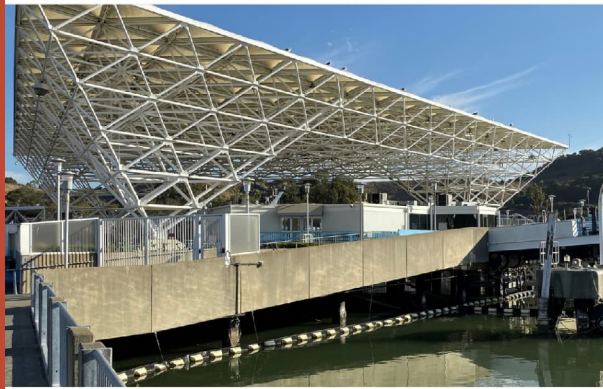




# Progress Update

Larkspur Ferry Service and Parking Expansion:  
Environmental Clearance and  
Preliminary Design Study

April 4, 2024





# Agenda

1. Project Overview
2. Progress Updates
3. Next Steps



# 1. Project Overview



## Project Overview and Background

Prior to the pandemic, Larkspur ferry service to San Francisco experienced continued growth, with full boats and parking at the Larkspur Ferry Terminal (LFT):

<b>Larkspur ferry ridership trends</b>	25% growth (2005-2019)
<b>Larkspur ferry trips</b>	- 40/day (42 in summer) - Maximum 42 trips/day (prior environmental clearance)
<b>Main parking lot</b>	- At capacity by 10 a.m. weekdays - Often at capacity by 9:30 or before; overflow lot also often at capacity
<b>Customer arrival mode at LFT</b>	79% park at the terminal



## Project Overview – Scope

The study examines how the Larkspur Ferry Terminal can accommodate future increases in demand and reduce congestion on the U.S. Highway 101 corridor

- Forecasting future ferry service demand over 5-, 10- and 20-year horizons
- Developing and selecting a preferred Larkspur Ferry Terminal parking structure and landside access scenario to meet future demand
- Develop project consensus through stakeholder and community outreach
- Seek environmental clearance and develop preliminary parking structure design for ferry service and parking expansion, in preparation for future phases of project completion



## 2. Progress Updates

- A. Stakeholder Outreach
- B. Wake Wash Analysis
- C. Ferry Demand Forecast Findings
- D. Preliminary Parking Concepts



# A. Stakeholder Outreach



## Summary of Outreach

- Goal: Understand the needs, issues, drivers, and likely key questions and areas of concerns of the Study
- Work Completed: 25 Stakeholder Interviews
- Stakeholder Groups:
  - Government and Elected Officials
  - Environmental Organizations
  - Commercial and Residential Property Owners
  - Community-Based Organizations
  - San Francisco and Regional Leaders
  - Transportation Agencies and Transit Groups
  - Business Leaders





## What We Heard

- Congestion on Sir Francis Drake Boulevard
  - Limited parking
  - SMART nexus and the U.S. Highway 101 / Interstate 580 connector
- Decrease of Ridership
  - Ridership impacted as fewer people commuted for in-person work during COVID-19
- Environmental Impact Report
  - Requests for access to subject matter experts on environmental topics related to the Study
- Transit Connectivity
  - Make ferry trips and services synchronous with other forms of public transit, such as SMART and Marin Transit
- Impacts to Nearby Residents
  - Ferry wake
  - Impact on surrounding wetlands and habitats
  - Visual impact of expanded parking

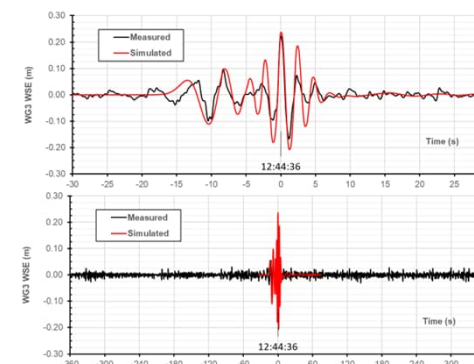
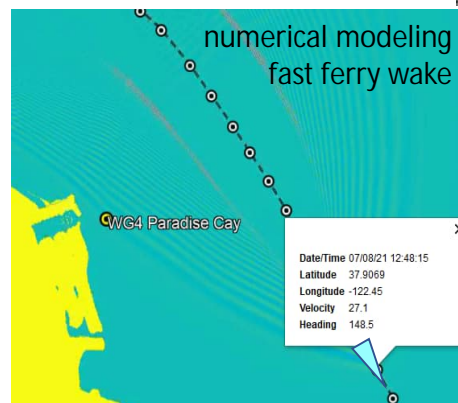


## B. Wake Wash and Shoreline Erosion Analysis



# Overview – Ferry Wake Analysis

- **Objective:** assess the impact of GGBHTD ferry wakes in the vicinity of the Corte Madera Channel and including the Paradise Cay Yacht Harbor.
- **Methodology:** for the baseline (actual) condition:
  - performed measurements at 6 wake gauge locations (WG)
  - defined design ferries: NAPA and SPAULDING CLASS
  - collected actual ferry tracks (location, speed, heading)
  - for each design ferry, selected one inbound and one outbound tracks
  - simulated wake generation and propagation
  - compared simulations and measurements
  - assessed wake impacts



Comparison: measurement / simulation



# Wake Impact Analysis





# Summary – Fast Ferry and Spaulding

## Fast Ferry (multi-hull/catamaran) and Spaulding Characteristics

- Multi-hulls have shallower drafts and more beam, displacing less water and therefore producing less wake
- Multi-hulls are wider and more stable, reducing rolling and pitching which can contribute to wakes
- Multi-hulls can plane at high speed, reducing submerged volume and resulting in less drag and wake
- Spaulding-class vessels must operate under speed restrictions into San Francisco Bay to reduce wake impacts

## Fast Ferry (catamaran)

### No impact

- Corte Madera Marine Ecological Reserve Marsh
- Mudflat Erosion
- Mudflat Water Turbidity
- Natural Shorelines

- Shoreline Protection Structures
- Docks and Boats
- Passive boating – Corte Madera Creek Inlet and mudflat, Paradise Cay Yacht Harbor

### Moderate impact

- Passive boating (rowing) – Corte Madera Channel

## Spaulding-Class Ferry – extended speed restrictions into San Francisco Bay

### No impact

- Corte Madera Marine Ecological Reserve Marsh
- Mudflat Erosion
- Mudflat Water Turbidity
- Natural Shorelines

- Shoreline Protection Structures
- Docks and Boats
- Passive boating – Corte Madera Creek Inlet and mudflat

### Moderate impact

- Passive boating (rowing) – Corte Madera Channel, Paradise Cay Yacht Harbor (north and south basins)



# Larkspur Ferry – Future Operations

- **October 2023 Board Action**
  - Vote to move towards all high-speed catamaran (fast ferry) operations in lieu of retrofitting Spaulding-class vessels
  - Future fleet will consist solely of fast ferries
- **Fast Ferry Characteristics**
  - Key criteria for wake generation – hull design, displacement (weight)
  - Wake characteristics are similar across vessels of similar size
- **Environmental Review**
  - Baseline (current fleet): mix of fast ferry and Spaulding-class vessels
  - Future: fast ferry (catamaran) only



# C. Ferry & Parking Demand Forecast Findings



# Challenges and Assumptions

- Covid

- Work from home (WFH) impacts - Downtown SF office vacancy rate to increase from below 5% to approximately 30% in early 2023.
- WFH rates in Marin County increased significantly from 11.4% before the pandemic to 42% during the pandemic.

- Ridership Forecast Range

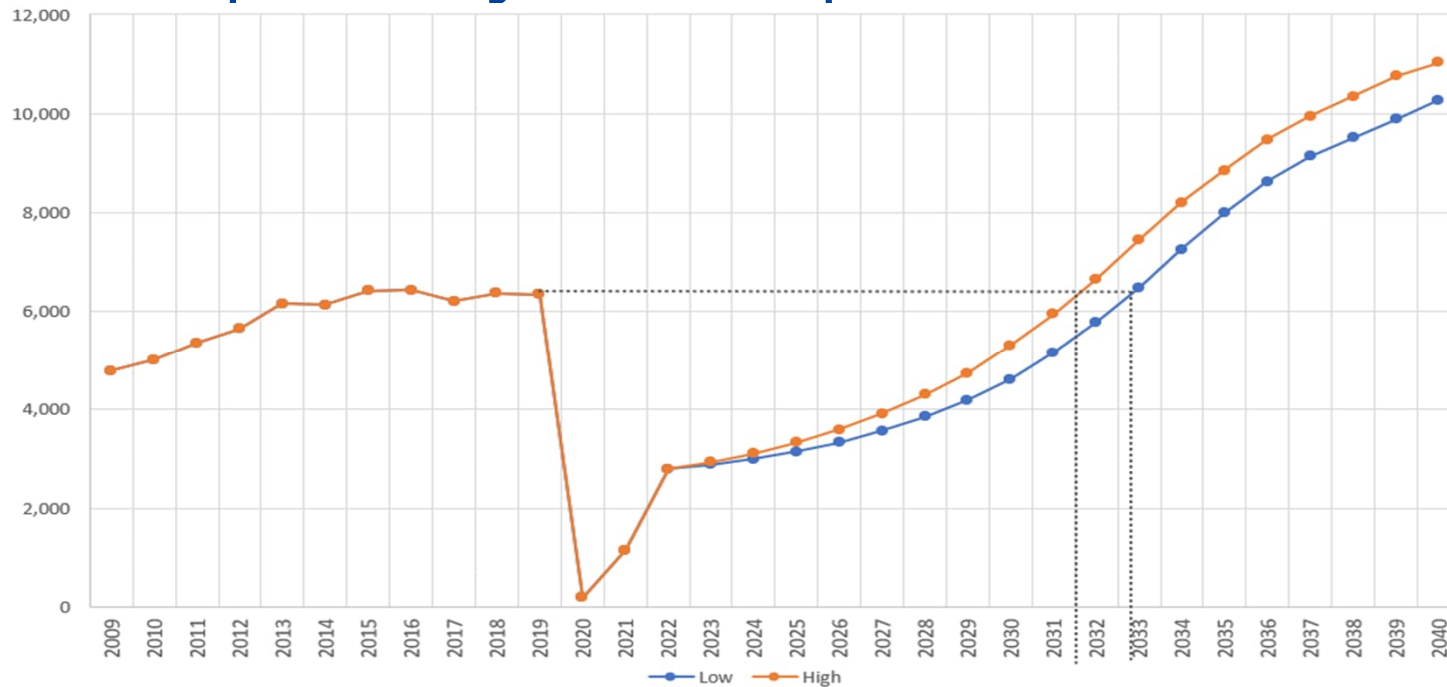
Developed from three WFH Scenarios:

- Pre-COVID (high): 11.4% WFH
- Mid-point: 25% WFH
- Peak COVID (low): 42% WFH





# Larkspur Ferry Ridership Forecast



	Existing (2019)	5-Year (2025)	10-Year (2030)	20-Year (2040)
85 <sup>th</sup> Percentile Daily Ridership	6,348	Low: 3,142 High: 3,326	Low: 4,614 High: 5,307	Low: 10,268 High: 11,031
85 <sup>th</sup> Percentile Southbound Ridership	3,120	Low: 1,645 High: 1,742	Low: 2,416 High: 2,779	Low: 5,377 High: 5,765



## Conclusions and Recommendations

- Covid impacts (WFH and high office vacancy rates) on Larkspur Ferry Ridership would require a few more years to understand
- Continued, shifting ridership characteristics, increases in mid-day, weekend and non-work trips; higher mid-week work trips
- Increased U.S. Highway 101 congestion in the Marin/Sonoma corridor from intra-county suburb to suburb trips will benefit demand for the Larkspur Ferry
- District should monitor ferry ridership changes every 2 years and update future ridership for 2025 and 2030 based on actual ridership data
- Should market conditions change in downtown San Francisco, ferry ridership may return to 2019 levels sooner than forecast



# Larkspur Ferry Parking Demand Forecast

## Parking Demand Forecast

	Existing (2019)	5-Year (2025)	10-Year (2030)	20-Year (2040)
85 <sup>th</sup> Percentile Daily Ridership	6,348	Low: 3,142 High: 3,326	Low: 4,614 High: 5,307	Low: 10,268 High: 11,031
85 <sup>th</sup> Percentile Southbound Ridership	3,120	Low: 1,645 High: 1,742	Low: 2,416 High: 2,779	Low: 5,377 High: 5,765
Parking Demand	2,023	Low: 1,070 High: 1,139	Low: 1,570 High: 1,800	Low: 3,490 High: 3,740
Recommended Parking Supply	2,023	2,023 (no change)	2,023 (no change)	Low: 3,700 High: 3,900
Special Event Parking Demand (Weekday AM Departure)	Cannot be determined	0-542 <sup>1</sup>	0-542 <sup>1</sup>	0-542 <sup>1</sup>

Note: 1. Future weekday afternoon special event parking demand is estimated based on commuter mode of arrival, which must be verified by a mode of arrival survey.



## Parking Demand - Overview

- Parking demand ranges developed based on high and low estimates from ferry ridership forecast
- Parking turnover is minimal since most parked vehicles remain for entire day
- Recommends a 5% reserve to reduce hunting for parking and accommodate peak of the peak parking demand (i.e. special events)



# D. Preliminary Parking & Landside Access Concepts



# Facility Design Considerations

- **Visual impacts**
- **Seismic stability**
- **Pedestrian access**
- **Demand management**
- **Multimodal and multi-use**
- **Bay and environmental impacts**
- **Displacement during construction**
- **Phased approach:** near/medium and long-term needs





# Main Lot Hexagon & Overflow - Overview

## Pro

- Lower construction impact on main lot
- Supports phased construction: re-assess parking demand before proceeding finalizing main lot design
- Supports multi-modal travelers
- Can be developed to meet parking demand forecasts
- Overflow lot: lower foundation cost

## Con

- Overflow lot further from the ferry terminal
- Overflow lot: least efficient delivery of parking spaces
- Pedestrian accommodations will be needed

### Overflow Garage

Number of Levels: 5

Typical Stall Size: 9'-0" x 18'-0"

Stalls per Floor: 145

Total Number of Stalls: 725

Total Number of Stalls w/ 8'-6" x 18'-0"

Stall Size: 800

### Main Lot Garage

Number of Levels: 3

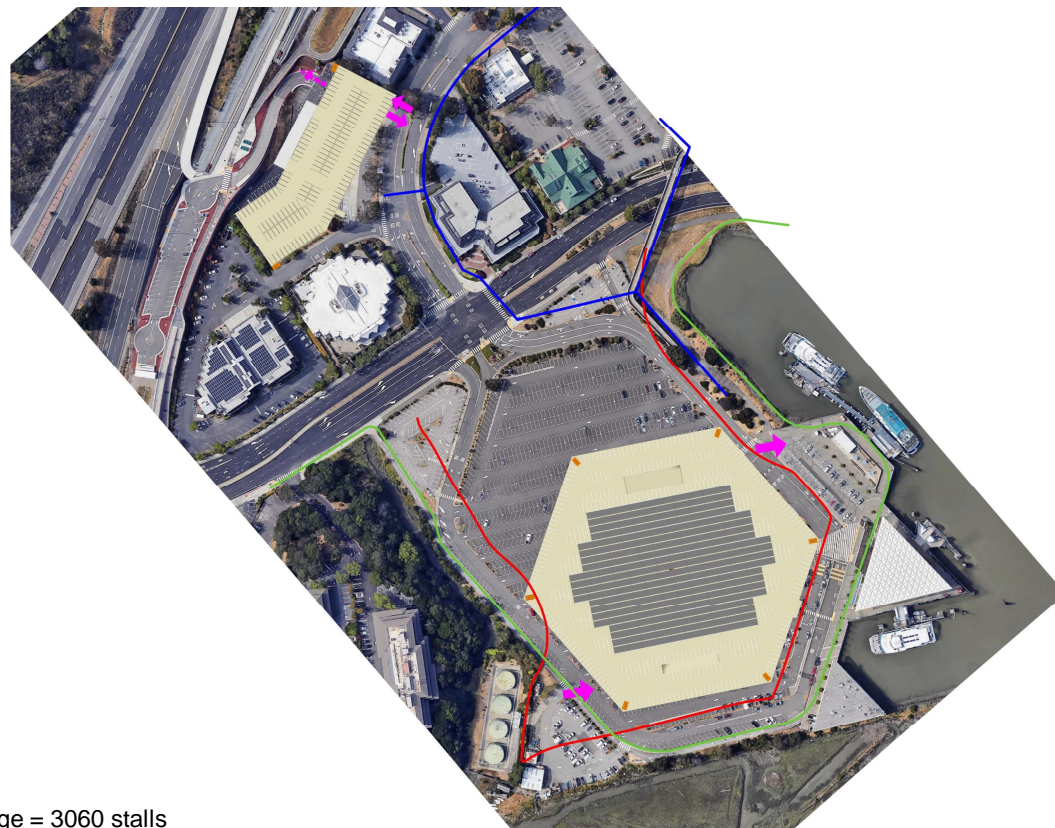
Typical Stall Size: 8'-6" x 18'-0"

Stalls per Floor: 770

Total Number of Stalls: 2310

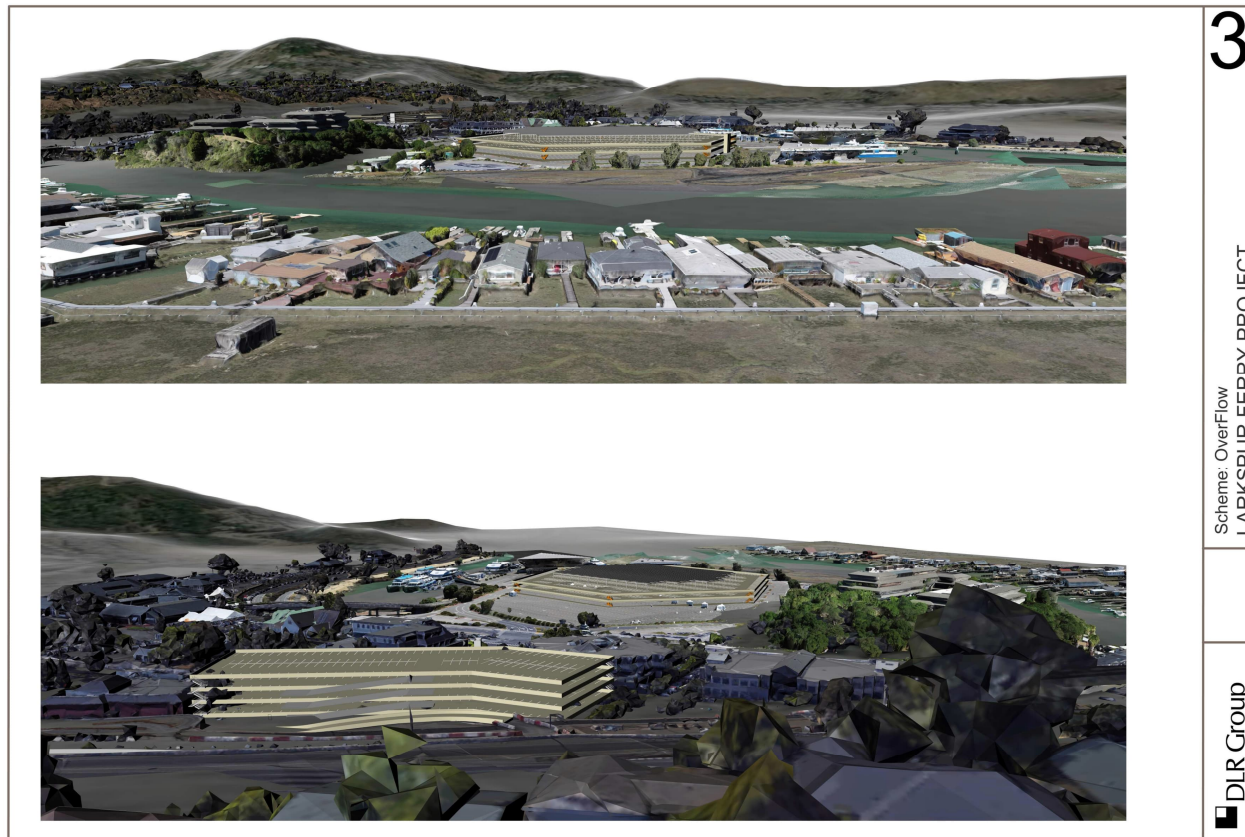
Solar Area Shown: 9120 (sf)

Overflow Garage + Main Lot Garage = 3060 stalls





# Main Lot Hexagon & Overflow - Views



3

Scheme: OverFlow  
LARKSPUR FERRY PROJECT







# Key Issues and Evaluation Approach

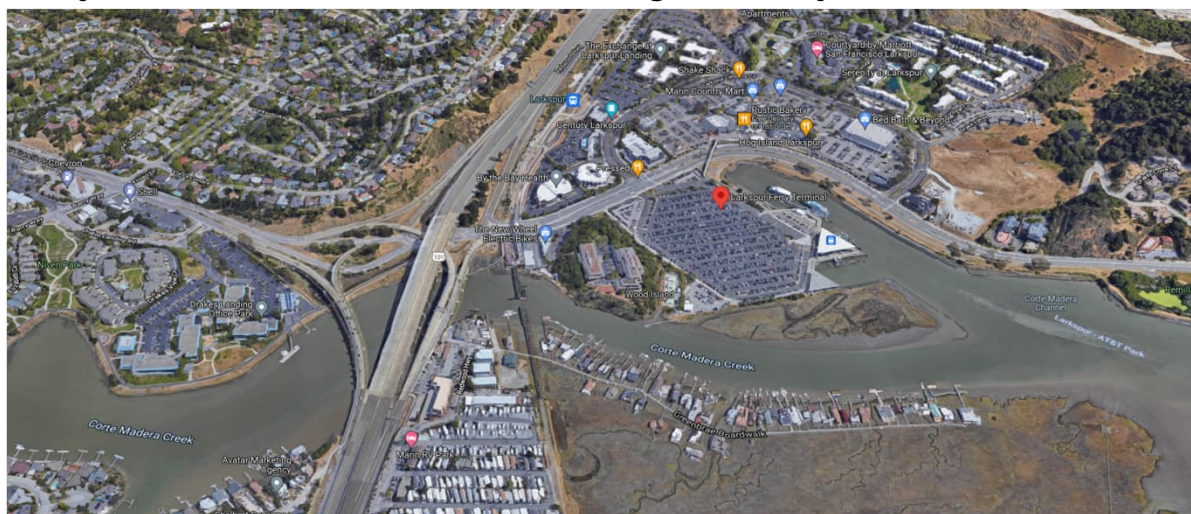
## Areas of Concern (stakeholders)

- Wake wash
- Visual impacts
- Traffic

## Evaluation criteria overview

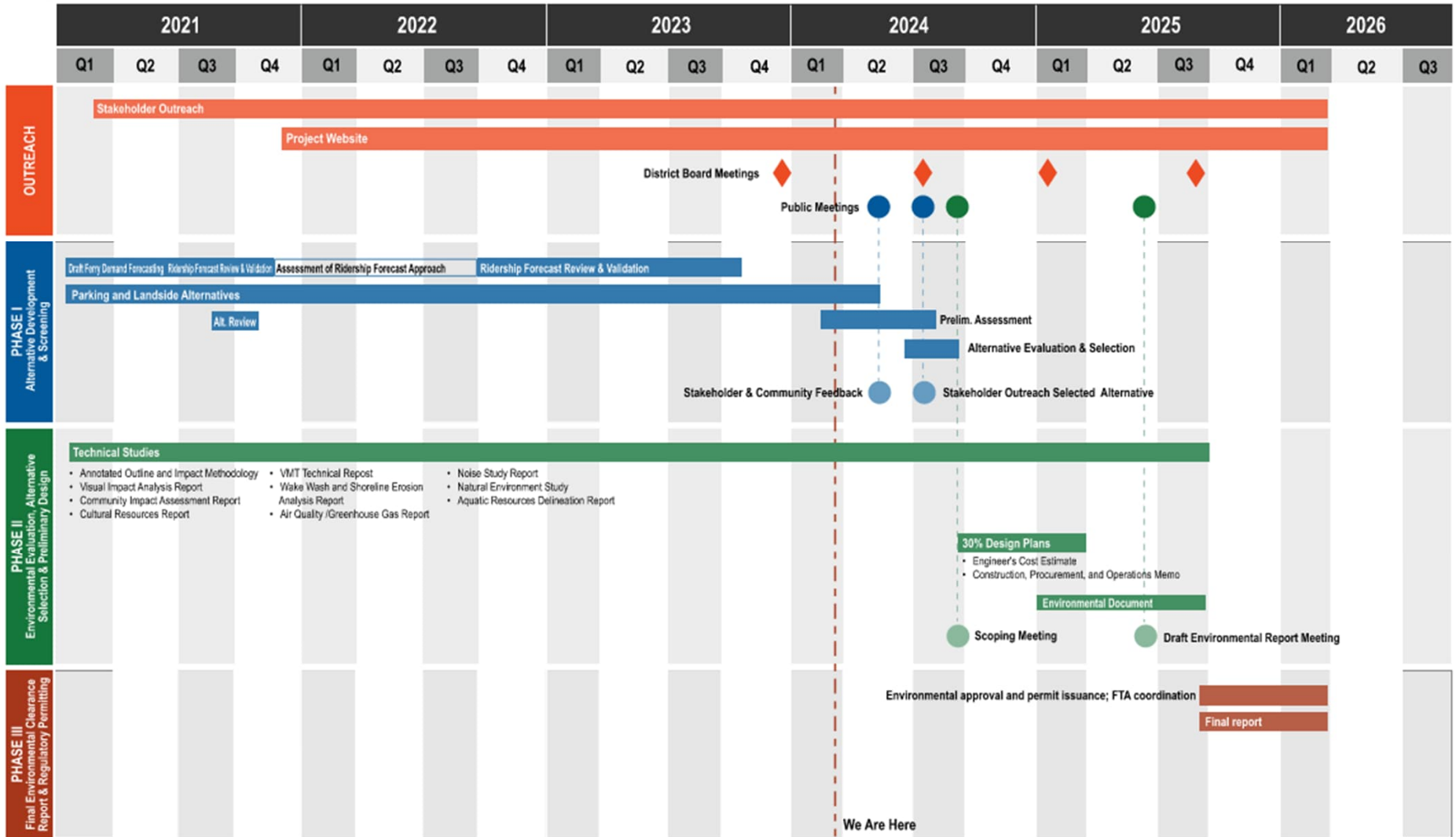
- Sustainability & Climate Resiliency
- Mobility & Accessibility
- Community & Environment
- Cost

Project Area View: US 101 interchange and adjacent





# 3. Schedule and Next Steps





# Current and Upcoming Activities

- **Underway (early 2024)**
  - Preparation for May 14, 2024, Open House
  - Preliminary Evaluation of Parking Concept Alternatives
  - Open House – May 14, 2024
- **Upcoming Activities (2024 - 2025)**
  - Parking Concept Re-evaluation and Selection
    - Incorporate stakeholder input > Select project alternative > Outreach to stakeholders and public re: selected alternative
  - CEQA Review and Preliminary Design Study



*Larkspur Ferry Service and Parking Expansion Environmental Clearance and Preliminary Design Study*

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**Jacobs**