

Morro Bay Estuary Climate Resiliency Transportation Plan



December 3, 2024

Project Consultant Team



Middlebury Institute of
International Studies at Monterey
Center for the Blue Economy



ESA	RRM	Center for the Blue Economy	Virtual Planet
<ul style="list-style-type: none"> • Project Lead • Sea-Level Rise Science • Adaptation Planning • Hydrodynamic Modeling • Coastal Engineering • Ecology/Biology • Permitting Strategy • GIS 	<ul style="list-style-type: none"> • Roadway and Mobility Planning • Civil Engineering • Landscape Architecture • Public Outreach • Spanish Translator 	<ul style="list-style-type: none"> • Economics 	<ul style="list-style-type: none"> • Virtual Reality • Public Outreach



Project Understanding: Existing Condition

- Community connectivity impacted by storms
- Limited mobility options
- Primary evacuation route
- Important habitat areas
- Two bridges / creek crossings



Project Needs

- Holistic planning approach
- Collaborate with Key Stakeholders
 - *SLOCOG, Caltrans, State Parks, County, City of Morro Bay, City of Los Osos, Morro Bay NEP, community members*
- Inventory of what is at risk from flooding over time with sea level rise
 - *Roads and transportation infrastructure*
 - *Parks and recreation*
 - *Habitat*
- Use an adaptive pathways framework that presents potential solutions over time
 - *Near-term, mid-term and long-term adaptation actions*
- Position County, Cities, and others for additional funding

Project Goals

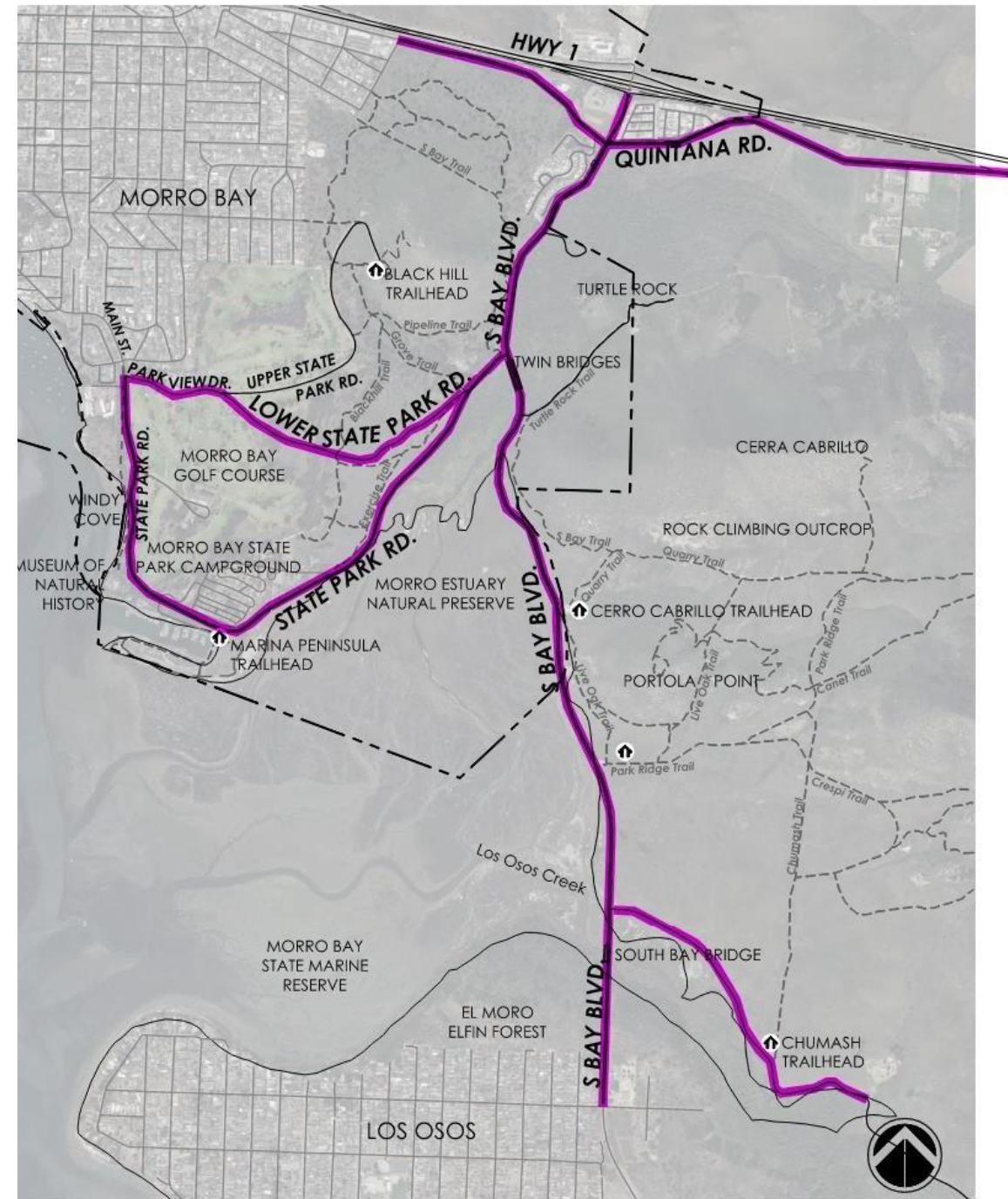
- Maintain transportation route between Morro Bay and Los Osos
- Enhance mobility for non-motorized transportation modes
- Root design concepts in nature-based solutions
- Develop conceptual design for a new California Coastal Trail protected bike/pedestrian facility or multi-use pathway
- Multi-objective approach to transportation planning with other local activities/projects

Preliminary Study Area

Transportation routes to be assessed in magenta.

As well as the complex jurisdictional boundaries, including City of Morro Bay, City of Los Osos, Unincorporated San Luis Obispo County, and California State Parks.

Not shown but also in study area are the Morro Estuary Natural Preserve Special Status Area and Morro Bay State Marine Reserve Marine Protected Area Boundaries.

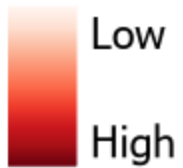


Existing Conditions: Safety – Motorized

2020 Fatal and Severe Injury Collision Hotspots

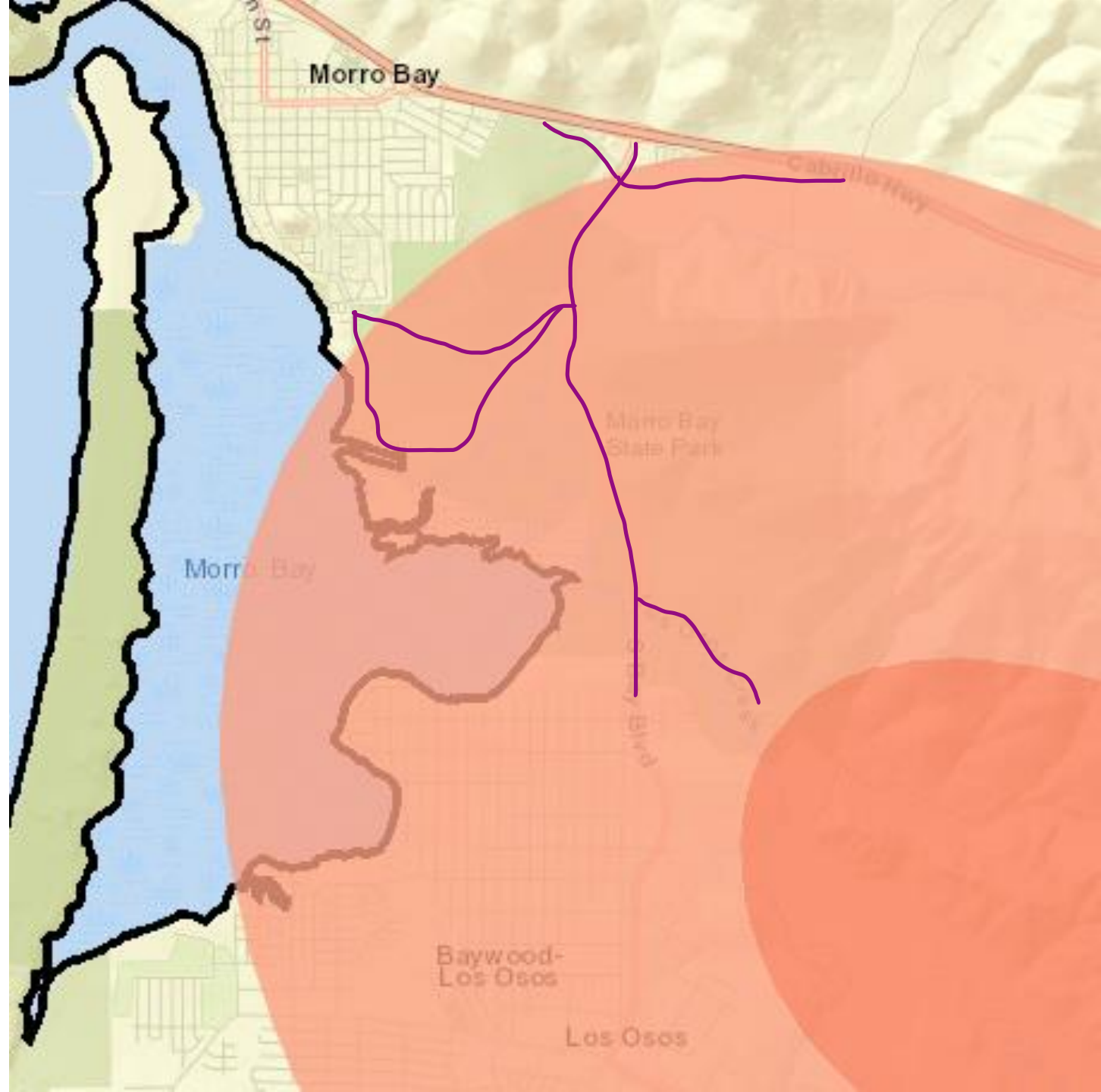
This map depicts areas where fatal and serious injuries occurred in San Luis Obispo County from 2006 to 2020. Data is presented as a function of density, where the darker the red the more collisions occurred.

Collision Density



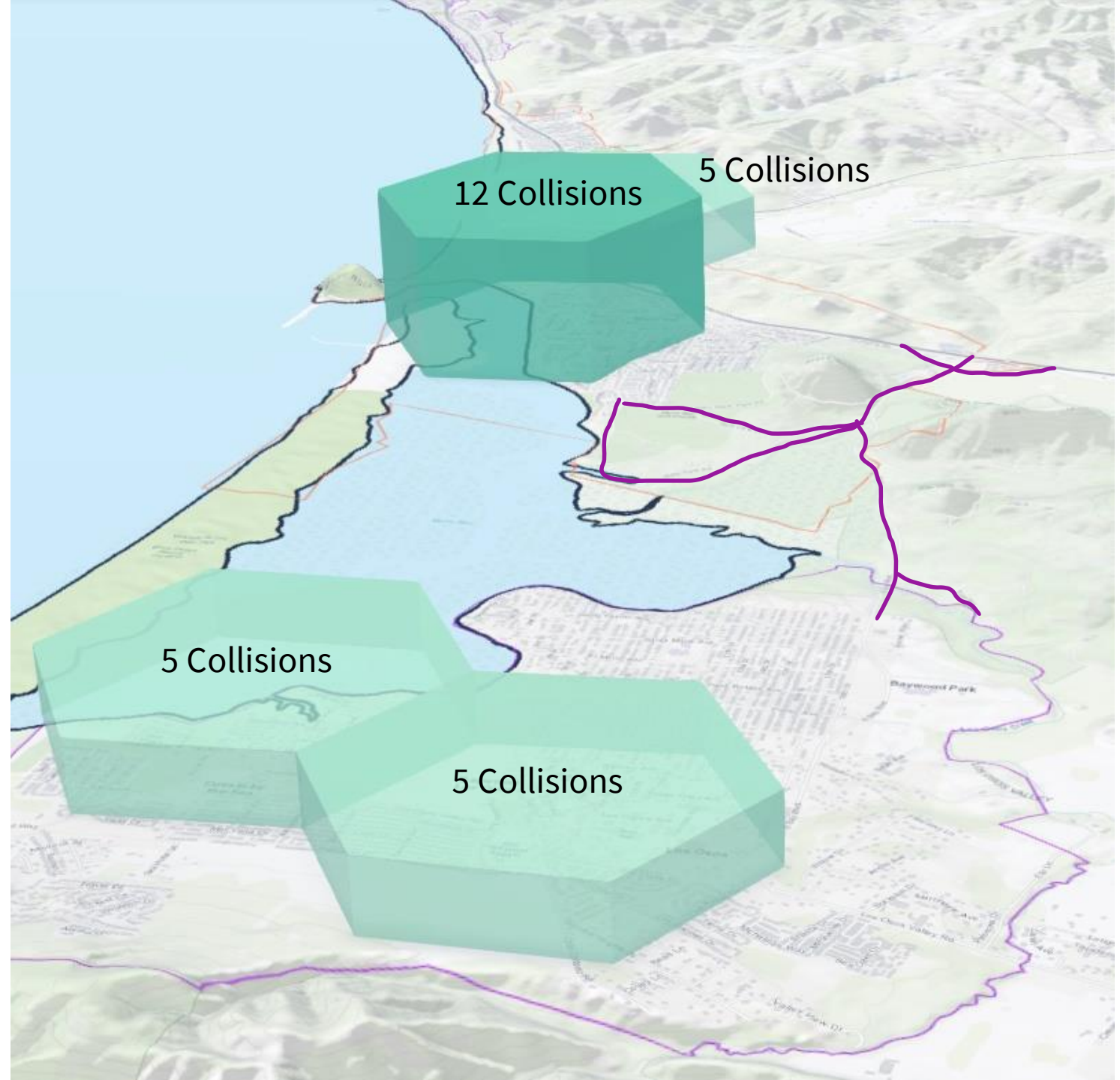
Data is from The Transportation Injury Mapping System (TIMS), which pulls data from the Statewide Integrated Traffic Record System (SWITRS).

Source: Transportation Injury Mapping System (TIMS), *Safe Transportation Research and Education Center, University of California, Berkeley. 2021*



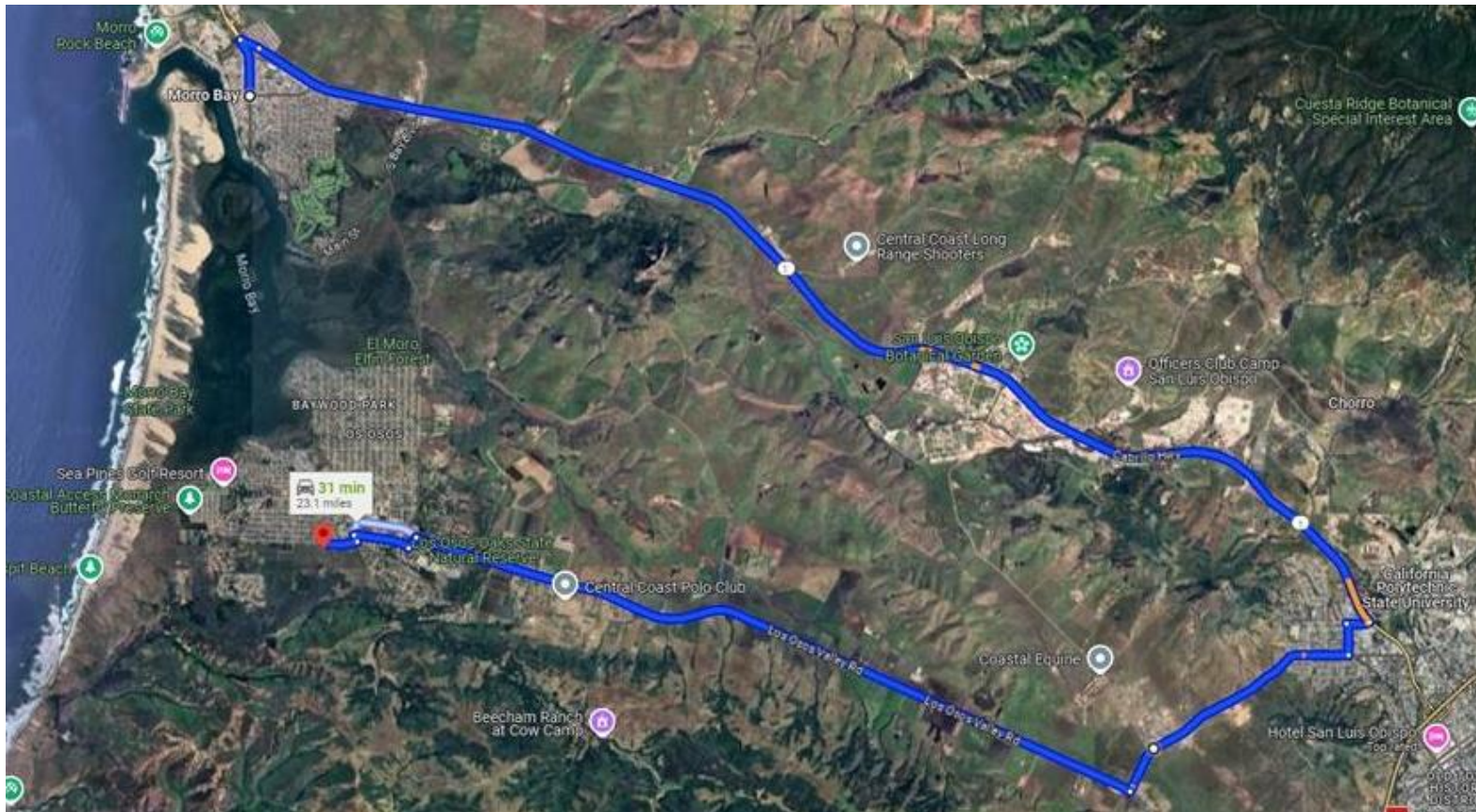
Existing Conditions: Safety – Non-Motorized Collisions



2016 - 2020 Non-Motorized Collisions



Existing Conditions: Safety – Emergency Response Times

Emergency response times would approximately double if South Bay Blvd was not available due to flooding



	via CA-1 S and Los Osos Valley Rd	30 min
		23.1 miles
		28 min without traffic
	Details	
	via CA-1 S, Foothill Blvd and Los Osos Valley Rd	31 min
		23.1 miles
		28 min without traffic

Existing Conditions: Connectivity – Disadvantaged Communities

116 to 350 Points

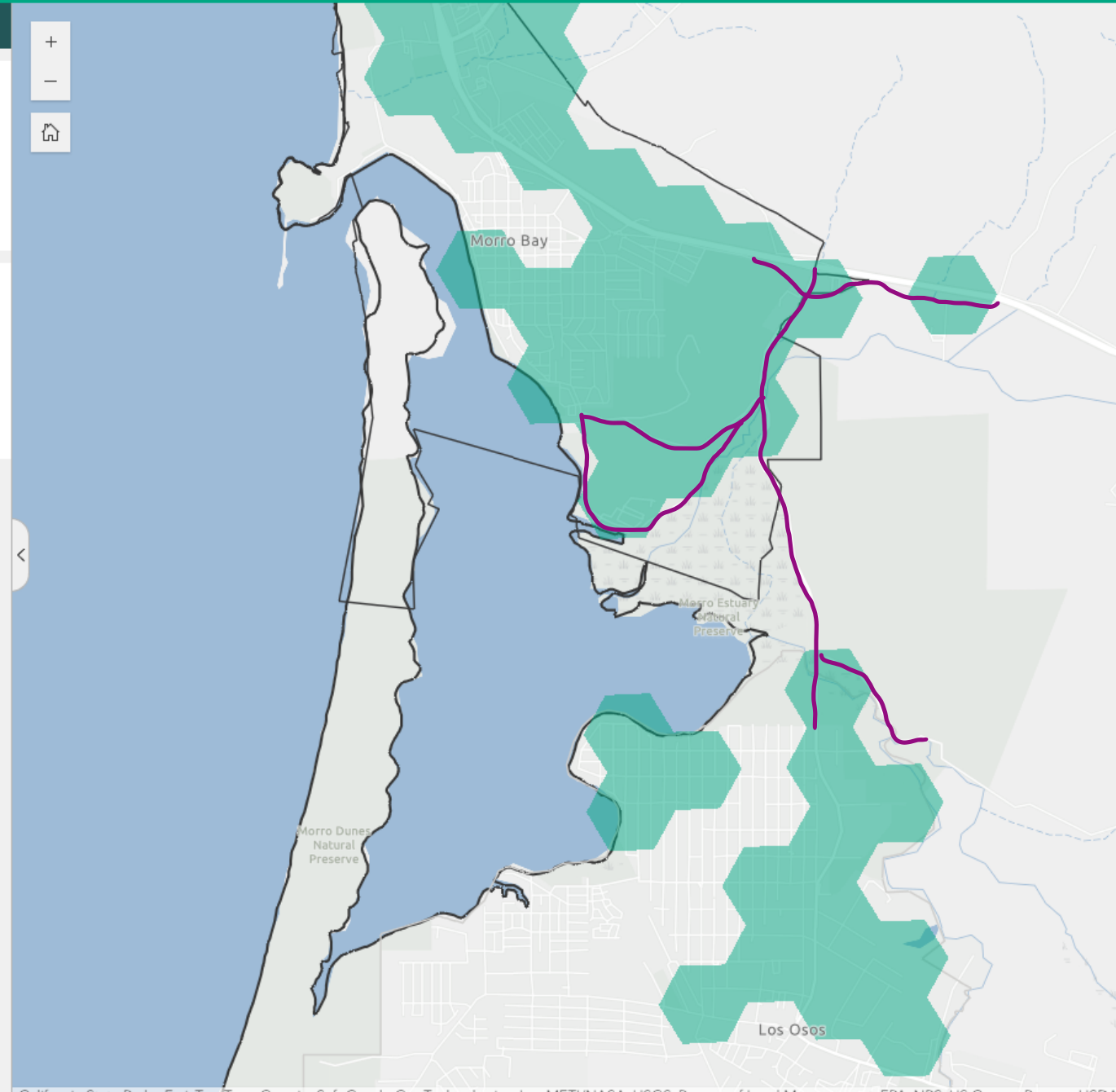
DAC Assessment

Disadvantaged Communities (DACs) = disproportionately burdened areas that are economically distressed and/or historically underrepresented as a part of the local government process.

This is a San Luis Obispo Regional definition.

Our DAC assessment uses 13 variables that address a wide range of socioeconomic and population-based factors to geographically define disproportionately-burdened areas. Areas that scored **116 or higher** after combining all the variable point values are considered DACs.

Disadvantaged Communities Variables	Total Point Value
Racial Minority	40
Ethnic Minority	40
Disability Status	40
Household Income	40
Free or Reduced Price Meals	30
Educational Attainment	30
Language Proficiency	30
Renter Affordability	20
Housing Ownership Affordability	20
Older Adults: Age 75 Years and Older	20
Youth: Age 15 Years and Under	20
Households with No Vehicles Available	10
Households with No Computing Device Available	10
Total Number of Points	350



Existing Conditions: Travel Time Reliability – Level of Service

9:00 AM

Best 14 min 38 min 2h 12m 33 min —

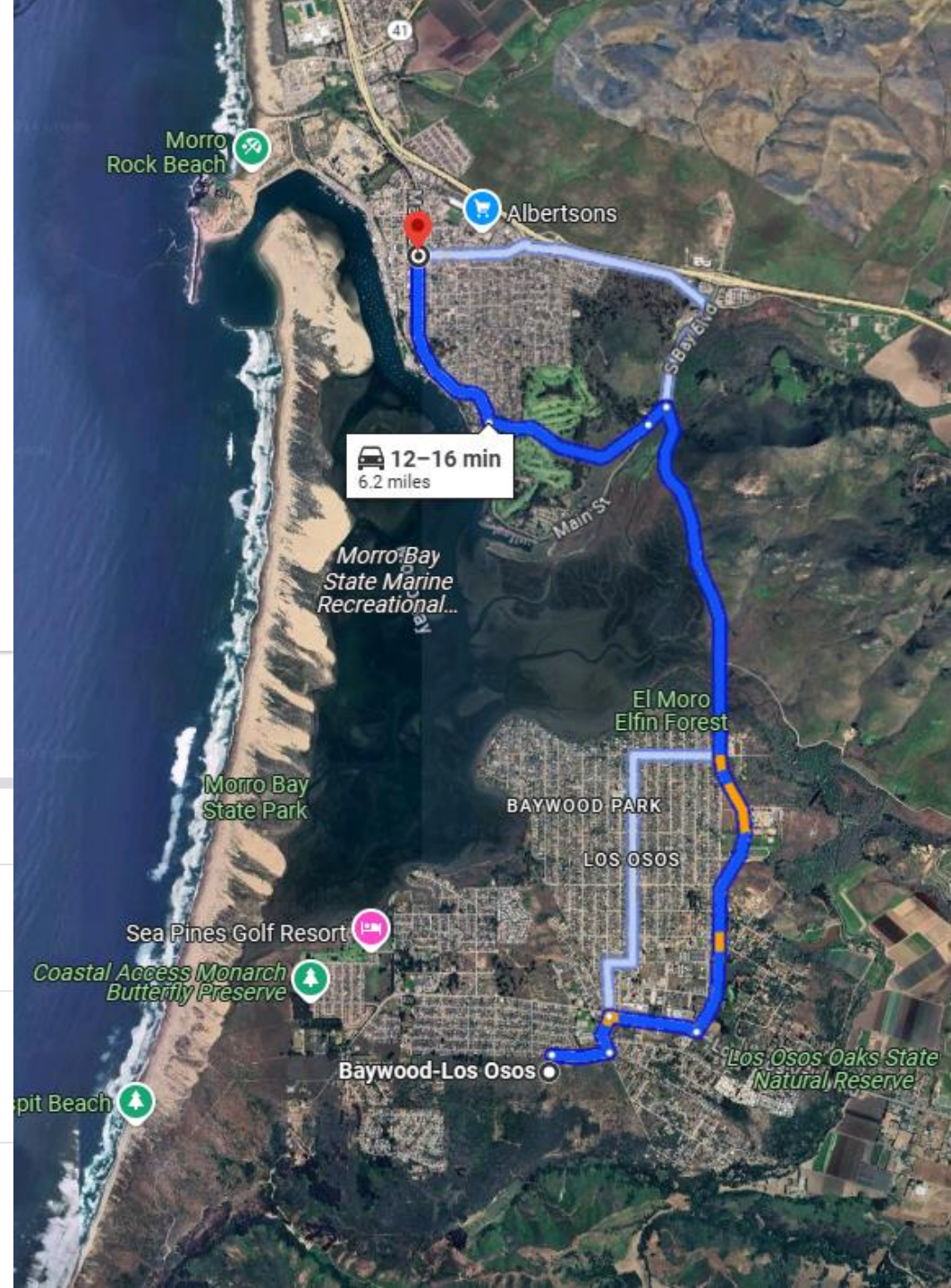
Baywood-Los Osos, California 93402

Morro Bay, California

Depart at 9:00 AM Mon, Nov 25

Send directions to iPhone Copy link

via S Bay Blvd	typically 12–16 min
via S Bay Blvd and Quintana Rd	typically 12–16 min
via 11th St and S Bay Blvd	typically 16 min



Existing Conditions: Travel Time Reliability – Level of Service

5:00 PM

Best 14 min 34 min 2h 17m 35 min

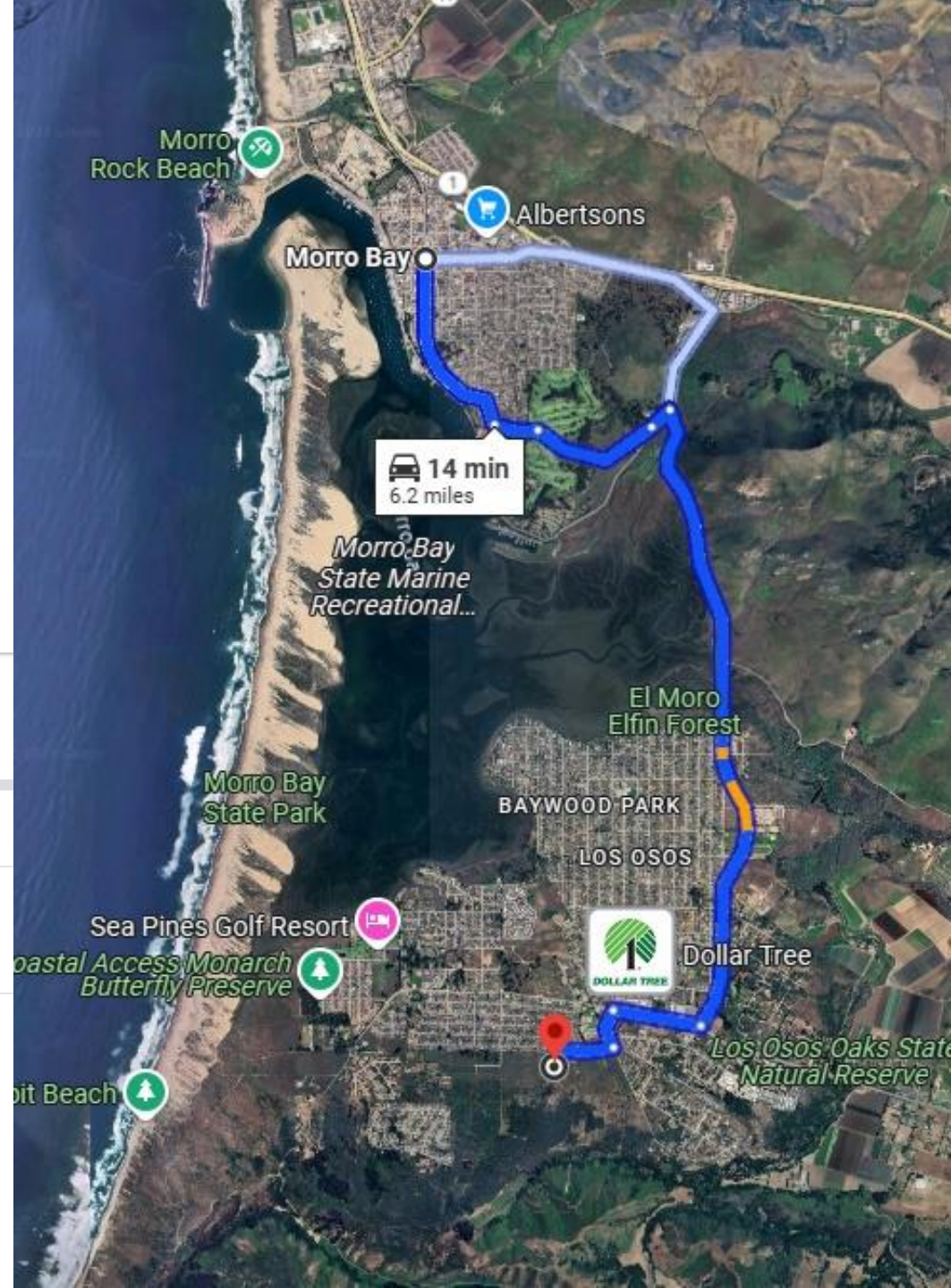
Morro Bay, California

Baywood-Los Osos, California 93402

Depart at 9:00 AM Mon, Nov 25

via S Bay Blvd typically 14 min
Arrive around 9:16 AM
6.2 miles

via Quintana Rd and S Bay Blvd typically 12-16 min
Arrive around 9:16 AM
6.3 miles

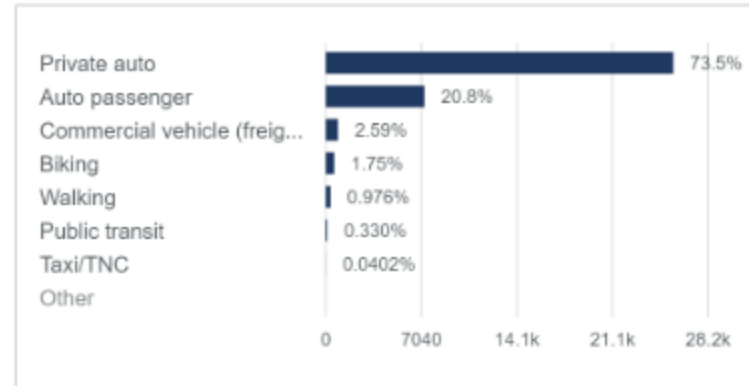


Existing Conditions: Sustainability

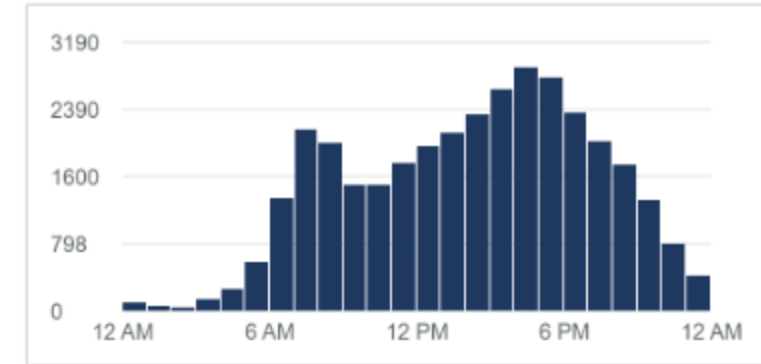
Mode Split (SLOCOG – Replica Data)

Trips

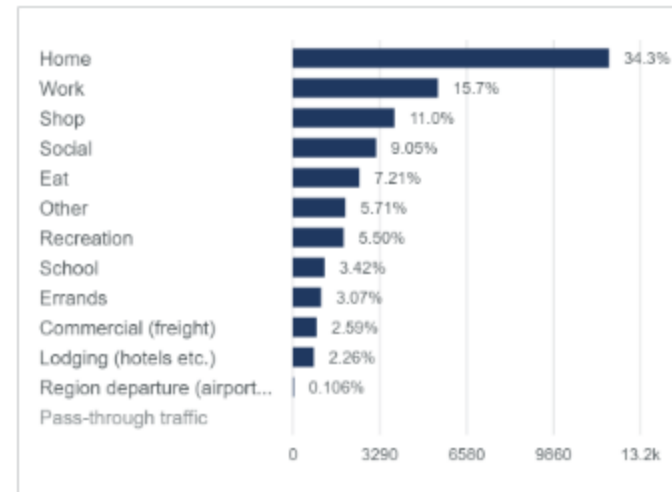
Primary Mode



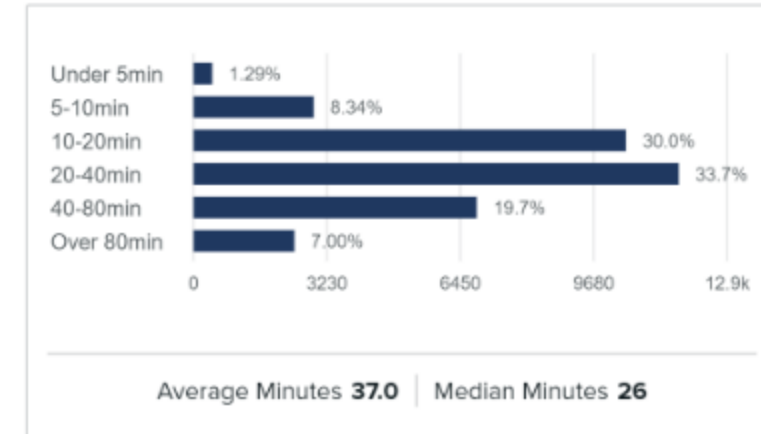
Starting Hour (In Local Time)



Trip Purpose



Trip Duration (Minutes)



Existing Conditions: Connectivity – Bike/Pedestrian Infrastructure Transit Routes



[Learn more about Rideshare & Bikes](#)

Protected or Separated Bike Path



Designated Bike Lane



Shared Roadway



Mountain Bike Trails



Pacific Coast Bike Route



Trailheads



Park and Ride Locations



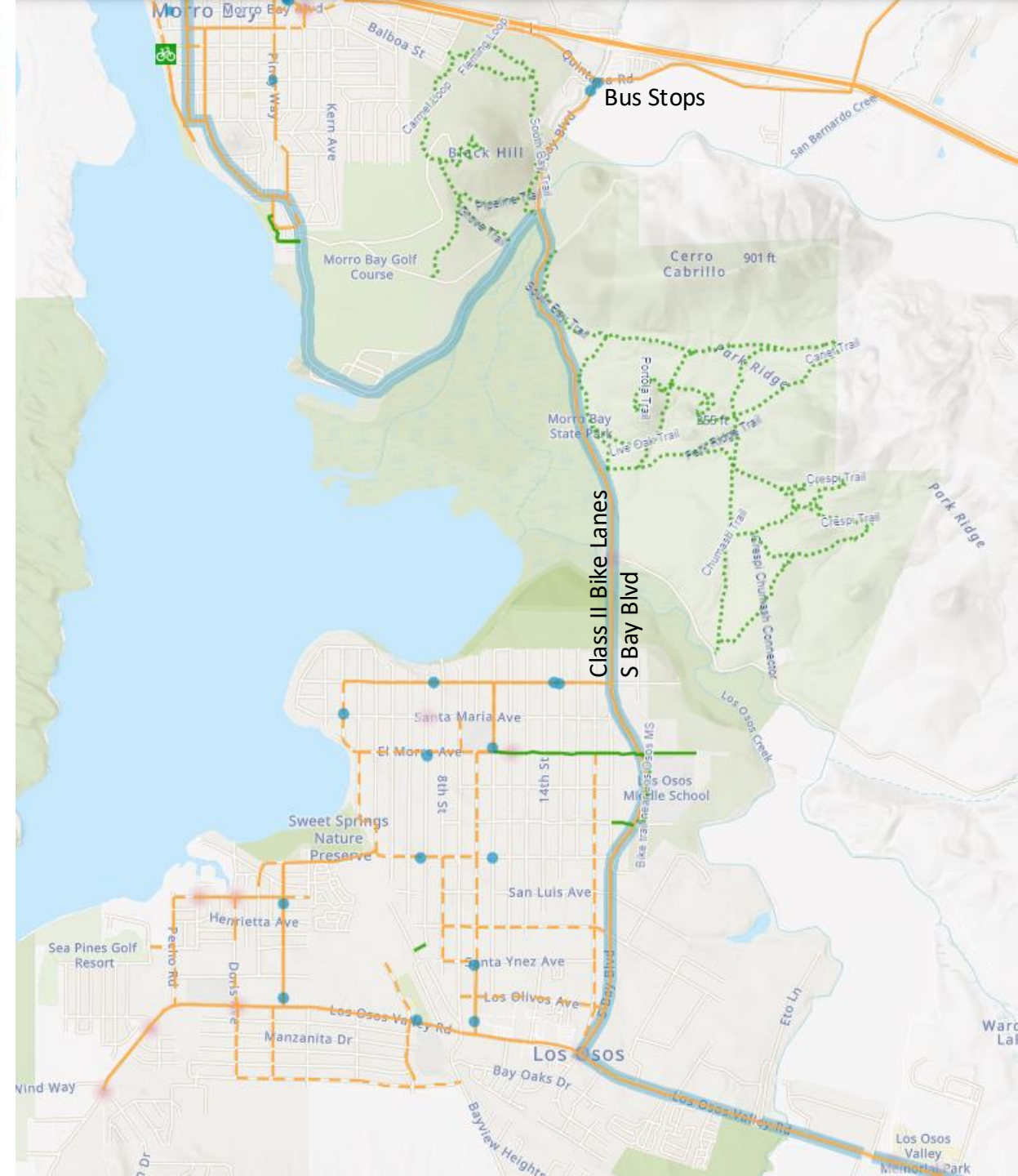
Amtrak Station / Transit Center



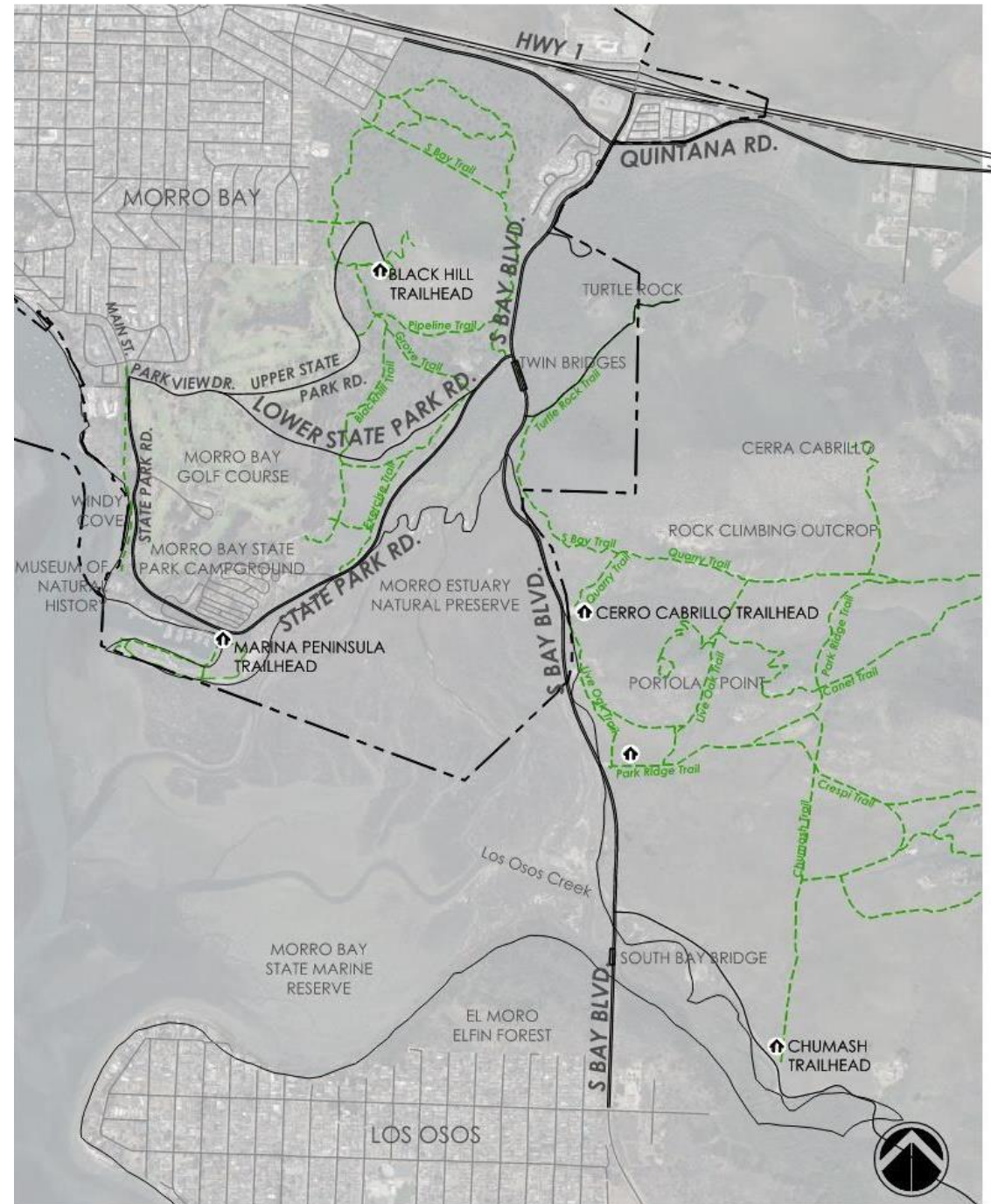
Bike Shops



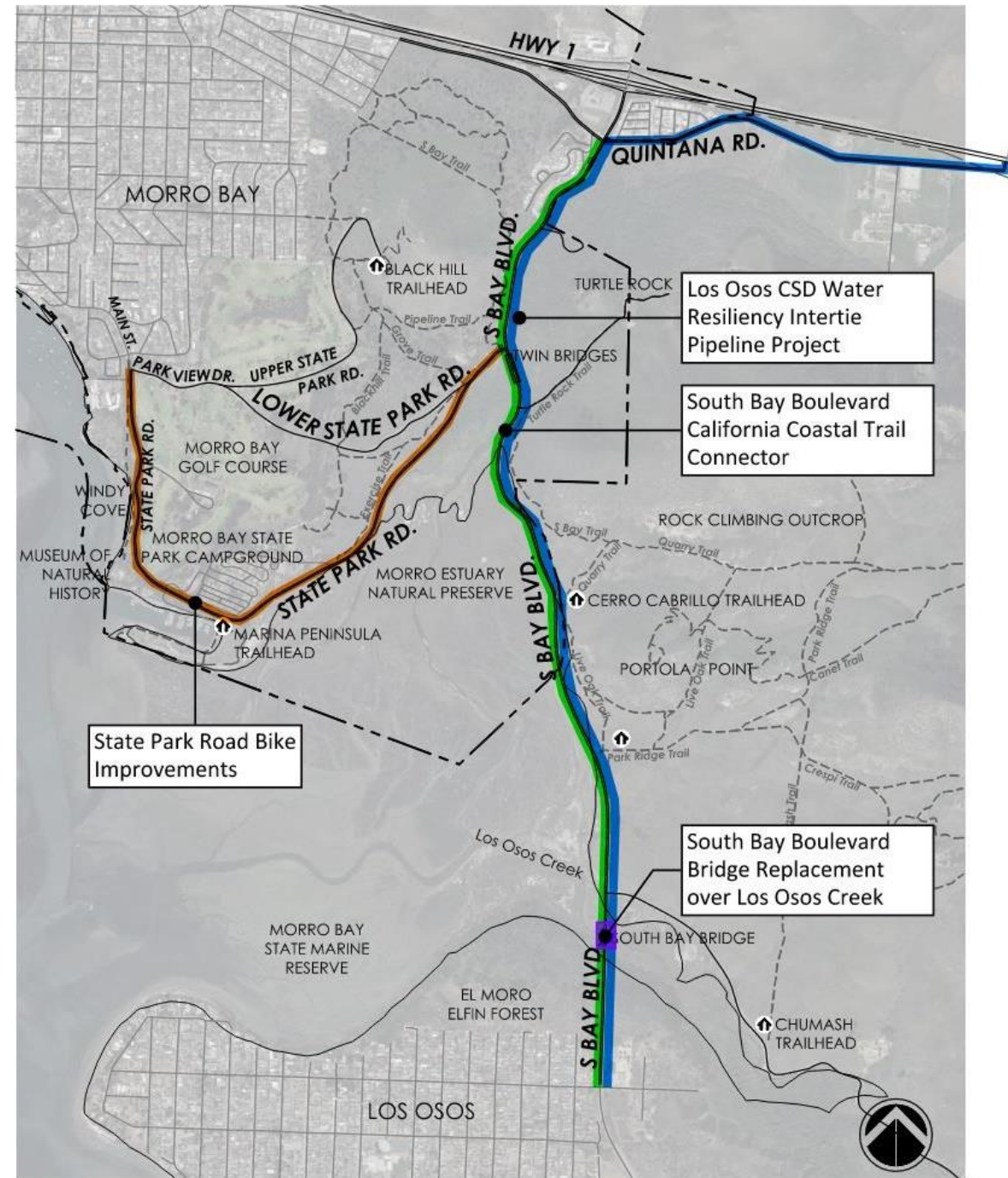
Transit Stops



Existing Conditions: Connectivity – Trail Network



Planned Projects

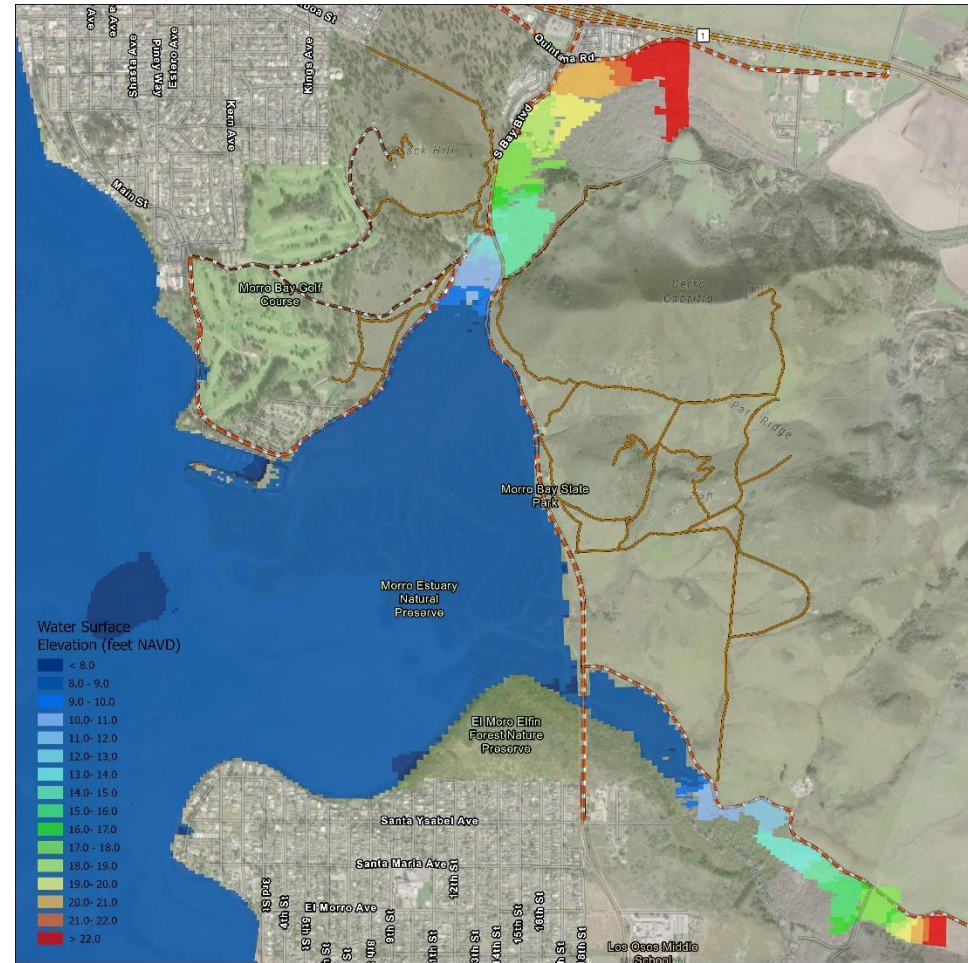


Non-Storm Scenario ("King Tide")



SLR = 0 feet

Storm Scenario (Based on Jan 1983 Data)



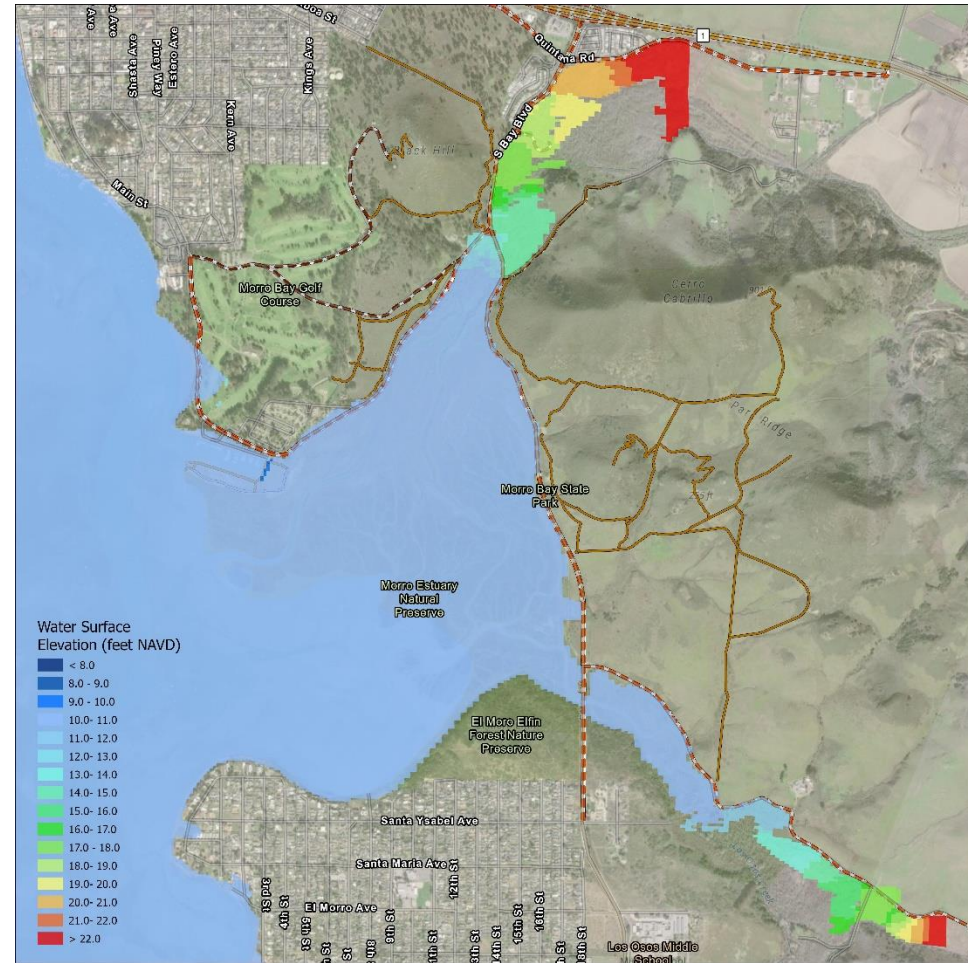
SLR = 0 feet

Non-Storm Scenario ("King Tide")



SLR = 1.8 feet

Storm Scenario (Based on Jan 1983 Data)



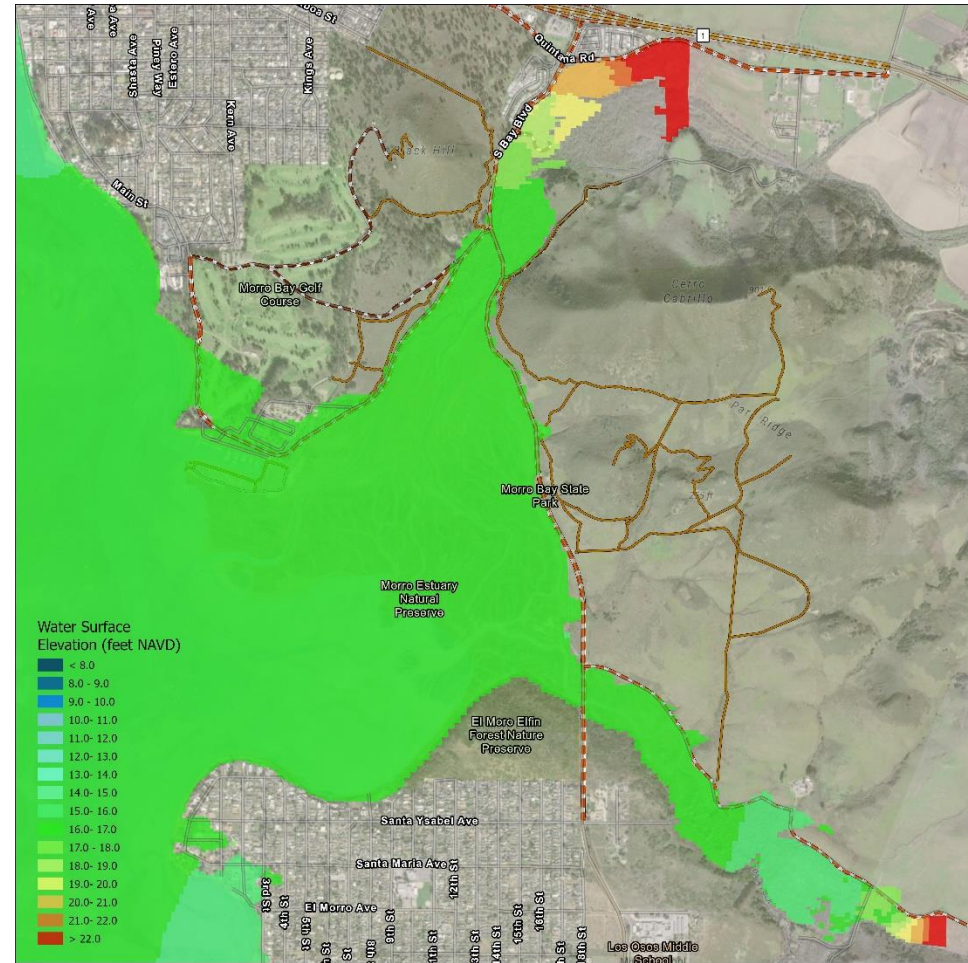
SLR = 1.8 feet

Non-Storm Scenario ("King Tide")



SLR = 6.3 feet

Storm Scenario (Based on Jan 1983 Data)



SLR = 6.3 feet

Infrastructure Opportunities



Non-motorized Mobility Facility Types

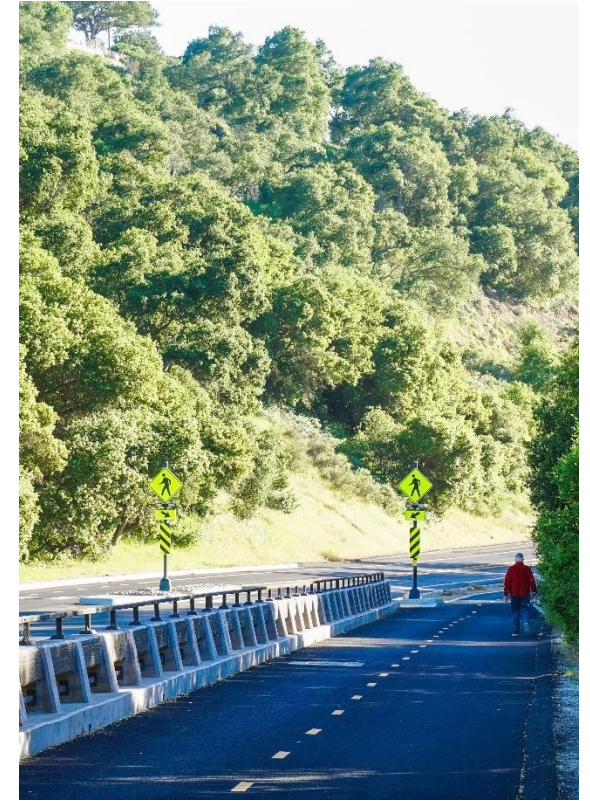
Class I Bike Path (Multi-use path): A shared use facility completely separated from the roadway



Class I with horizontal separation from roadway



Class I with horizontal separation from roadway



Class I with vertical separation from roadway

Non-motorized Mobility Facility Types

Class II Bike Lanes: A delineated lane for bicycles within the roadway



Class II bike lanes
(Existing condition on S Bay Blvd)



Buffered Class II bike lanes



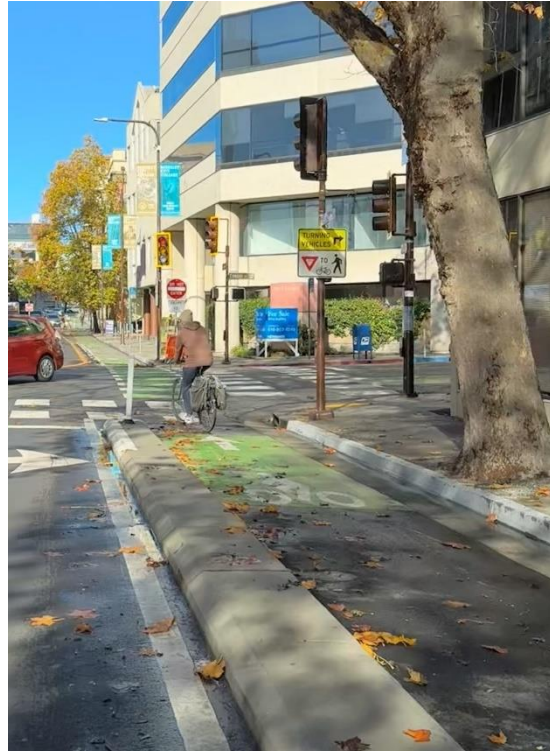
Buffered Class II bike lanes

Non-motorized Mobility Facility Types

Class IV Bikeway (Separated Bikeway): for exclusive use of bicycles and includes separation from vehicular traffic. The separation may include, but is not limited to, grade separation, flexible posts, inflexible posts, inflexible barriers, or on-street parking. Can be one-way or two-way.



Class IV Two-way bikeway with buffer and flexible posts

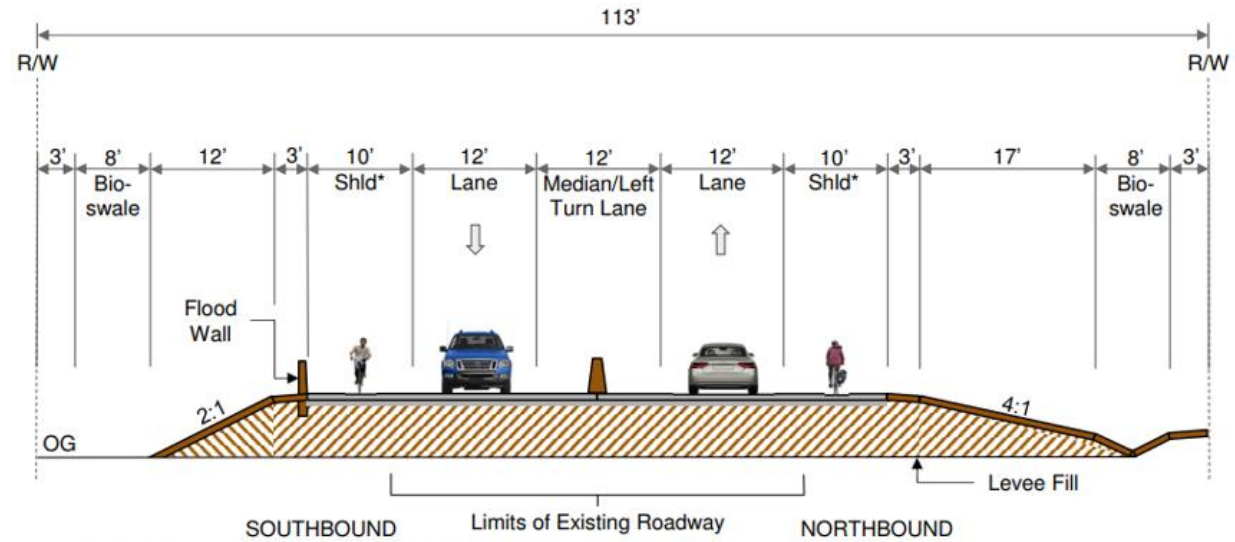


Class IV One-way bikeway with separation curb

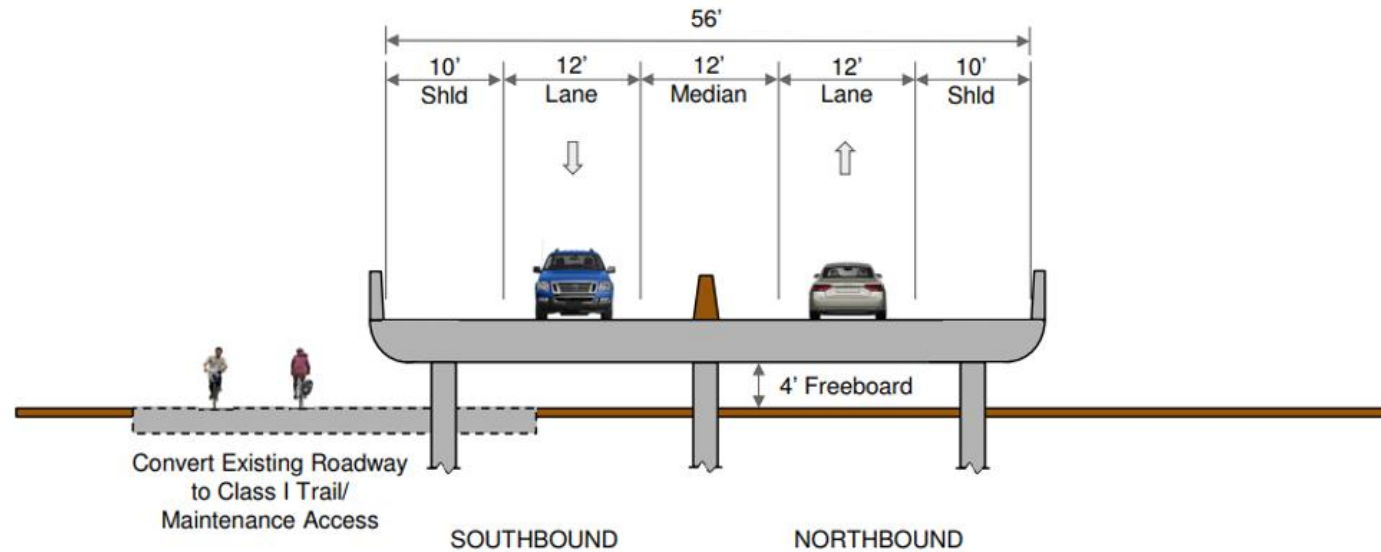


Class IV One-way bikeways with separation planters

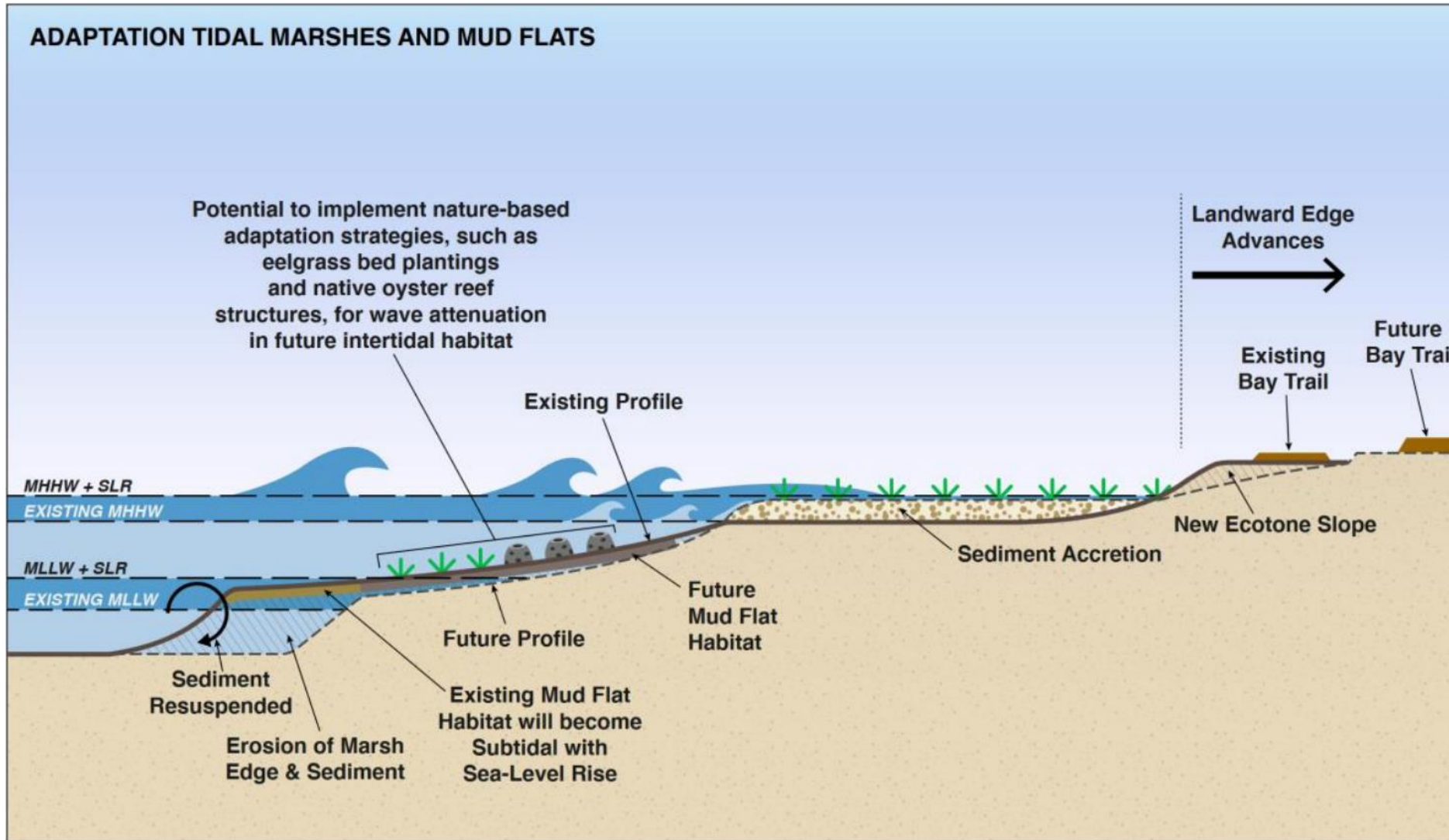
Schematic of Adaptation Alternatives



*Shoulder also serves as class II bicycle lane



Schematic of Adaptation Alternatives



What's Next?

- Coastal Flood Hazards and Vulnerability Analysis
- Opportunities and Constraints and Alternatives Development
- Benefit-cost analysis
- Second workshop
 - Recommended near-term actions
 - Adaptation scenarios
 - Roadway, bridge and trail improvement and adaptation actions
 - Benefit coast analysis
- Project Website: sbbclimateplan.org



Breakout Stations