sides of street	61 or Higher	22	Deficent	Add class 1 bike path to one side of street and Add on street 6ft wide class 2 bike lanes to both sides
	Miramontes Pt Rd - S HMB Border	20-30	41 or higher	15	20	Deficent	Deficent	Add 6ft wide ADA compliant walkways on both sides of street	61 or Higher	26	Deficent	Add on street 6ft wide class 2 bike lanes to both sides of st.

MEMORANDUM

TO:	Rob Bartoli, San Mateo CTMP Project Manager		
FROM:	Bill Loudon and Joshua Pilachowski, DKS Associates		
DATE:	May 20, 2016		
SUBJECT:	Response to Comments from Connect the Coastside Workshop #4	P No.	14075-000

CURRENT STATUS OF PROJECT

The DKS team developed a recommended alternative that included a range of transportation infrastructure improvements, land-use policies, and changes to standards used to identify transportation system performance deficiencies. The recommended alternative was described in detail and evaluated in the Recommended Alternative Evaluation Report and presented to the project TAC for their input. The report was revised and made public March 10 in preparation for presentations to the Midcoast Community Council, to the Half Moon Bay City Council and to the public workshop held April 7. The project team will use the comments to prepare a Final Recommended Alternative Evaluation Report and will initiate an environmental review of the recommended alternative. The environmental review will help the team make final refinements to the alternative before a Comprehensive Transportation Management Plan is drafted that includes an implementation plan.

SUMMARY OF PUBLIC INPUT REGARDING RECOMMENDED ALTERNATIVE

Public input based on the recommended alternative was received from spoken and written comments during the public workshop, from comments submitted to the project website, and from letters sent to the project staff from concerned citizens. The memorandum provides a summary of the comments received and the projects team's responses to the comments.

- **Comment:** Determine if a double-lane roundabout can be installed at Cypress instead of signalization
  Response: Operationally, a double-lane roundabout will address the deficiency at Highway 1 at Cypress Avenue and there are no design concerns besides potentially needing some additional right-of-way for the roundabout. There could be potential environmental impacts for the expansion of the roadway footprint. If that is the case, the potential environmental impact and potential mitigation measures will be identified during the environmental review.

1970 Broadway
Suite 740
Oakland, CA 94612-2219

(510) 763-2061
(510) 268-1739 fax
www.dksassociates.com

- **Comment:** A consistent tactile roadway edge would be preferable to "curb and gutter" on Highway 1 and local arterials.
  Response: The proposed uniform curb and gutter can be modified to match the rural/fringe/village areas proposed in the Highway 1 Safety and Mobility Study

- **Comment:** The DKS cost estimates do not seem to be consistent with other cost estimates provided by the Highway 1 Safety and Mobility Study or the recent cost estimates from the Pedestrian Crossing Study.
  Response: The cost estimates used in this study will be reviewed in an effort to reconcile them with the recently prepared cost estimates referenced. The disparity may have resulted from different assumptions or more land acquisition or environmental mitigation costs identified from more detailed design and environmental analyses not scoped for this portion of the project.

- **Comment:** The signalized intersection at Coronado Lane needs additional through lanes.
  Response: Additional through lanes can be added, similar to the improvement identified at Ruisseau Francois Avenue.

- **Comment:** Portions of the Coastal Trail should be left as dirt and the decision where this should be done should be left to a community-planning effort.
  Response: This can be done. The project team will consider changing the Coastal Trail to a "circulation/safety improvement" instead of a "deficiency improvement" because sufficient bicycle facilities are provided by the Parallel Trail to satisfy the recommended Bicycle Environmental Quality Index (BEQI) standard.

- **Comment:** Refuges should be used instead of flashing-beacon crosswalks at proposed pedestrian crosswalks because they are safer and impact traffic less.
  Response: The majority of identified crossing locations at intersections have left-turn lanes and refuges cannot be installed without widening the roadway and installing a median between the receiving lane and left-turn lane. Thinner, recessed refuges often fill up with gravel and road debris and become unusable. The preferred solution of an elevated refuge with ramps would require an additional 16-foot median.

- **Comment:** There is a huge need to address pedestrian "jaywalking" at Grey Whale Cove and Surfer's Beach which slow traffic on weekends.
  Response: Designated pedestrian crossing locations will help to concentrate pedestrian crossings at specific locations to address the problem of jaywalking and minimize the effect it has on traffic. The recommended improvements include a crossing location at Grey Whale Cover and Surfer's Beach.

- **Comment:** The location for the diagonal parking proposed in El Granada has not been made available.
  Response: The proposed diagonal parking in El Granada is part of the larger El

Granada Highway 1 coastal erosion plan presented in the Highway 1 Safety and Mobility Improvement Study (Phase 1) document. The recommendation included in this project is that the addition of the parking in El Granada happen regardless of the approval of the other elements included in that plan, but a specific location for the diagonal parking has not been identified..

- **Comment:** Has this project been finalized or is there any remaining recourse to any of the proposed improvements? After the CTMP has been approved, can alternatives to the proposed improvements be studied in the future?
  Response: The CTMP still needs to be finalized and approved by the Board of Supervisors. Input from this public meeting will be considered in determining the final set of recommended improvements. The CTMP will also include a plan for funding and implementing the specific improvements recommended by this study will and the process of implementation over time will include opportunities for additional input.

- **Comment:** The DKS analysis (specifically at Cypress Avenue) does not address Big Wave traffic.
  Response: The analysis is performed at a planning level and does not concentrate on specific lots or planned projects. The potential Big Wave development traffic is within the new development traffic modeled in the Constrained Development Forecast.

- **Comment:** Don't install any stoplights or pedestrian crosswalks. Fix the actual problems.
  Response: Based on the existing and proposed standards, stoplights and pedestrian crosswalks are the improvements that most efficiently address the deficiencies.

- **Comment:** Install a stoplight with pedestrian crossing at Miramar Drive.
  Response: Miramar Drive did not have enough side-street volume to meet a traffic signal warrant, however a pedestrian crossing is proposed at the adjacent intersection of Highway 1 with Mirada Road.

- **Comment:** The project should give more consideration to the recommendations in the Highway 1 Safety and Mobility Study.
  Response: The recommendations in the Highway 1 Safety and Mobility Study were considered, and the proposed improvements that meet the objectives of the study were included. This project does not invalidate any non-conflicting recommendations.

- **Comment:** The project does not propose enough transit improvements. We need more transit, maybe a bus expressway/lane. Better connections to regional transit.
  Response: The recommended improvements from this project are based on the ability of the infrastructure to handle the increased demand from growth. The existing transit infrastructure and services more than serves the existing transit demand, and the 2040 does not forecast enough increase in transit ridership to

warrant additional service. The evidence from elsewhere in the other semi-rural parts of the Bay Area is that transit service provides additional mobility and travel choices for area residents and visitors, but does not result in any significant reduction in auto use.

- **Comment:** Adjust traffic flow in downtown Half Moon Bay with one-way streets to control traffic flow between Highway 1, SR-92, and Main Street.
  Response: The project team will discuss this option with the City of Half Moon Bay staff and conduct analysis of its potential benefits and impacts.

- **Comment:** Signal coordination doesn't improve really improve traffic flow. Can more evidence be provided of its expected effectiveness?
  Response: Signal coordination is a commonly used strategy to maximize the flow of traffic and reduce the incidence of multiple stops experienced by individual drivers. Reducing the number of stops and maintaining constant speeds also has the benefit of improving safety and reducing read end collisions. More information on the benefits of signal coordination can be found in a document provided by the Federal Highway Administration: http://safety.fhwa.dot.gov/intersection/other_topics/fhwasa08008/sa4_Signal_Coordination.pdf

- **Comment:** Increasing the Delay Index standard on Highway 1 based on multimodal use doesn't fix the problem.
  Response: A higher standard for the Delay Index for a "multimodal" roadway is intended to provide some flexibility to accommodate walking, bicycling and transit use with improvements for these modes without violating a county performance standard.

- **Comment:** Highway 1 needs to be four lanes along the study area and no development should be allowed until this is done.
  Response: The Connect the Coastside team has tried to make context sensitive recommendations. While widening Highway 1 to four lanes throughout the study area would improve peak period travel times on Highway 1, this is not necessary to meet the level of service standards for the roadway. The project team has recommended roadway widening only where it would be necessary to meet the standards.

- **Comment:** The plan should have fewer pedestrian crossings across Highway 1. Undercrossings should be proposed instead.
  Response: The proposed density of pedestrian crossings is already low. If pedestrian crossings are spaced farther apart, it could lead to more pedestrians and bicyclist crossing at of uncontrolled locations, which could lead more collisions with pedestrians and bicyclists. Undercrossing were not recommended because they are significantly more expensive, require more land, have potentially greater environment impacts, are prone to flooding, are difficult to keep clean and are generally not desired by pedestrians and bicyclists.

- **Comment:** Move the proposed pedestrian walkways from Ave Alhambra to Obsipo Road because people are more likely to walk there.
  Response: The majority of commercial land use in El Granada is located along Ave Alhambra, suggesting a greater potential demand for pedestrian traffic. That is why it is proposed as the location of the walkways. Obsipo Road does not have any comparable land use.

- **Comment:** BEQI/PEQI standards are more applicable to urban/grid environments.
  Response: The BEQI and PEQI standards used in Connect the Coastside are based on index parameters that relate them specifically to the semi-rural nature of the Coastside. They are also based on the expected amount of pedestrian and bicycle use that is expected. The use of performance standards for pedestrian and bicycle facilities is fairly new, and the research by the Connect the Coastside team did not identify any standards that were more oriented to semi-rural areas.

- **Comment:** Convert Ruisseau Francois Avenue to a roundabout instead of the proposed stacking lanes, and return Kehoe Avenue to the previously proposed roundabout.
  Response: Signalizing Kehoe Avenue was at the request of the city of Half Moon Bay. The effect of conversion of Ruisseau Francois Avenue to a roundabout will be examined by the project team.

- **Comment:** The Kehoe Avenue signalization can be avoided if the Half Moon Bay proposed improvements and signalization at Terrace Avenue and Grand Boulevard are modified to include an extended frontage road to accommodate traffic from Kehoe Avenue.
  Response: The project team will discuss this option with the City of Half Moon Bay staff and check the effect of the modification on level of service.

- **Comment:** Sea level rise in El Granada needs to be addressed.
  Response: Sea level rise is a legitimate concern for portions of the Coastside. Analyses of the locations on Highway 1 most prone to sea level rise are being evaluated by Caltrans and appropriate recommendations are being developed independent of this project.

- **Comment:** Are there any proposed solutions to address the delay in north Half Moon Bay? The signals in Half Moon Bay need to be coordinated.
  Response: There is a signal coordination project for the signals in downtown half Moon Bay currently underway that was included in the recommended improvements, however no other feasible solutions were identified.

- **Comment:** Trucks on SR-92 should be restricted to the right-lane only. They tend to use the left-lanes to pass other slower moving trucks and in doing so slow traffic even more.
  Response: The existing two-lane section of SR-92 currently has “trucks use right

lane" and "slower traffic keep right" signs. The recommended improvements include the installation of additional signs encouraging truck traffic to use the right lane.

- **Comment:** A roundabout at SR-92/Lower Skyline (SR-35) may have potential environmental concerns associated with it.
  Response: Any potential environmental impacts and necessary mitigations will be identified during the environmental analysis portion of the project.

- **Comment:** The Coastal Commission has stated that adding parking charges at Midcoast beaches is a social justice issue and should not be pursued.
  Response: Consideration of the potential social-justice impacts of instituting parking charges at Midcoast beaches will be addressed in the environmental review.

- **Comment:** The definition of lots available for lot retirement should be changed and should not include undevelopable lots. Lot retirement doesn't make sense if the number of developable lots doesn't decrease. Issues with paper subdivisions.
  Response: The proposed land use policies are designed to be reasonable and fair for land owners while also resulting in some reduction in the total amount of development.

- **Comment:** Maximum allowable house size on the Midcoast should be reduced.
  Response: The travel forecasts and he traffic analysis for Connect the Coastside have used assumptions about the average house sized allowed by zoning. The constraints on the amount of new development and the land-use policies recommended will achieve the development control desired.

- **Comment:** When will full buildout occur and what will the population and traffic volume be at that time?
  Response: There is no specific horizon year associated with full buildout, however regional growth at 2040 was assumed for the analysis.

- **Comment:** This project needs to present the analysis and results in language that anyone can understand.
  Response: The Project Team has undertaken additional review and refinement to make sure that the final products of the project are clear and easy to understand.

- **Comment:** The current Half Moon Bay LCP policy allows only a 1% increase in housing units a year. How many permits have been issued each year since the policy was put into place and how is the permit process managed?
  Response: The City of Half Moon Bay has an annual allocation process in place, where each year City Council approves a total number of potential allocations based on the previous year's population. Residential developments have to apply for and receive an allocation in order to move forward in the CDP process. Since the start of Measure D in 2010, the following number of certificates have been issued each year (representing approximately 20-25% of available allocations in recent years according to staff reports):

Year	Number of Allocations Issued
2010	8
2011	6
2012	8
2013	7
2014	20
2015	14
2016	6
Total	69