SCOPE OF WORK: Highway 1 Corridor in Tam Valley Transportation Resiliency Planning

INTRODUCTION:

The focus of the project will be increasing resilience for the area from the intersection of State Highways 101 and 1 north to Mill Valley in Marin County. In conjunction with other complementary efforts in the area addressing sea-level rise, tidal flooding, and increasingly significant storm surge flooding, this scope of work provides a more detailed analysis on the impacts to transportation infrastructure in the area and how those are interrelated to flooding issues affecting the study-area community at large.

RESPONSIBLE PARTIES:

Marin County staff will be responsible for managing all tasks including selection of consultants through proper procurement procedures. County staff will utilize a strong coalition of stakeholders that supported the development of the sea level rise program for the county and a successful track record with public engagement on climate change planning to focus efforts on developing options for this frequently flooded area.

OVERALL PROJECT OBJECTIVES:

- Utilize a track record of successful partnerships and public engagement strategies to advance short-, medium, and long-term sea level rise planning
- Fill critical gaps in the data and knowledge to provide the resources to develop sound conceptual ideas
- Develop an engagement effort to bring the community into planning for their future. Identify the interests of each stakeholder group and their feedback in the process. Engage the public to incorporate their input within the overall project area should additional funding be identified.
- Support state and local goals to protect and enhance multi-modal transportation and key infrastructure assets
- Support state and local mandates for adaptation and resilience including reduction of GHG emissions, updates to general plans, and regional planning for our transportation network in the face of climate change and sea level rise
- Develop a plan of action that captures the conceptual approaches and identifies next steps to move ideas forward

1. Project Management

Task 1.1 Project kick-off meeting

County staff will hold a kick-off meeting with Caltrans staff to set expectations and develop relationships for grant management, reporting, and invoicing. County staff will also meet with local Caltrans District 4 staff to coordinate on the project timeline, tasks, and to set expectations for coordination throughout the grant period.

- **Responsible Party:** Marin County
**Task 1.2** Procurement of consultant services
County staff will utilize proper procurement procedures to obtain consultant services. Copies of Marin County’s Request for Proposals (by task) and executed contract documents will be submitted to Caltrans.

- **Responsible Party:** Marin County

**Task 1.3** Grant invoicing
Submit invoices to Caltrans at least quarterly, but no more frequently than monthly.

- **Responsible Party:** Marin County

**Task 1.4** Quarterly reports
Submit quarterly reports to Caltrans tracking progress towards milestones and major project deliverables.

- **Responsible Party:** Marin County

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<tr>
<td>1.1</td>
<td>Kick off meeting summaries</td>
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<td>Copies of procurement procedures and executed contract(s)</td>
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<td>Quarterly reports</td>
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2. **Technical studies to develop conceptual adaptation strategies**

**Task 2.1 Understand existing infrastructure assets:** Infrastructure includes the roadway and underground storm water pipe system. Data exists for multiple agencies and their infrastructure. Most of the available data was collected and assessed for the 2017 Marin Shoreline Sea Level Rise Vulnerability Assessment. However, with the more focused review of options along the project reach, discussions around design criteria and for adapting existing facilities or for planning new facilities are needed. Additionally, newer data exists as related studies progress and this data will be incorporated into conceptual adaptation strategies. Survey data collection could be coordinated and this task would include collection and processing of additional data.

Existing problems along the Bay Trail include impacts to the bridges and paved path. Bridges that exist on the trail within the project area are at the end of their service life and are in need of structural rehabilitation or replacement in the near term. The elevation of the majority of the trail is lower than the maximum observed tide event and will increase with sea level rise. The pavement condition is deteriorated and in need of repair.

- **Responsible Party:** Marin County with consultant support

**Task 2.2 Creek alignment analysis:** A Coyote Creek lower reach realignment into Bothin Marsh could potentially reduce flooding in the area by redirecting tidal flows away from interior drainage ditches and into the marsh. This evaluation would include a topographic survey of existing conditions in Bothin Marsh, and a hydrologic and hydraulic analysis of realignment of the
lower reach. Possible creek realignments will be analyzed as part of the review of various flooding scenarios and its impact on the transportation corridor.

- **Responsible Party:** Marin County staff with consultant support

**Task 2.3 Identification of adaptation strategies:**
Possible considerations include raising and reconfiguring the roadway, pedestrian access and storm water drainage; possible pump system(s); dredging; a low-slope levee with wetland restoration; or other possible scenarios. The goal of the subtasks in Task 2 is to define a range of adaptation strategies that address individual issues through a comprehensive approach to gain input from the community on feasible alternatives.

Technical reviewers will be used to assist with development of potential conceptual designs that would incorporate the data analyzed with additional expertise in highway operations and design, bikeway design, order of magnitude cost estimates, landscape architecture, ecosystem services, hydrologic processes, biological processes, and geomorphic processes. Funding options and preliminary cost estimates would be included in community dialogue to better communicate the range of feasible alternatives.

The final set of strategies along with public input will be summarized to provide guidance as to next steps towards developing adaptation measures that address the varied needs and flood future in the project area.

- **Responsible Party:** Marin County staff with consultant support

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<th>Task</th>
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<tr>
<td>2.1</td>
<td>Survey data and processed data layers with sea level rise scenarios</td>
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<td>2.2</td>
<td>Creek modeling of a lower reach re-alignment of Coyote Creek</td>
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<td>2.3</td>
<td>Adaptation strategies presented as technical memos, graphics and maps, and presentation materials to share with the public. Summary of findings will be developed along with next steps.</td>
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**3. Community Engagement**

**Task 3.1 Public engagement planning**
The project area extends from east of the Highway 101/1 interchange along the Richardson Bay shoreline to Mill Valley. The project is focused on the roads and Bay Trail, which includes the communities of Marin City, Sausalito, Tam Valley, Almonte, and Mill Valley. The communities themselves are one aspect of the needed outreach, but the different user groups are the more relevant stakeholders. They include the trail users: commuters and recreational users; those using the roads through the corridor, students and staff at the middle and high schools, environmentalists, those concerned with flooding along Coyote and Arroyo Corte Madera del Presidio Creeks, and the businesses along both sides of the road.
The County has led outreach in a number of specific areas related to this grant: flood control, sea level rise, city and county-specific projects on the trail and along the road(s), and for Bothin Marsh. Flood Control meetings focus on the watershed area from Marin City to Mill Valley and include advisory board members comprised of residents in the community. A regular issue of concern has been the flooding at Manzanita. Sea level rise meetings with the public included one at the Mill Valley Community Center with over 200 people attending and a permanent public exhibit is located along the trail near the high school to solicit citizen science in tracking sea level rise. Outreach and engagement has also targeted resource agencies, design committees, flood advisory boards, and disadvantaged communities in the past and an effort will be made to include these and possibly extend the outreach to additional groups in the community. Other meetings for the trail and road work and trail work have been led by County Parks and Public Works. Several improvements have occurred on the path including a roundabout and trail surface improvements. Despite the work that has occurred in the past, the grant will allow for a more focused look at the impacts to users of the road and trail corridor to the extent possible through coalitions like school district meetings, bike coalitions, flood and sea level rise advocates, etc. In order to engage this broad public, an effort will be made to go to the user groups at their meetings and to use more creative methods of outreach to involve the public to engage in understanding the problem and to develop solutions that have public support into the future.

Staff will develop a plan for public outreach and engagement to reach a broader audience and target groups who may not typically participate, such as outreach through local community groups and organizations that have regular contact with a wider range of constituencies. Since this area is a key transit and shuttle boarding and transfer corridor, outreach to transit and shuttle users will be imperative to hear their concerns. Utilize existing communications tools (newsletters, email lists, websites, etc.) to share the adaptation strategies.

- **Responsible Party:** Marin County staff with consultant support

### Task 3.2 Community workshops

Hold at least two community meetings to share the issues, adaptation strategies, and to receive input from the public on options. The intent is to solicit initial thoughts and concerns that would be further studied as strategies move forward. Maximizing outreach techniques and directly engaging the public will provide a more robust set of issues and concerns for consideration, particularly given this area’s significant transportation infrastructure which, when flooded, creates disruption countywide.

- **Responsible Party:** Marin County staff with consultant support

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<tr>
<td>3.1</td>
<td>Meeting summaries for public engagement and communications documents</td>
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<tr>
<td>3.2</td>
<td>Community meeting summaries</td>
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