CITY OF PALO ALTO

MATADERO CREEK RENATURALIZATION

November 5, 2020

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WRA Representatives

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NVCAP
Matadero Creek
Park Boulevard
Lambert Avenue
El Camino Real

Overview

- Planning Process
- Motivation
- Objectives
- Existing Conditions / Constraints
- Conceptual Design Alternatives
- Analysis and Discussion

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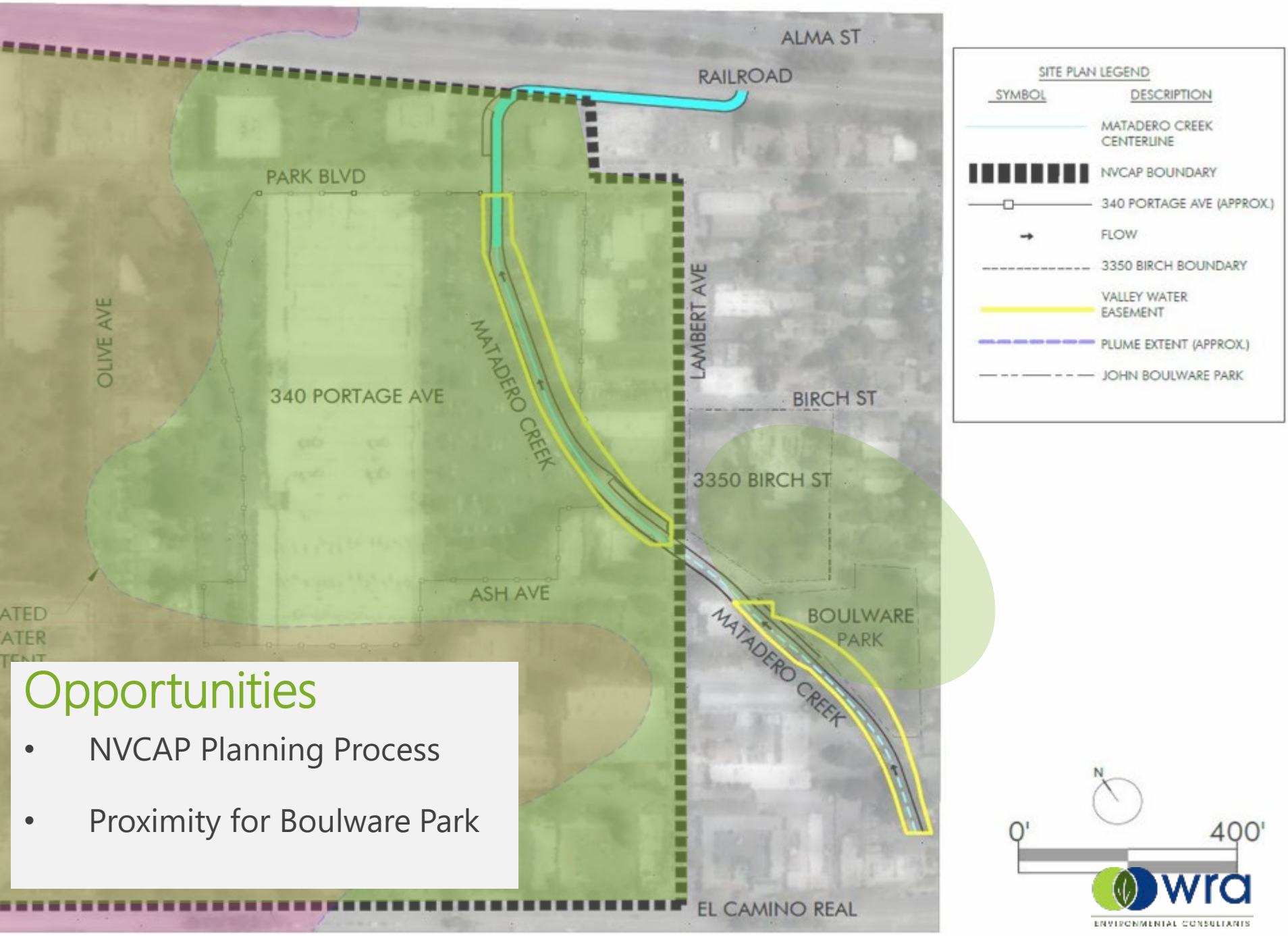
Motivation

- Lack of Public Access
- Poor Aesthetics
- Limited Habitat and Function
- Community Plans and Priorities

Objectives

- Provide and Enhance Public Access and Recreation
- Beautify the Creek Corridor
- Re-establish Riparian Habitat and Geomorphic Function



Opportunities

- NVCAP Planning Process
- Proximity for Boulware Park

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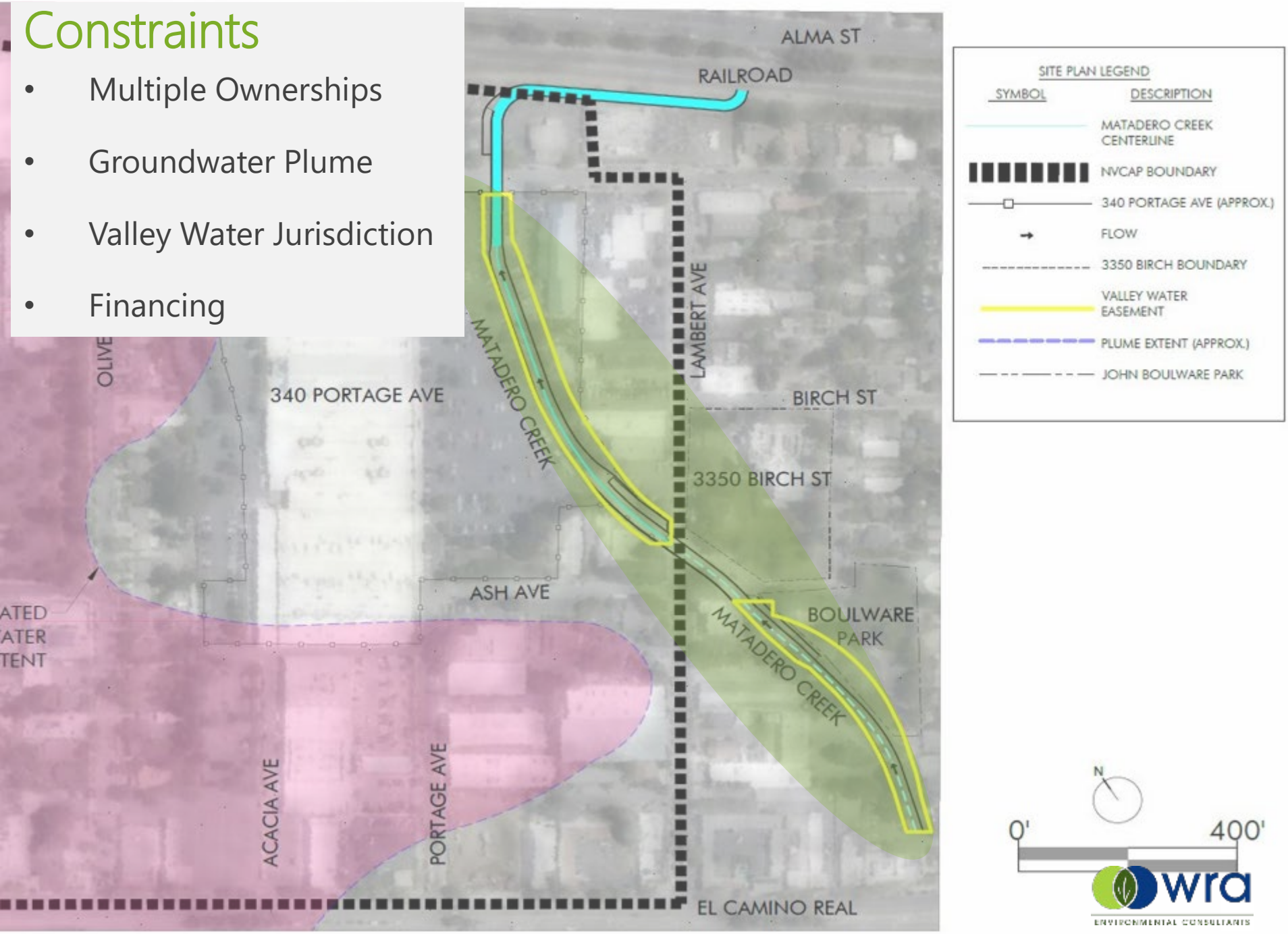
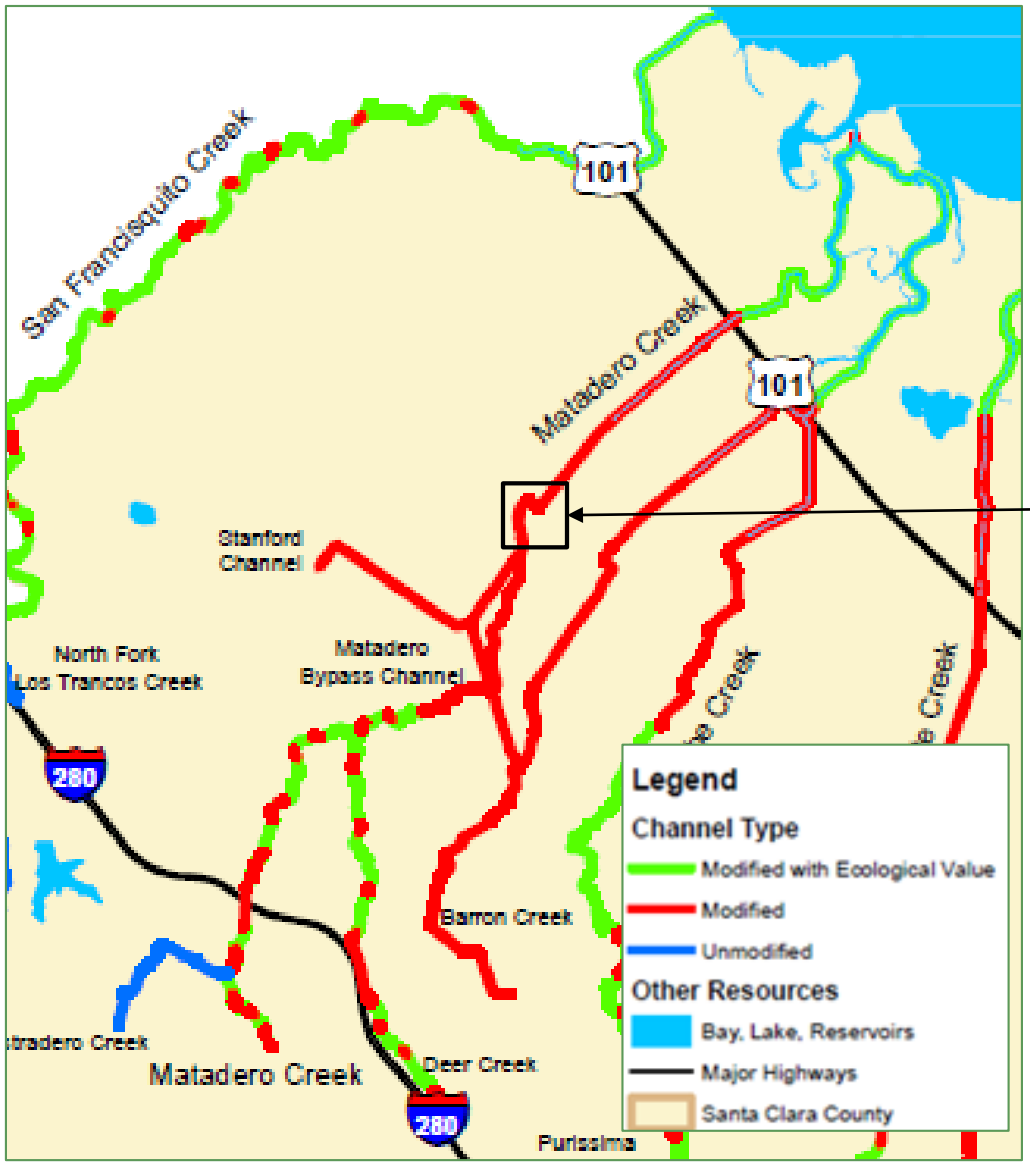
Constraints

- Multiple Ownerships
- Groundwater Plume
- Valley Water Jurisdiction
- Financing



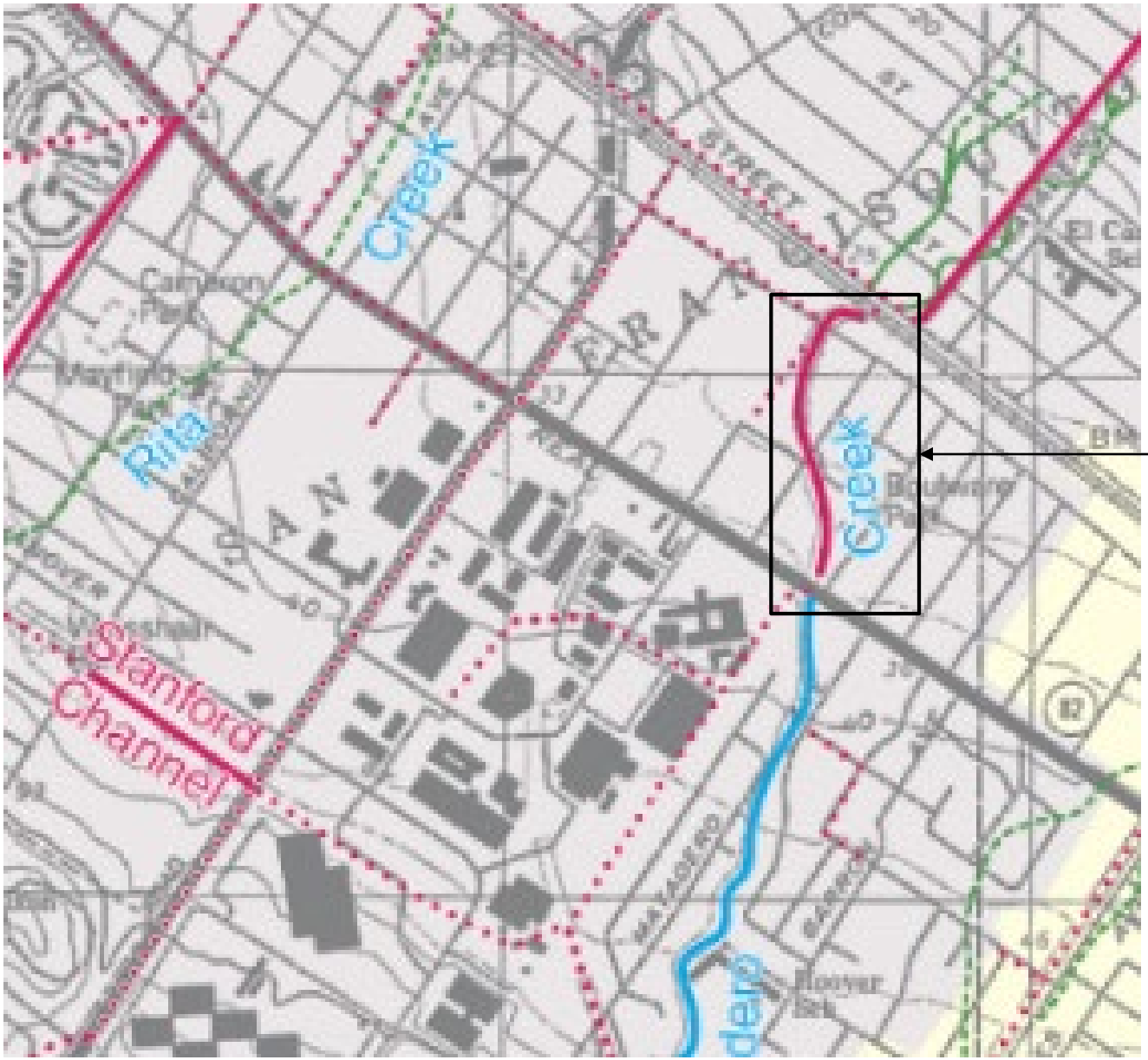
Existing Channel System



Study Reach is one portion of the modified channels in the flood management network

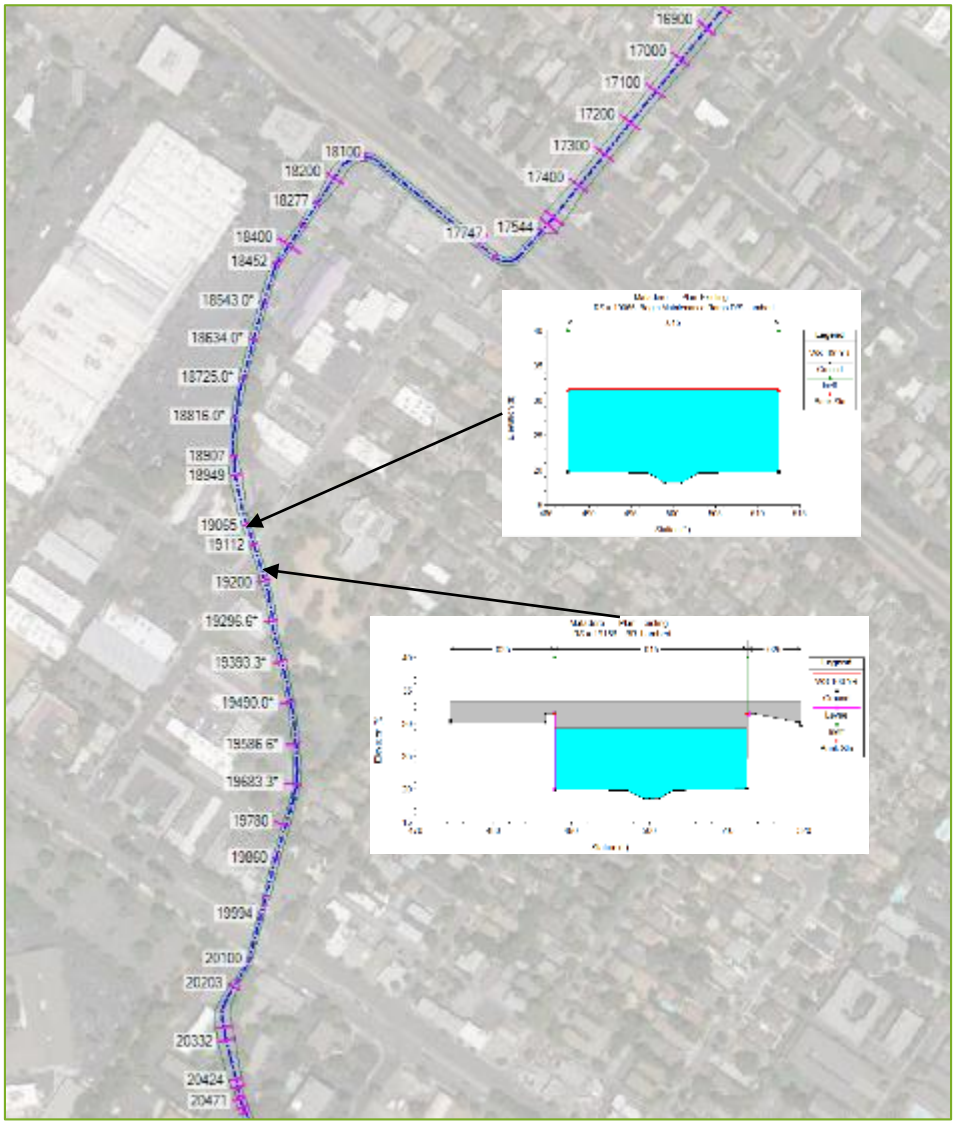
Source: Valley Water 2019

Urban Drainage Functions



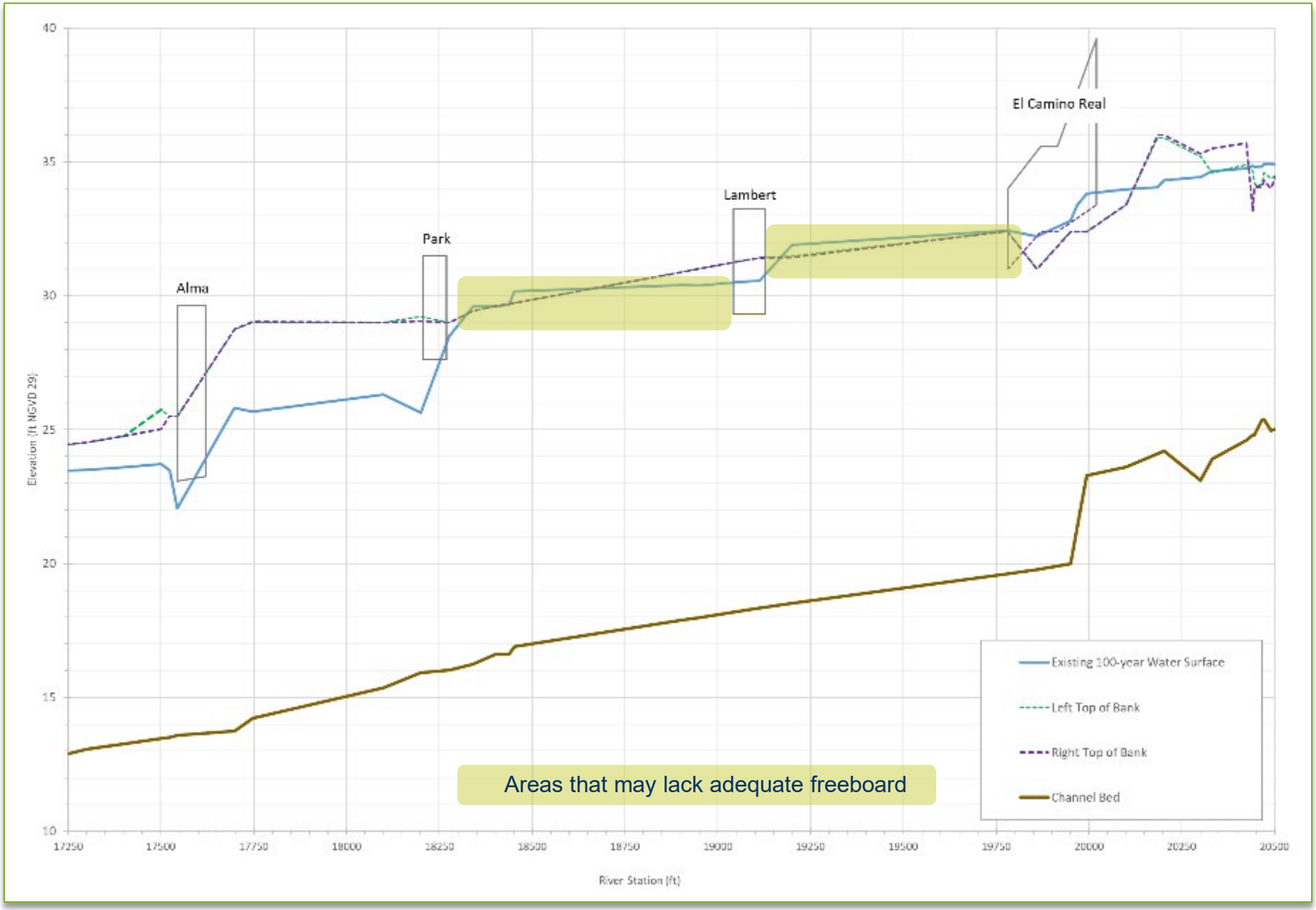
Study Reach is part of a complex urban drainage system

Existing Conditions Flood Model



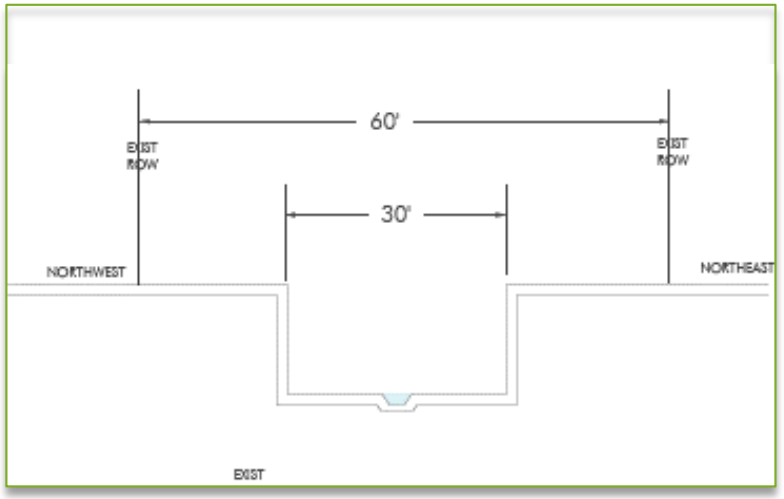
- 100-year peak flows
- By-Pass flow inputs
- Existing U channel shape and alignment
- Concrete surfaces
- Representing bridge structures

Existing Channel and 100-year Flood Profiles



Design Elements

to transform the existing channel…



- Natural Channel
- Vegetated Corridor
- Recreation Use
- Flood Protection
- Maintenance Access

San Luis Obispo Creek & pedestrian bridge example

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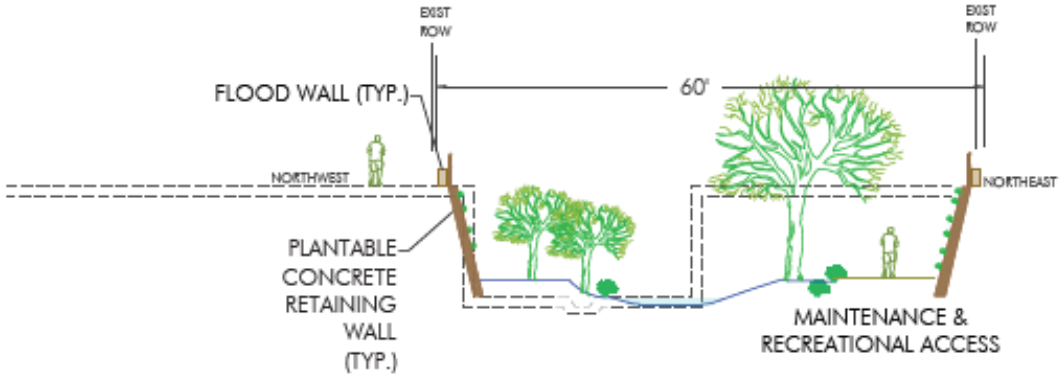
Three Tiers of Re-naturalization

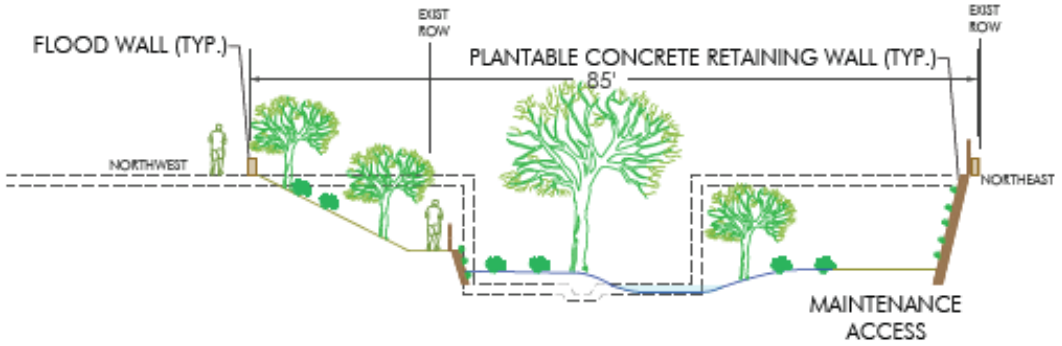
1. Enhanced

   -remains within current 60 foot ROW



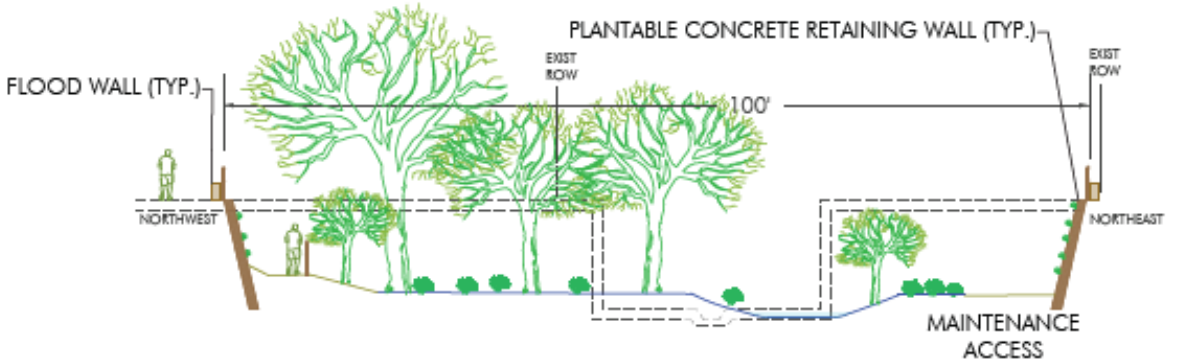
2. Widened

   -in an expanded 85 foot ROW



3. Maximum

   - in an expanded 100 foot ROW



Two Project lengths along Matadero Creek

- Park Boulevard to Lambert Avenue
  - (original ~800 feet)
- Park Boulevard through Boulware Park
  - (lengthened to ~1300 feet)

Three options for the Lambert Avenue Bridge span

- Existing (~25 feet)
- Widened (~60 feet)
- Maximum Extent (~80 feet)

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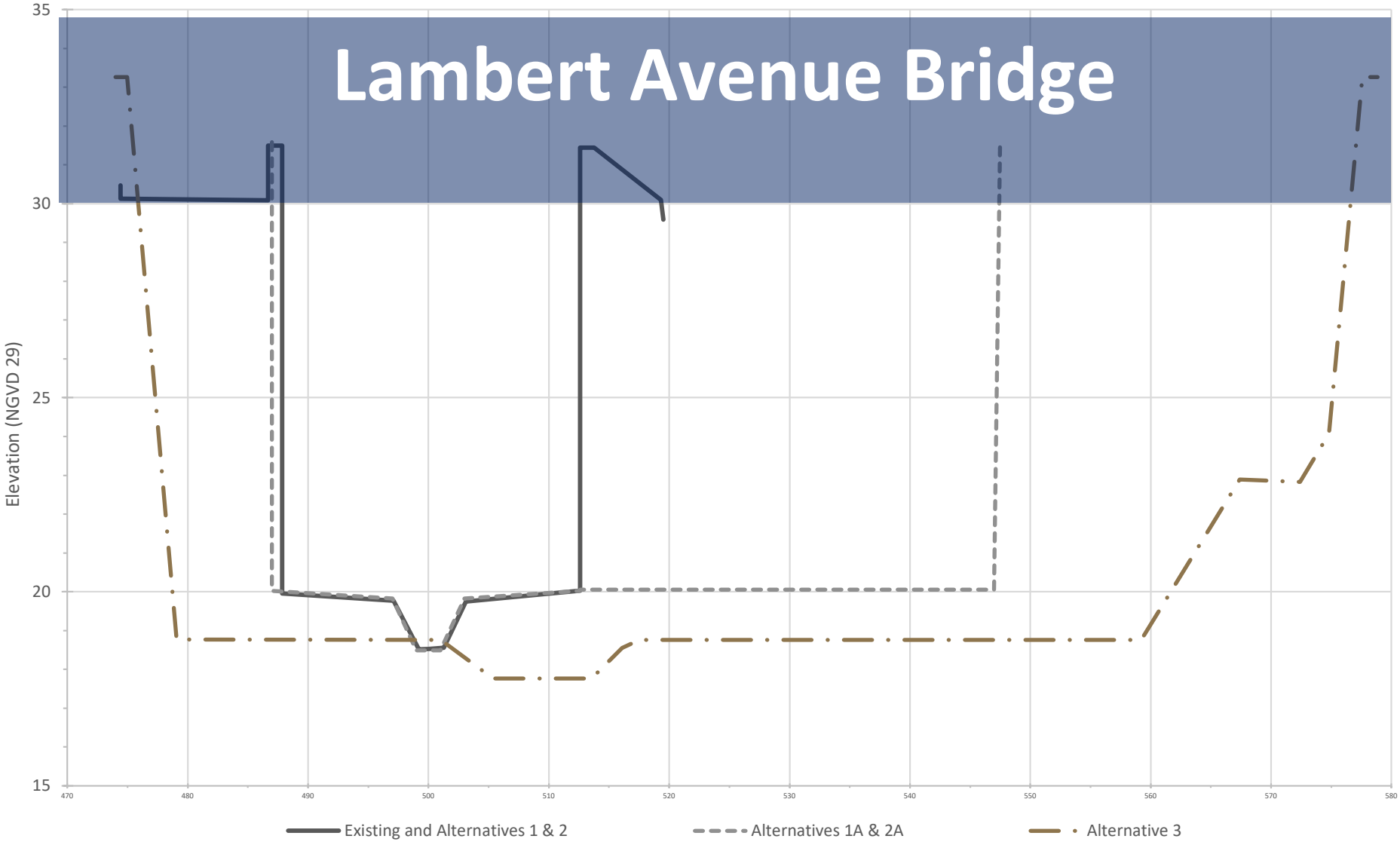
Lambert Avenue Bridge



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Concept Designs and Feasibility

- All FIVE concepts would demolish and remove the existing U-shaped concrete channel while providing for maintenance access
- All FIVE concepts could improve habitat, aesthetics, and recreation opportunities
- Hydraulic modeling indicates that THREE concepts appear feasible from a flood management perspective

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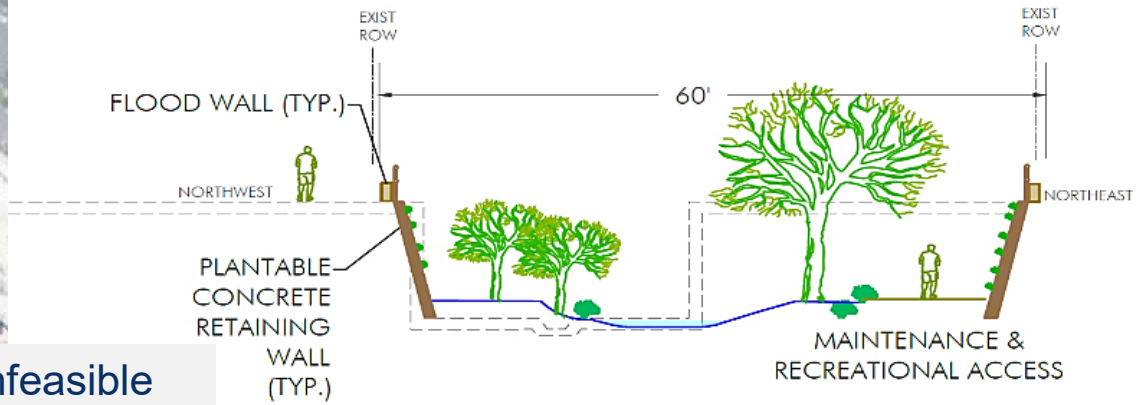
Concept #1: Enhanced Easement Corridor

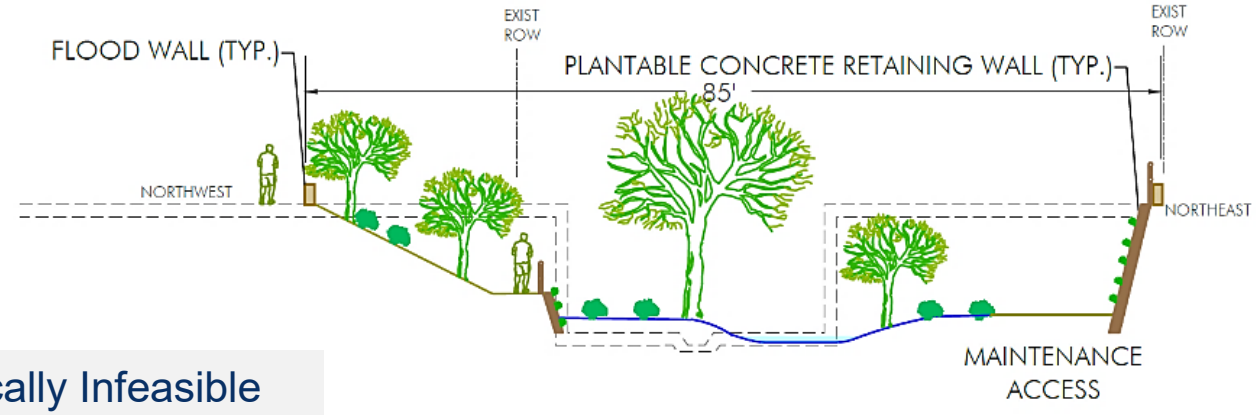
LEGEND

- ROCK VANE
- VW EASEMENT
- PLANTINGS
- FLOODWALL
- CREEK CENTERLINE
- PLANTABLE WALL
- NVCAP BOUNDARY
- PLUME EXTENT
- 340 PORTAGE



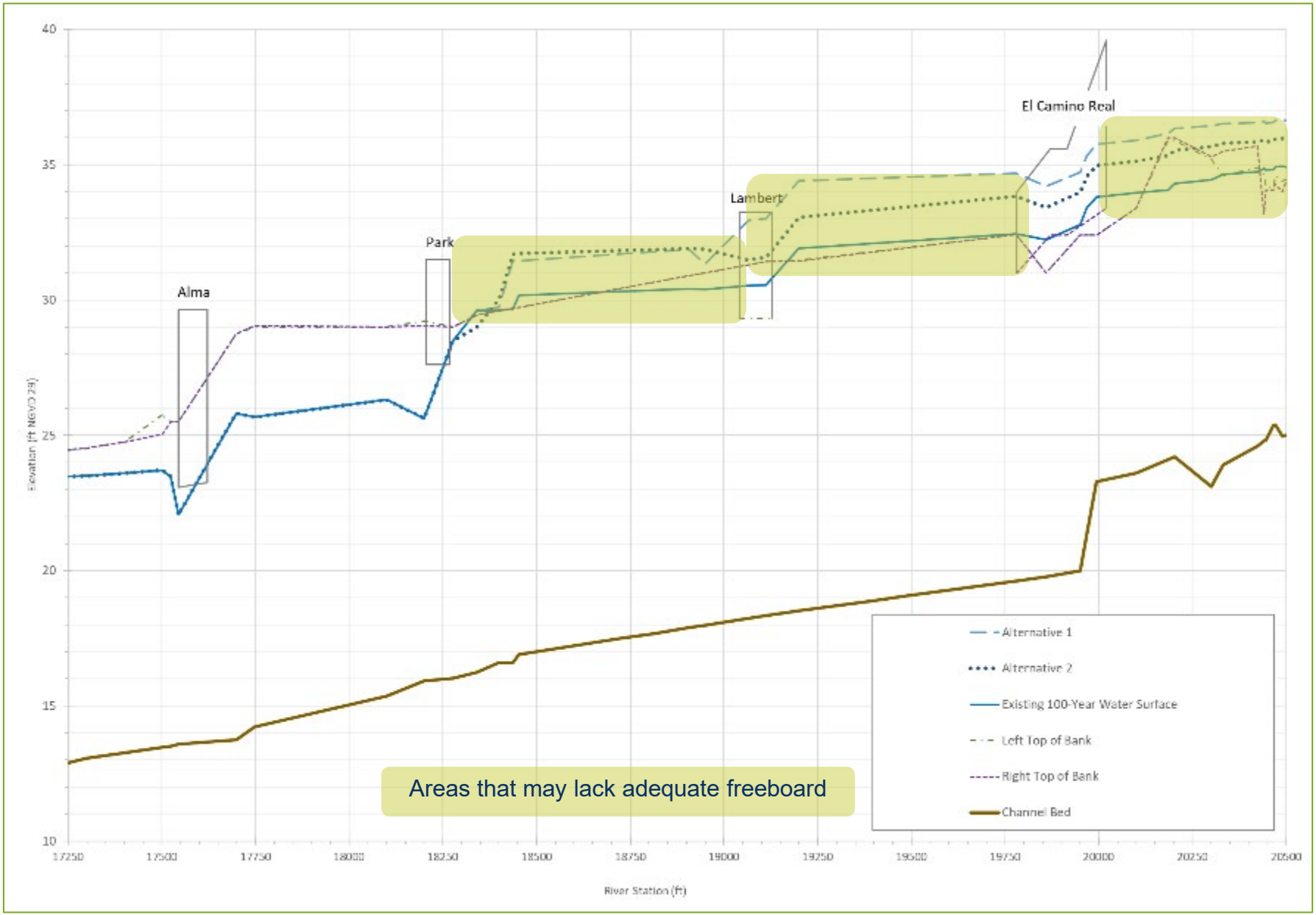
Hydraulically Infeasible

Concept #2: Widen Corridor with Bank Angle Reduction

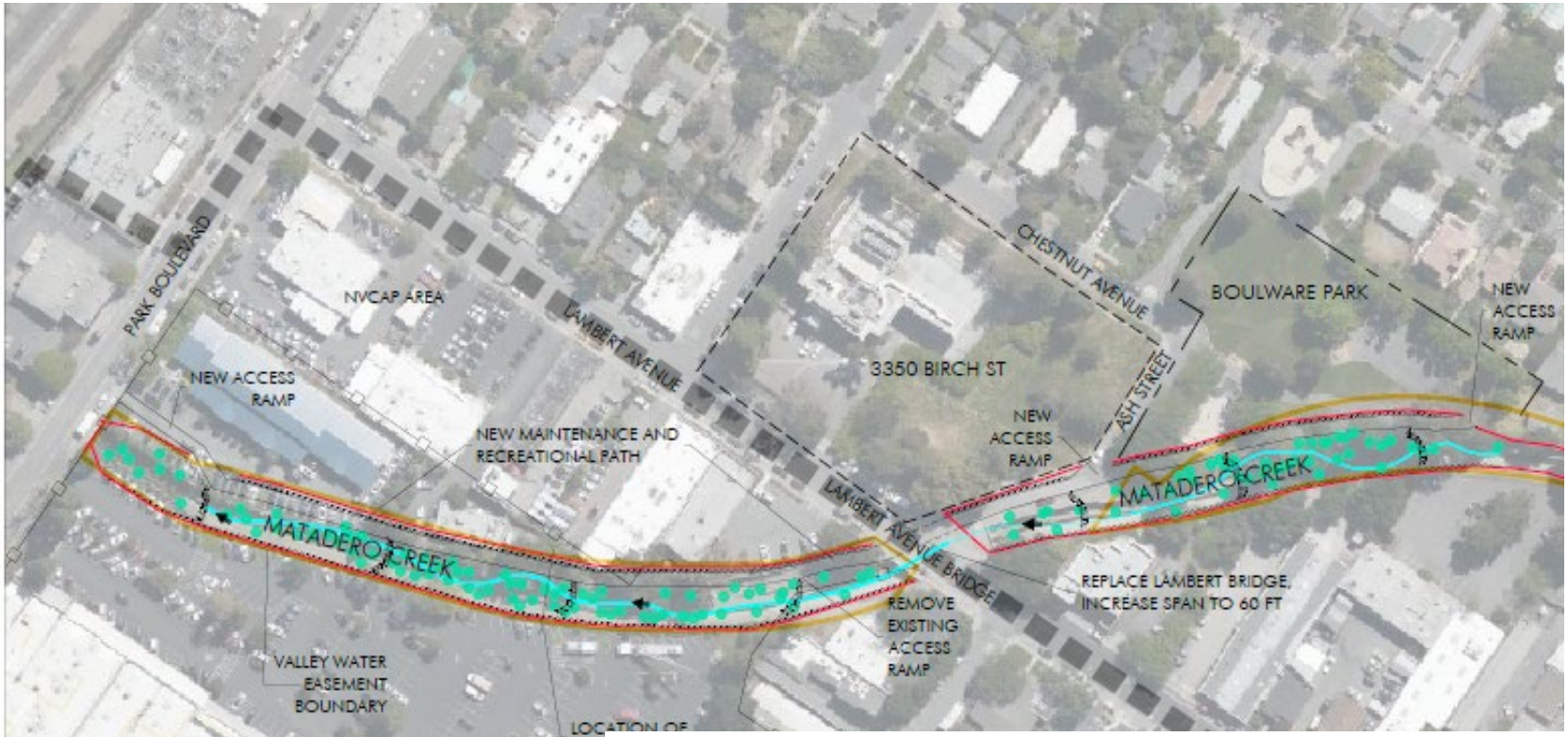


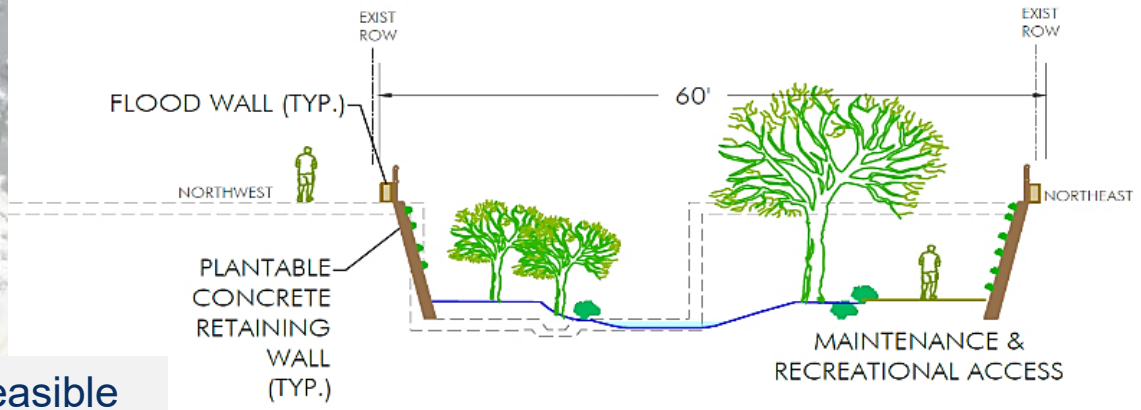
Hydraulically Infeasible

100-year Flood Profiles for Concepts 1 and 2



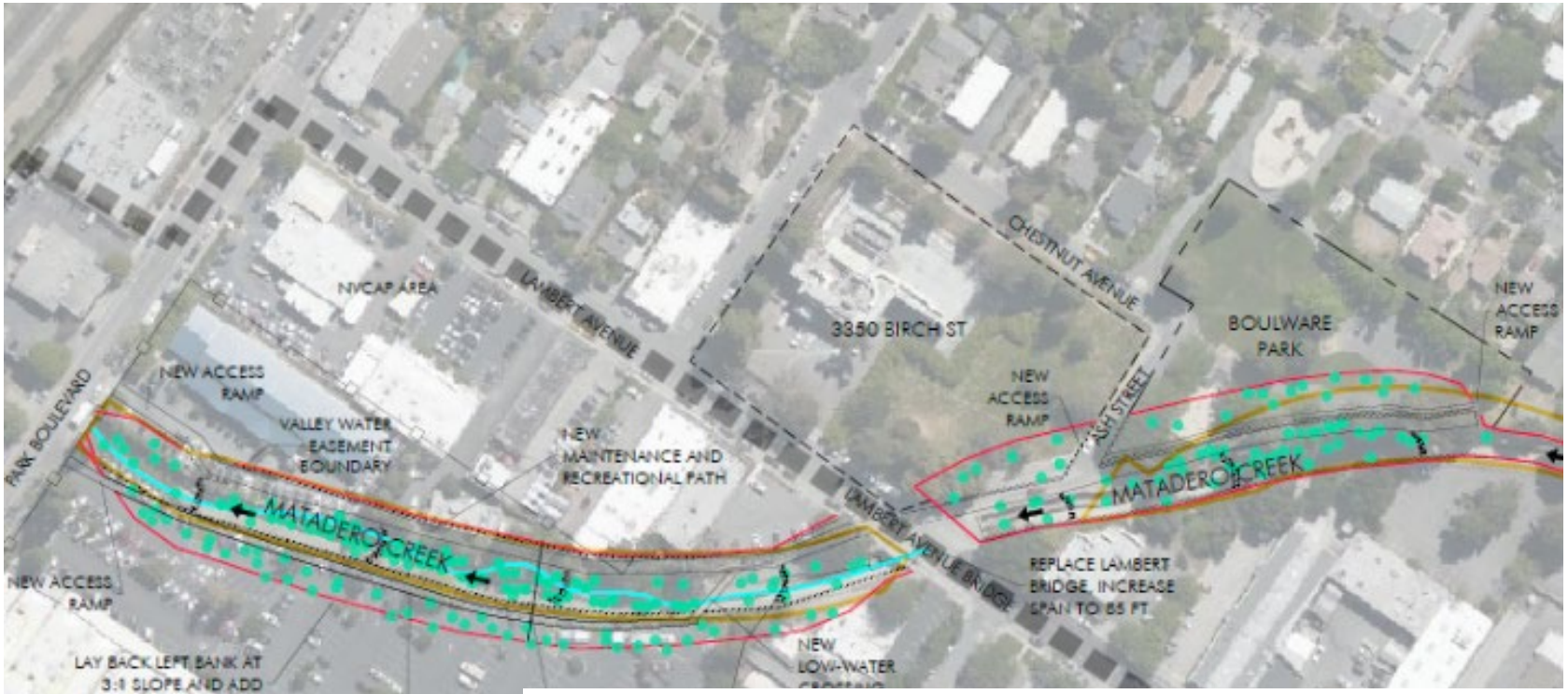
Concept #1A: Enhanced easement corridor + Boulware Park

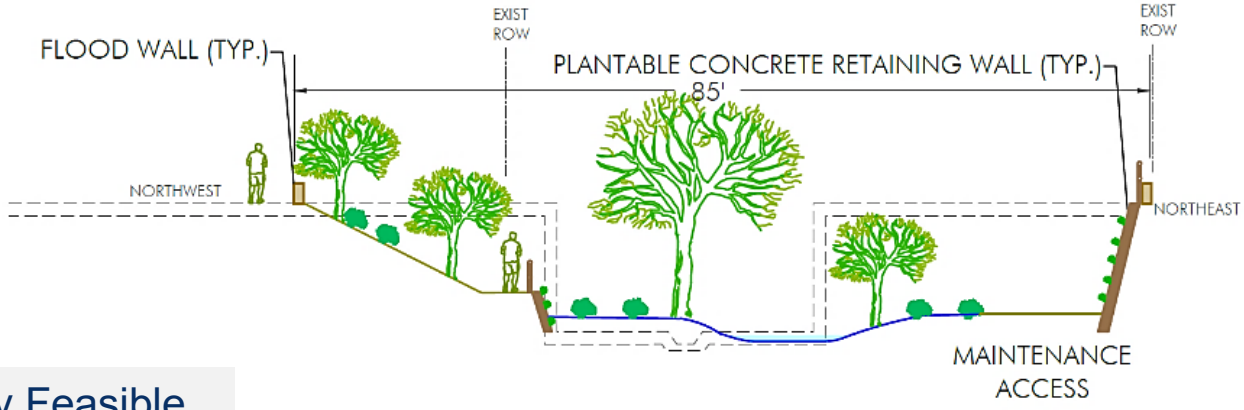




Hydraulically Feasible

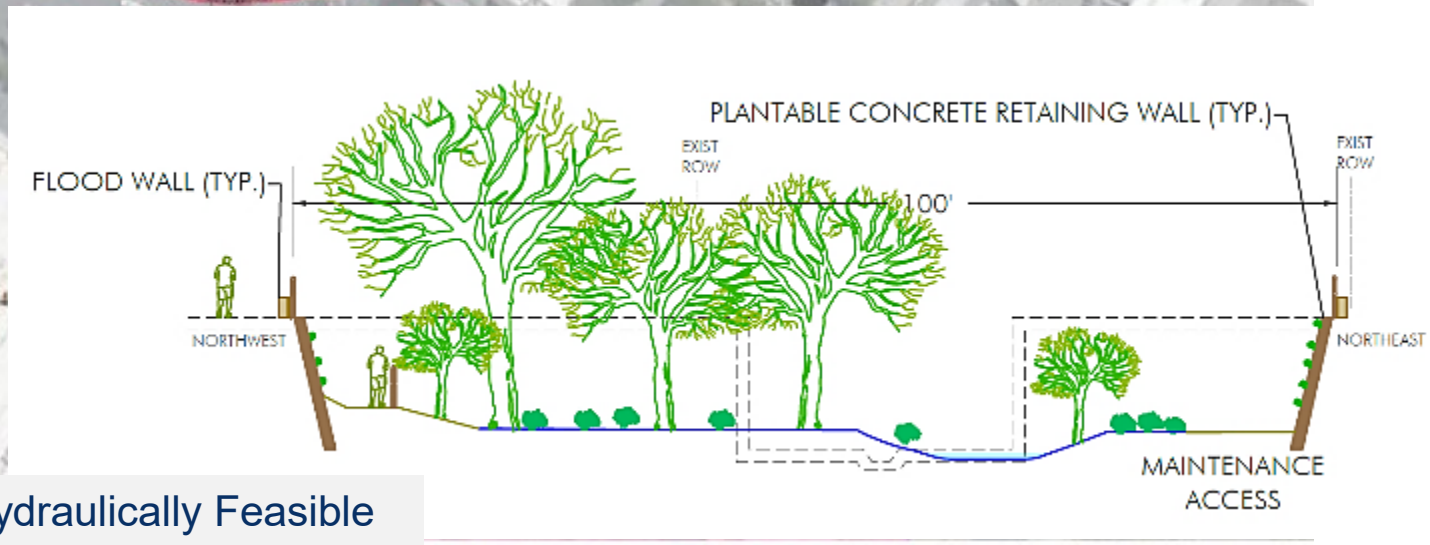
Concept #2A: Widened corridor + Boulware Park





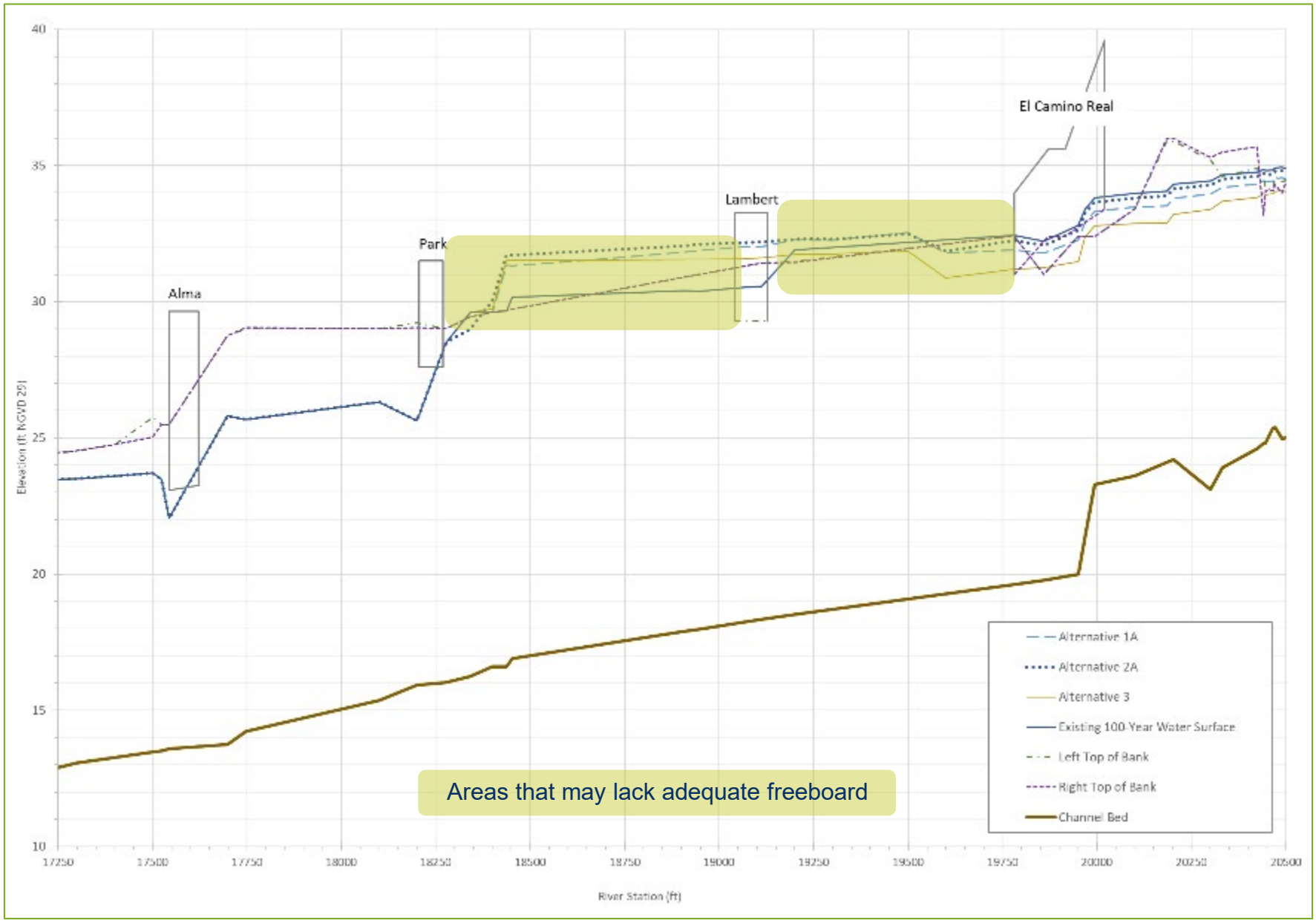
Hydraulically Feasible

Concept #3: Maximum Renaturalization



Hydraulically Feasible

100-year flood profiles Concepts 1A, 2A and 3



Preliminary Construction Cost Comparisons

Design Alternative	Construction Cost	*Total Cost
Concept 1	$2,000,000	$3,000,000
Concept 1A	$5,000,000	$8,000,000
Concept 2	$2,000,000	$5,000,000
Concept 2A	$6,000,000	$11,000,000
Concept 3	$8,000,000	$16,000,000

* Including estimates of other costs, such as: real estate, final design, permitting, management and contingency.

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Summary

- Concepts 1A, 2A, and 3 are most hydraulically feasible
- Any project will need to meet Valley Water's criteria and maintenance needs
- Potential costs are highly influenced by the need for bridge lengthening and flood protection and real estate components

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