Meeting Agenda

- Review of Project Objectives and Schedule
- Task 3 – Development and Evaluation of Transportation Alternatives to Address Deficiencies
- Public and Stakeholder Outreach on Transportation Alternatives
- Next Steps
Project Objectives and Schedule
What is Connect the Coastside?

The Plan will identify measures to ensure future residential and non-residential development can be supported by the future transportation system and infrastructure.
Project Objectives

- Estimate the buildout development potential of the Midcoast and Half Moon Bay
- Identify the potential impacts of growth on traffic, mobility and safety
- Identify and evaluate measures to minimize and mitigate the impacts of growth
- Develop a plan for funding and implementing transportation improvements
### Project Schedule

**Workshop #1:** Opportunities and Constraints - November 2014  
**Workshop #2:** Alternatives - March 2015  
**Workshop #3:** Draft Plan - August 2015

<table>
<thead>
<tr>
<th>Task</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task 1 - Community Engagement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Task 2 - Existing and Future Development Potential and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation Deficiencies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Task 3 - Development and Evaluation of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternatives to Address Deficiencies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Task 4 - Development of a Comprehensive Transportation Management Plan</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The schedule is represented visually with dates from 2014 to 2016.
Task 3 - Development and Evaluation of Alternatives to Address Deficiencies
Three Study Alternatives

- Alternative 1 – Low Cost/Low Impact Improvements
- Alternative 2 – Medium Cost/Medium Impact Improvements
- Alternative 3 – High Cost/High Impact Improvements
Alternatives Evaluation

- Feasibility and Design Considerations
- Cost
- Ability to address deficiencies
  - Defined Standards
  - Qualitative Scoring
# Alternatives Evaluation

<table>
<thead>
<tr>
<th>Metric</th>
<th>Description</th>
<th>Point Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connectivity</td>
<td>Measures the extent to which a project fills a gap in existing bicycle or pedestrian networks or transit connections.</td>
<td>0 to 3 (low to high connectivity)</td>
</tr>
<tr>
<td>Access</td>
<td>Measures the extent to which a project provides new facilities or service to currently underserved communities or existing destinations.</td>
<td>0 to 3 (low to high access)</td>
</tr>
<tr>
<td>Safety</td>
<td>Bonus priority for safety improvements.</td>
<td>0 or 1</td>
</tr>
<tr>
<td>Shoreline</td>
<td>Bonus priority for enhanced public shoreline access.</td>
<td>0 or 1</td>
</tr>
<tr>
<td>Precedent</td>
<td>Bonus for a project recommended in one or more previous studies</td>
<td>0 or 1</td>
</tr>
<tr>
<td>Capital Cost</td>
<td>Measures the extent of the estimated capital cost for a project.</td>
<td>0 to 3 (high to low capital cost)</td>
</tr>
<tr>
<td>Annual Cost</td>
<td>Measures the extent of the estimated annual operating and maintenance costs of a project.</td>
<td>0 to 3 (high to low annual cost)</td>
</tr>
</tbody>
</table>
Alternative 1 – Low Cost/Low Impact Improvements

Alternative 1
Low Cost/Low Impact
Alternative 1 – Low Cost/Low Impact Improvements

- Roadway and Intersection Improvements
  - Gray Whale Cove
  - Signage to restrict turning movements
  - Stop signs added
Alternative 1 – Low Cost/Low Impact Improvements

- Roadway and Intersection Improvements
  - Defined curb and shoulder for consistent cross section
Alternative 1 – Low Cost/Low Impact Improvements

Feasibility and Design

- Storage for left-turn pocket to avoid spillover
- May be difficult to provide shoulder and curb in some locations along Highway 1

Cost = $3.3 M
Alternative 1 – Low Cost/Low Impact Improvements

Evaluation

- Improves circulation at Gray Whale Cove
- Improves safety for all modes of travel along Highway 1
- Improves LOS at Highway 1 and 8\textsuperscript{th} Street
- Does not address any capacity deficiencies
Alternative 1 – Low Cost/Low Impact and Planned Improvements

Bicycle and Pedestrian

- Designated crossings of Highway 1 with striping and beacons (18 locations)
- Addition of sidewalks on Highway 1 in the most active areas of Montara, Moss Beach, Miramar, and Half Moon Bay
- Updated traffic signals to support pedestrians and bicyclists
- Sharrows on Main Street and Carlos Street
Alternative 1 – Low Cost/Low Impact and Planned Improvements

Feasibility

- Gray Whale Cove crossing should be north of the turn pocket

- Cost = $5.7 M
Evaluation

- Pedestrian crossings, sidewalks and Sharrows score well in most or all categories.
- Traffic signal updates only improve safety and connectivity, however this is an important aspect in Downtown Half Moon Bay where the pedestrian volume is high.
Alternative 1 – Low Cost/Low Impact and Planned Improvements

Transit Improvements

- Improvement of bus stop amenities
- Increased weekend SamTrans service
Alternative 1 – Low Cost/Low Impact and Planned Improvements

- Feasibility
  - Bus stop locations should be based on demand studies
  - Cost = up to $12 M + negotiated price with SamTrans
Evaluation

- Increased transit service will require negotiation with SamTrans
- Bus stop improvements only improve safety on our metric, but they are also an important factor in making transit more comfortable and desirable
Parking Improvements

- Formalized parallel parking for Montara Beach separated from Highway 1
- Gray Whale Cove Upper Lot
- Improve wayfinding signage
Alternative 1 – Low Cost/Low Impact and Planned Improvements

Feasibility

任何分离的停车设施应有一个左转车道供北向流量使用。

Cost = $1.9 M
Evaluation

- Both proposed parking lots provide improved parking supply in high-demand locations in an area with adjacent traffic.
- Improved wayfinding signage will help direct recreational traffic to designated parking areas to avoid overflow in residential parking areas.
Alternative 1
Overall Maximum Cost Estimate = $21.3 M
Alternative 2 – Medium Cost/Medium Impact Improvements

Alternative 2
Medium Cost/Medium Impact
Alternative 2 – Medium Cost/Medium Impact Improvements

Roadway Improvements

- **Alternative 1 Improvements**
- Left-turn bay and acceleration lane (6 additional locations)
- Signals added (5 locations)
- Additional medians to restrict and consolidate access to Highway 1
Alternative 2 – Medium Cost/Medium Impact Improvements

Æ Feasibility

Æ Signalization of California Avenue may require careful design because of Wienke Way and may not be necessary if westbound traffic is restricted

Æ Any signalization will require striped pedestrian crossings

Æ Cost = $13.3 M - $14.7 M
Evaluation

- Physical restriction of turns and access has similar results to signage
- Signalization of California Avenue, Cypress Avenue, and Kehoe Avenue all result in LOS within the standard
- Consolidation of access minimizes number of conflict locations along Highway 1
Bicycle and Pedestrian Improvements

- **Alternative 1 Improvements**
  - Parallel and Coastal trails
  - Sidewalks on Coronado Street and Avenue Alhambra in El Granada
  - Class II bike lane along Capistrano Road
  - Class II bike lane along Airport Street
Feasibility

Parallel trail will cross uneven land and may result in high engineering cost and environmental impacts.

Lane width on Capistrano Road and Airport Street to calm traffic adjacent to bicycle lanes.

Cost = $13.5 M plus study cost estimates for Parallel and Coastal Trails, Airport Street Bike Lanes.
Alternative 2 – Medium Cost/Medium Impact Improvements

Evaluation

- The Parallel and Coastal trails have very high connectivity and accessibility scores as well as public support and will provide a safe alternative to Highway 1 for recreational bicyclists and pedestrians.
- Sidewalks and bike lanes will provide connectivity along currently traveled corridors.
Alternative 2 – Medium Cost/Medium Impact Improvements

Transit Improvements

- **Alternative 1 Improvements**
- Shuttle bus service during special events
- Park-and-Ride lots for transit (repeated under Parking)
- Enhanced bus service for the Cabrillo Unified School District
Alternative 2 – Medium Cost/Medium Impact Improvements

Feasibility
- No feasibility or design concerns

Cost
- Will require cost of acquisition or leasing of buses and facilities for shuttle and school bus service
- Park-and-Ride lots will require negotiation with owners
Alternative 2 – Medium Cost/Medium Impact Improvements

_evaluation

- Special event shuttle service has potential for consolidating demand during the most congested time of the year and Park-and-Ride lots offer the same during the remainder of the year.

- School bus service is highly desired and would improve connectivity and access, but requires ongoing operation and maintenance funding.
Alternative 2 – Medium Cost/Medium Impact Improvements

→ Parking Improvements

→ Alternative 1
   
→ Improvements

→ Parking lot for Rancho Corral de Tierra trails

access east of Highway 1
Alternative 2 – Medium Cost/Medium Impact Improvements

Feasibility

Because the proposed lot is on the east side of Highway 1, it would require a striped crosswalk with a high-visibility beacon if it is used for beach parking.

Cost = $4.3 M
Alternative 2 – Medium Cost/Medium Impact Improvements

Evaluation

The proposed lot would address existing parking needs, but paving a large area for parking could have environmental impacts.
Alternative 2 – Medium Cost/Medium Impact Improvements

Alternative 2
Overall Maximum Cost Estimate = $44.4 M
-plus study cost estimates for Parallel and Coastal Trails, Airport Street Bike Lanes
-plus cost of acquisition or leasing of buses and facilities for shuttle and school bus service
-plus negotiated cost with SamTrans and Park-and-ride lot owners
Alternative 3 – High Cost/High Impact Improvements

Alternative 3
High Cost/High Impact
Alternative 3 – High Cost/High Impact Improvements

Roadway Improvements

- **Alternative 1 and 2 Improvements**
- Roundabouts at twelve intersections
- Addition of travel lanes along Highway 1 to create a four-lane highway between the following cross roads:
  - 9\textsuperscript{th} Street in Montara and Carlos Street in Moss Beach
  - Cypress Avenue in Moss Beach and Coral Reef Avenue in El Granada
Roundabouts and Capacity Increase
Roundabouts and Capacity Increase
Alternative 3 – High Cost/High Impact Improvements

Sample of Roundabouts in Other Locations
Alternative 3 – High Cost/High Impact Improvements

Roadway Improvements (continued)

- Highway 1 realignment in El Granada
- Construction of a Frontage Road along east side of Highway 1 connecting Main Street with Frenchman’s Creek Road
Alternative 3 – High Cost/High Impact Improvements

Roadway Improvements (continued)

- Left-turn lanes at major businesses along SR 92 in Half Moon Bay
- Passing/Climbing lanes where feasible along SR 92
Alternative 3 – High Cost/High Impact Improvements

Feasibility

- Roundabout capacity constraints and approach requirements
- Demand study is needed to determine left-turn pocket length for left-turn pockets on SR-92
- High potential cost of right-of-way acquisition for any large footprint projects in built-out areas

Cost = $58.1 M - $59.4 M
Alternative 3 – High Cost/High Impact Improvements

Evaluation

- Increasing capacity between Montara and Moss Beach and between Moss Beach and El Granada addresses roadway capacity deficiencies

- Roundabouts at the following locations show improvements to LOS:
  - Highway 1 & Coronado Street
  - Highway 1 & Kehoe Avenue
  - SR-92 & SR-35
Roundabouts and Capacity Increase
Roundabouts and Capacity Increase

- Improve LOS
- Worsen LOS
- Mixed
Sample Roundabout Design

- Side street interference with approach
- Minimum footprint without additional surrounding landscaping and sidewalks
- Potential conflict with new bike lane
Evaluation

Left-turn lanes and passing/climbing lanes along SR-92 do not directly address roadway capacity deficiencies, but they will greatly improve circulation and flow through the area and allow improved efficiency in using the existing capacity.
Alternative 3 – High Cost/High Impact Improvements

- Bicycle and Pedestrian Improvements
  - Alternative 1 and 2 Improvements
  - Pedestrian over- or under-crossings of Highway 1 at four locations
    - Gray Whale Cove
    - Montara Sanitary District building
    - Surfer’s Beach Parking area
    - Kehoe Avenue
  - Bike lane/route along SR 92
Alternative 3 – High Cost/High Impact Improvements

Feasibility

The design of pedestrian under-crossings may be affected by the water table at locations close to the coast and over-crossings maybe require a significant footprint to provide the required vertical clearance and handicap accessibility.

Cost = $60 M
Evaluation

- SR-92 bike lane has high connectivity, access, and safety score
- High cost suggests that a demand study should be performed to determine the expected volume of bicycle traffic
- Pedestrian over- and under-crossings are high cost alternatives to striped crossings
Alternative 3 – High Cost/High Impact Improvements

Transit Improvements

- Alternative 1 and 2 Improvements
- Expanded SamTrans service for Midcoast and HMB
- Improved transit connections to regional transit
Alternative 3 – High Cost/High Impact Improvements

Feasibility

- No feasibility concerns

- Cost estimates of increased and new SamTrans routes will be based on negotiation with SamTrans
Alternative 3 – High Cost/High Impact Improvements

Evaluation

- Increased local and regional transit will greatly improve connectivity and access
- Potentially high cost
- Demand study should be used to determine expected ridership and high demand locations
Parking Improvements

Alternative 1 and 2 Improvements

- Diagonal parking for Moss Beach along Carlos Street
- Diagonal parking for El Granada separated from Highway 1 realignment
Alternative 3 – High Cost/High Impact Improvements

- Feasibility
  - No feasibility concerns
- Cost = $4.4 M
Evaluation

- Parking projects are currently tied to larger alignment projects
- Increased parking availability should be provided regardless of larger project approval
Alternative 3 – High Cost/High Impact Improvements

Alternative 3
Overall Maximum Cost Estimate = $135.7 M
-plus study cost estimates for Parallel and Coastal Trails, Airport Street Bike Lanes, and Frontage road
-plus cost of acquisition or leasing of buses and facilities for shuttle and school bus service
-plus negotiated cost with SamTrans and Park-and-ride lot owners
Conclusions about Alternatives

- Most improvements considered would be cost-effective ways to improve mobility, safety and access.

- Even Alternative 3 will not address all Buildout deficiencies.

- Land-use alternatives or change in standards may be required.
Hybrid Alternative

Roadway and Intersection Improvements

Safety or Circulation

- Gray Whale Cove turn lane/acceleration lane
- 16th Street median in Montara
- Signage to restrict and consolidate turning
- Traffic calming on main community streets
- Defined curb and gutter and stop signs on unsigned approaches
- Nurseryman driveway consolidation
- Left-turn pockets for businesses on SR-92
Roadway and Intersection Improvements

LOS Deficiency

Signalization at Highway 1 & California Ave, Cypress Ave, Grand Blvd/Terrace Ave, and Main Street (S)

Roundabouts at Highway 1 & Coronado St, Kehoe Ave, and SR-92 & SR-35

Additional lanes on Highway 1 between 9th Street and Etheldore St/Vallemar St and between Cypress Ave and Capistrano Rd (S)

Passing lane on SR-92 between Landfill Rd and Quarry Rd
Hybrid Alternative

- Bicycle and Pedestrian Improvements
  - High Priority Improvements
    - Parallel and Coastal Trail
    - Sharrows on main community streets
    - Bike lane on Capistrano Street
    - Striped crossings with beacons along Highway 1 and SR-92
Hybrid Alternative

- Bicycle and Pedestrian Improvements
  - Improvements to be considered given funding
    - Bike lane on SR-92
    - Traffic Signal updates for ped/bike safety
    - Bike lane on Airport Street
    - Sidewalks along Highway 1 and main community streets in high demand areas
Hybrid Alternative

Transit Improvements

High Priority Improvements
- Shuttle bus service during special events
- More frequent weekend SamTrans service
- Park-and-ride shuttle at community lots

Improvements to be considered given funding
- Local SamTrans Route
- Express SamTrans connection to regional transit providers during commute
- School Bus service
Parking Improvements

High Priority Improvements

- Formalized Montara State Beach parking
- Parking along Carlos Street
- Beach parking for El Granada west of Highway 1
- Wayfinding Signage

Improvements to be considered given funding

- Upper Gray Whale Cove parking lot
- Rancho Corra de Tierra access parking lot
Hybrid Alternative

Overall Maximum Cost Estimate = $83.9 M

-plus study cost estimates for Parallel and Coastal Trails, Airport Street Street Bike Lanes

-plus cost of acquisition or leasing of buses and facilities for shuttle and school bus service

-plus negotiated cost with SamTrans and Park-and-ride lot owners
Public and Stakeholder Outreach on Transportation Alternatives

- Web Site Outreach – April
- Workshop # 2 – April 15
- Briefing to Midcoast Community Council – April 8
- Briefing to Half Moon Bay City Council – April 21
Next Steps

- Workshop #2: Alternatives, April 15 2015
- Evaluation of Hybrid Alternative
- Development and Evaluation of Land Use Alternatives
- TAC Meeting #4, April 2015
Questions?
Roundabouts

LEGEND
- Red: Area required for roundabout but not for signal
- Blue: Area required for signal but not for roundabout

Greater impact at intersection

Additional turn lanes increase spatial requirements for signals

Potential outer footprint can include utilities, sidewalks, landscaping

5'-15' (Varies)