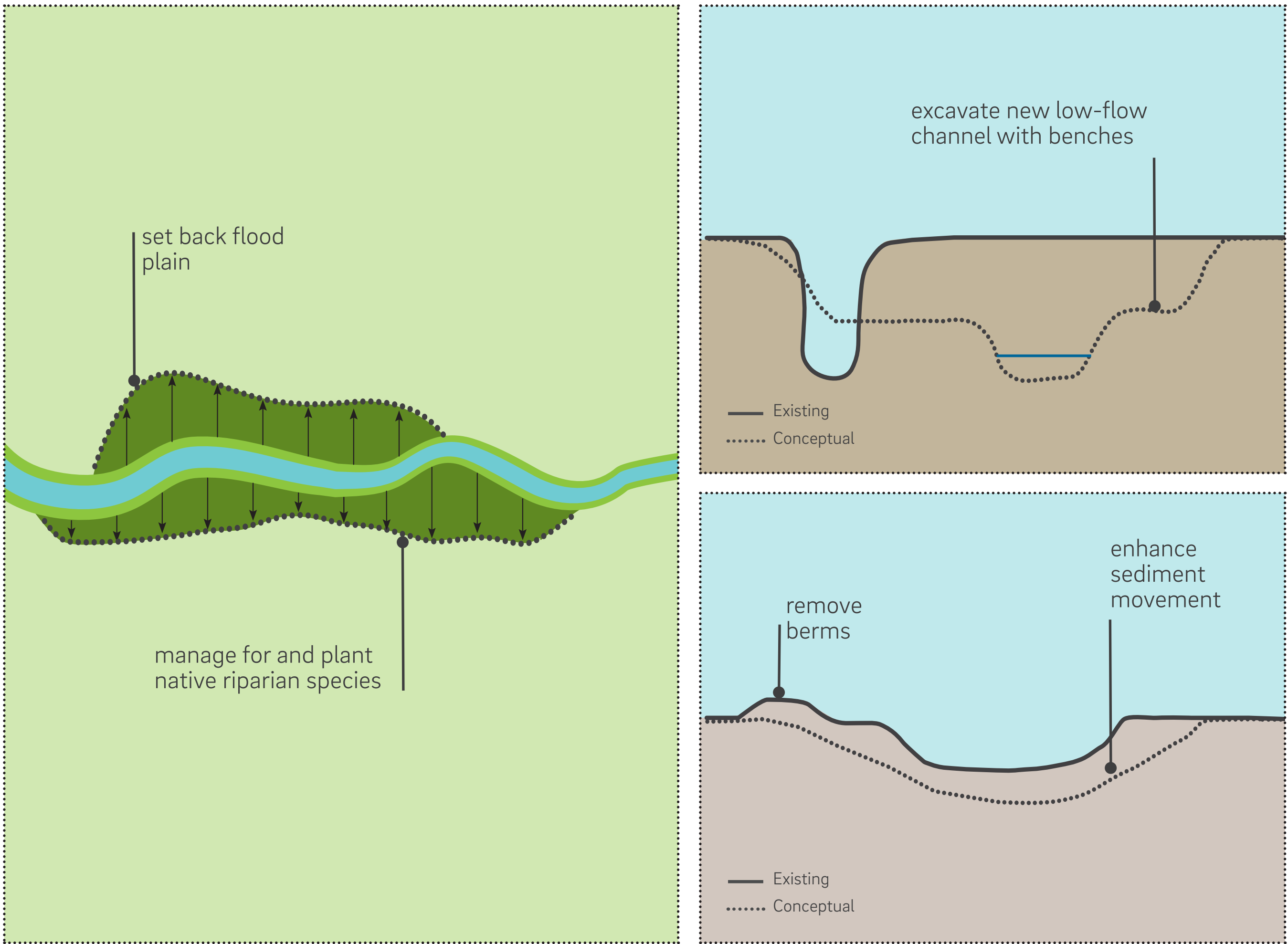


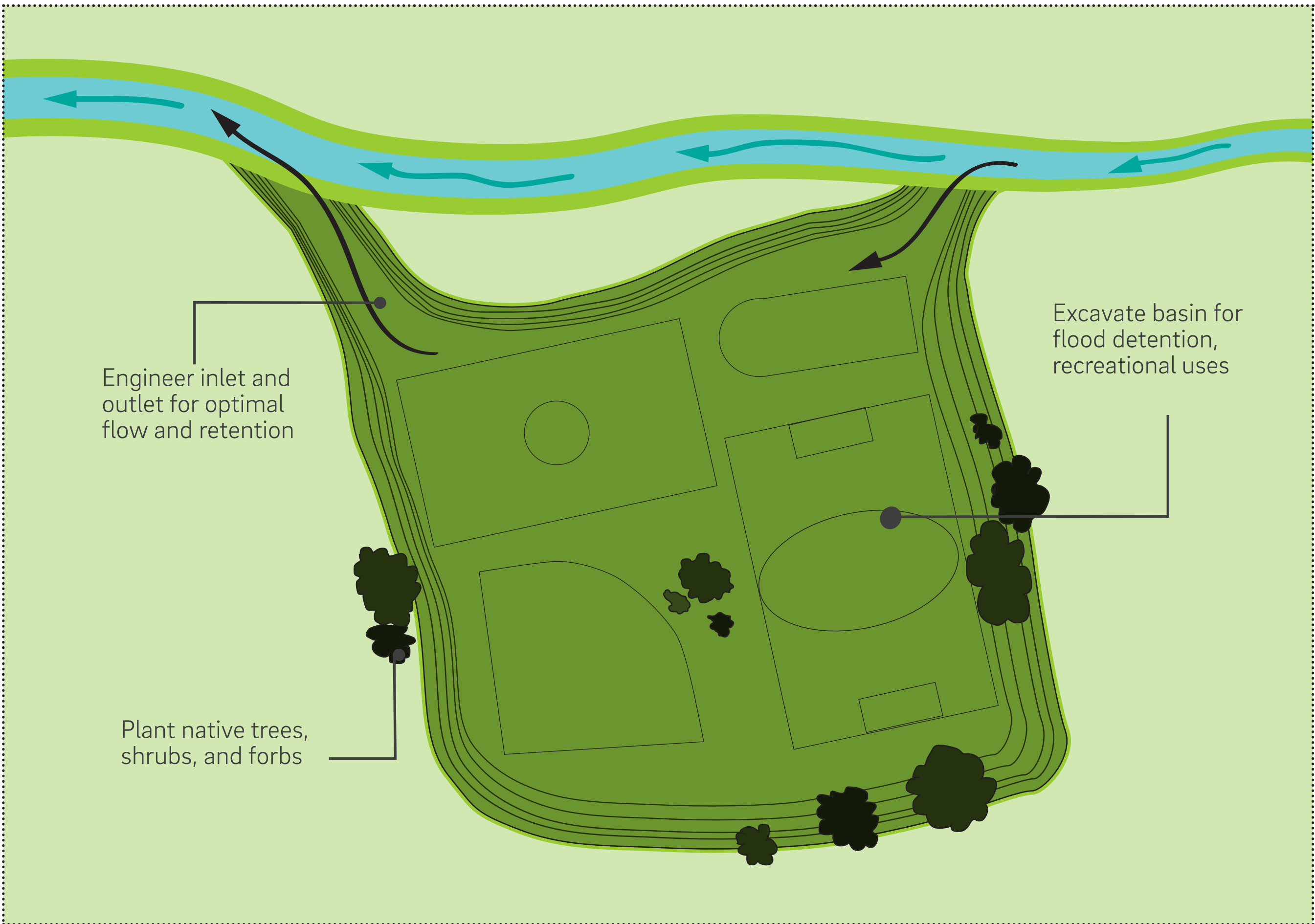
Upper Penitencia Creek Community Meeting

TYPICAL CONCEPT: RIPARIAN ENHANCEMENTS



Description	Key Benefits
Expand Floodplain <ul style="list-style-type: none">Excavate flood benchesSet back levees Enhance Riparian Habitat <ul style="list-style-type: none">Create or improve willow, sycamore, oak savanna; including shrub layerManage non-native species such as eucalyptus	<ul style="list-style-type: none">Utilizes open spaces for flood protectionPreserves and enhances riparian vegetationPreserves and enhances recreation uses by completing trail system and providing informational signageEnhances sediment movement to benefit fishery habitat

TYPICAL CONCEPT: OFF-CHANNEL DETENTION & RECREATION

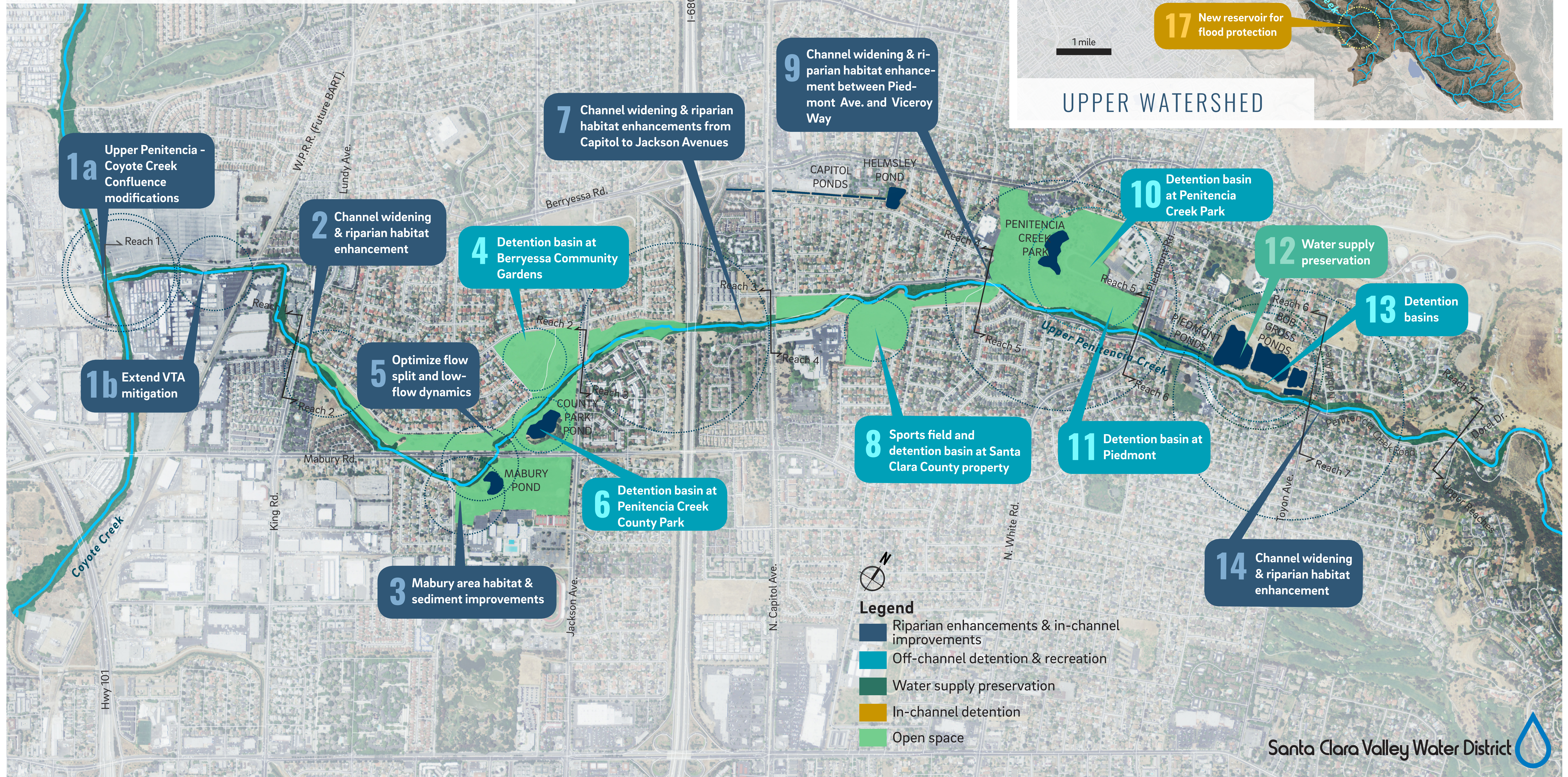


Description	Key Benefits
Create Basin <ul style="list-style-type: none">Below existing grade, with engineered side slopesOpportunity for sports field development Enhance Habitat <ul style="list-style-type: none">Plant native trees and shrubs where possibleManage non-native species	<ul style="list-style-type: none">Flood risk reductionProvide temporary flood storage and infiltrationPossible to create a sports field amenity for the community and schoolsPossible to enhance habitat within basin

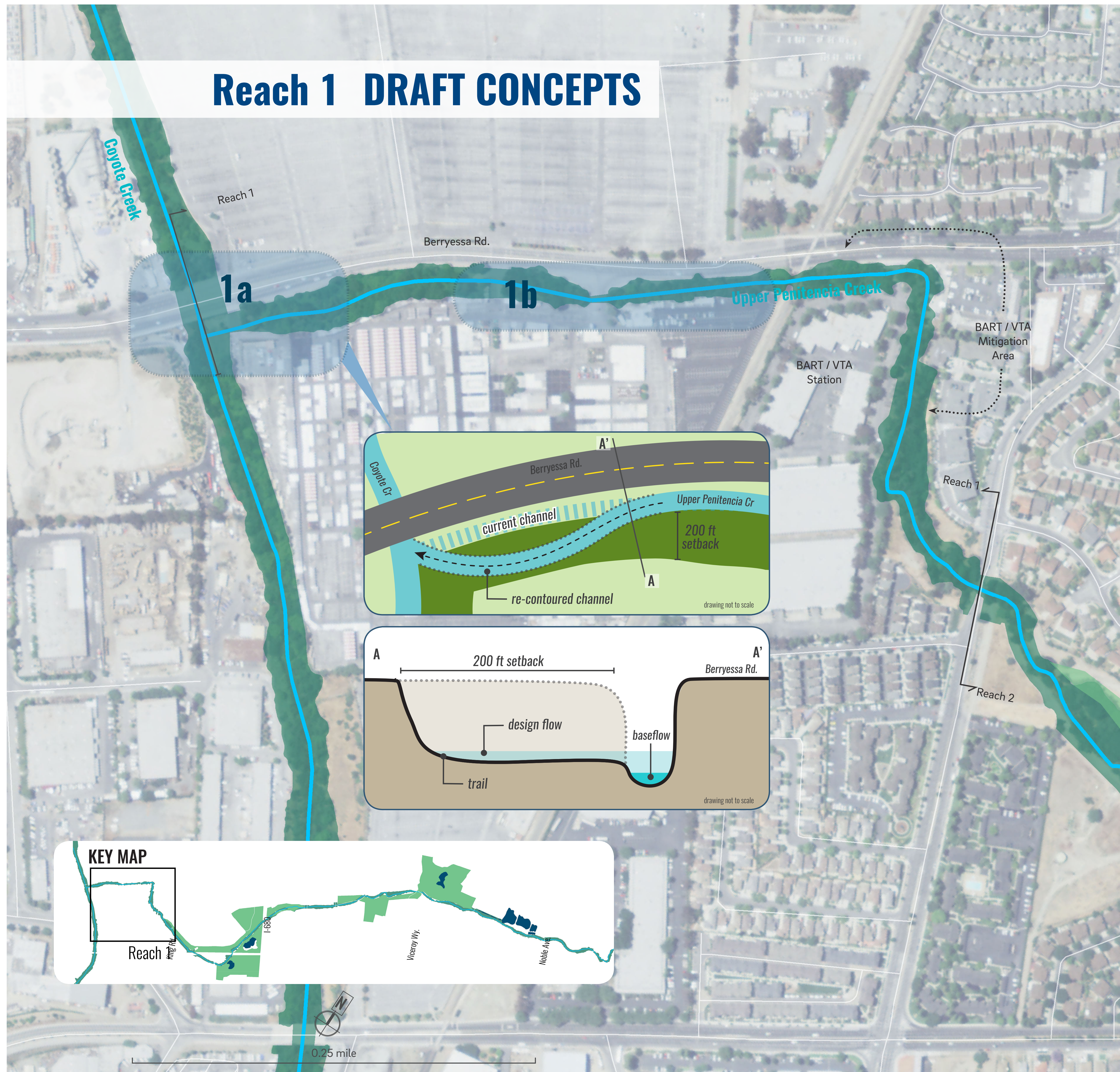
The cross-section diagram shows a river channel with a green floodplain. A label 'Existing' points to the solid line, and a label 'Conceptual' points to the dotted line. The diagram shows a river channel with a green floodplain and a large green area labeled 'Excavate basin for flood detention, recreational uses'. A label 'Engineer inlet and outlet for optimal flow and retention' points to a curved inlet and outlet. A label 'Plant native trees, shrubs, and forbs' points to a cluster of trees.

LANDSCAPE STRATEGY CONCEPTS OVERVIEW

PRELIMINARY DRAFT



Reach 1 DRAFT CONCEPTS



1a Confluence modifications: Redesign channel at confluence with Coyote Creek

Channel Modifications

Widen the channel within a ~200 ft setback area, incorporating a more sinuous, compound channel form, incorporating a low-flow channel and high flow bench; remove in-channel concrete and fill to provide enhanced flood protection to proposed development near the confluence with Coyote Creek; investigate possibility of rebuilding bridge over Coyote Creek just downstream of confluence to improve flow and sediment transport capacity.

Stream Habitat Improvements

Within the confluence setback area, create or improve perennial stream habitat with native willows, sycamores and oaks, including a shrub layer; manage non-native species such as eucalyptus (*Eucalyptus globulus*) and giant reed (*Arundo donax*) to provide improvements in connectivity for sediments, water flow, and wildlife between Upper Penitencia and Coyote Creeks.

Pedestrian Trail Extension

Connect Coyote Creek and Upper Penitencia Creek trails within setback area to provide enhanced recreational opportunities. Consider limiting trail to one side of creek to provide wildlife corridor on the opposite side.

1b Extend habitat improvements: Extend stream mitigation design

Modeled on the successful upstream BART / VTA mitigation, continue channel improvements to downstream areas to enhance aquatic and riparian habitat and water quality.



Reach 2 DRAFT CONCEPTS

2 Channel widening and riparian habitat enhancements

Channel widening

To address sediment aggradation in this reach, expand floodplain area within a wider setback and consider expanding openings under bridges (including partnering with the City of San José on redevelopment of King Rd bridge). These actions would improve flow and sediment transport during flood events, improve passage for migrating steelhead and other fish, and enhance in-channel terrestrial wildlife migration and dispersal.

Near-channel vegetation enhancement

Improvements to the riparian zone should include enhancement of sycamore habitat and additions to the shrub layer, with benefits to terrestrial and aquatic wildlife. These improvements can take place in the context of managing vegetation for flood conveyance.

3 Mabury area habitat and sediment improvements

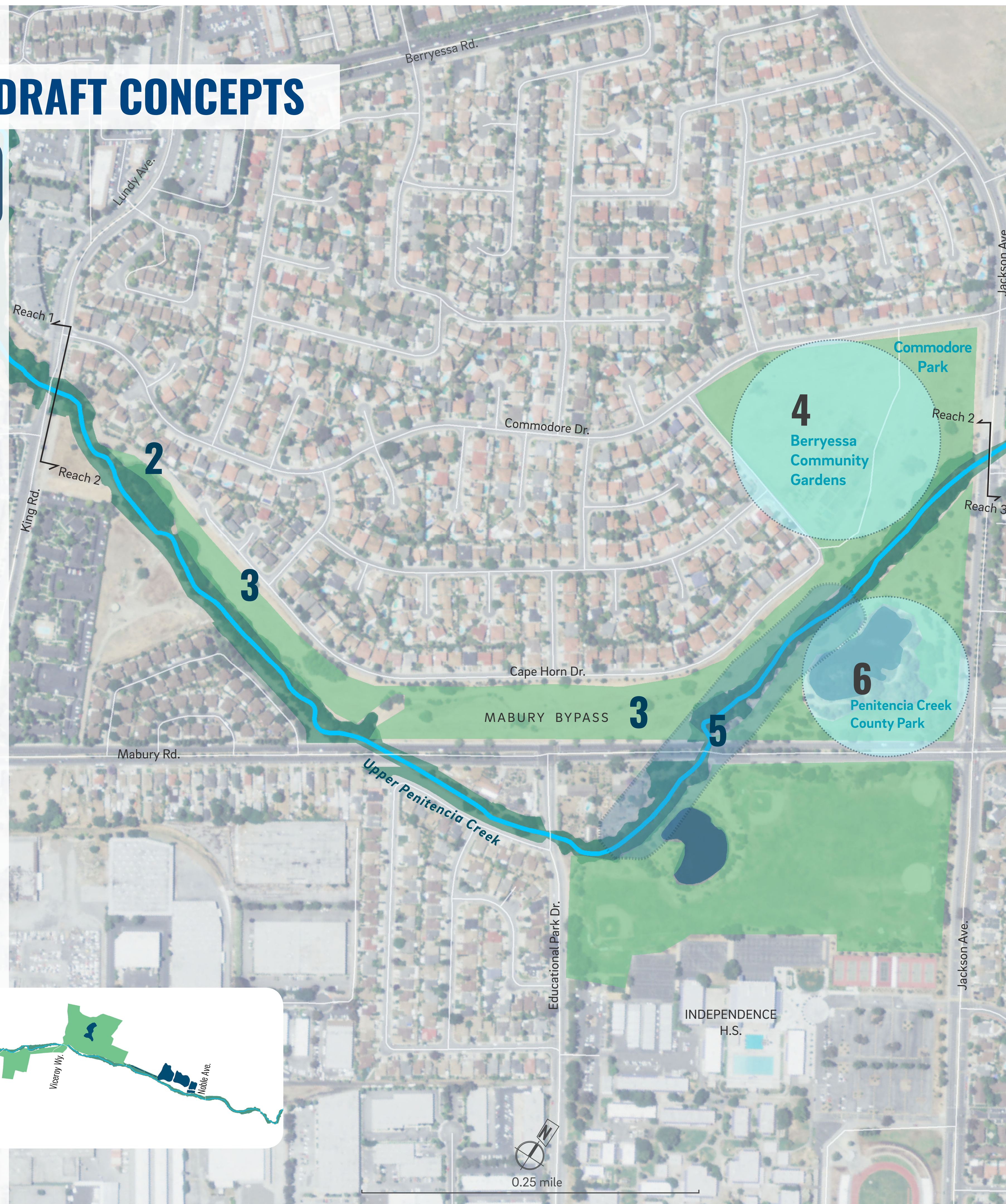
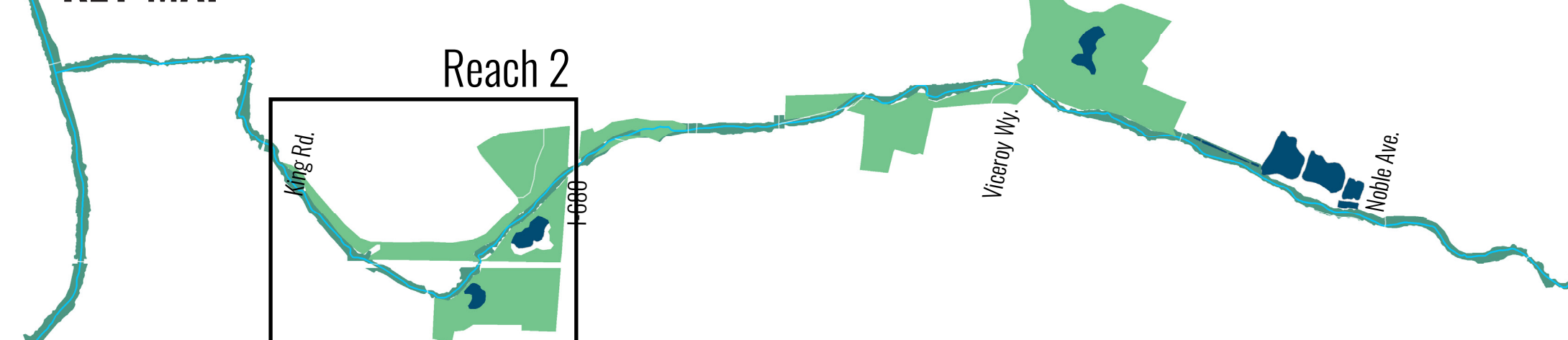
Promote California sycamore cover

Within open spaces between King Rd and Jackson Ave, increase proportion of native canopy and understory cover within the riparian zone to promote native wildlife diversity and improve wildlife habitat. Plant California sycamores and native shrubs such as elderberry and coyote bush as part of this effort.

Design sediment management strategy

Implement a strategy that focuses on local sediment reuse instead of hauling sediment elsewhere to decrease sediment disposal costs and increase sediment available for local in-channel habitat restoration and maintenance.

KEY MAP



4 & 6 Multi-use flood detention basins

Flood detention basins could be engineered to work together, filling and draining sequentially as flood stages rise and fall. Potential fish stranding as floods recede can be addressed by connecting basins to the channel.

Berryessa Community Gardens

Working with partners and landowners, engineer a flood detention basin that also serves desired recreational uses.

Penitencia Creek County Park

Lower floodplain around the existing pond to increase flood detention capacity, improve the connective pipe that fills this pond, and provide a sediment settling basin. Construct berm surrounding the park boundary to provide flood protection to the surrounding area.

5 Optimize flow split and low-flow dynamics

Flow split and low-flow dynamics

This reach accumulates sediment and has an engineered weir separating Upper Penitencia Creek from the Mabury Bypass (a secondary, high flow channel). Establishing a low flow connection from the Creek to the Bypass and planting riparian vegetation along both channels could improve dry season aquatic habitat conditions and increase riparian habitat for native wildlife. Removing the earthen berms that prevent flows from entering the open space area and that cause the channels to fill with sediment could improve flow conditions through the reach. Consider different designs for the channel split to increase flood conveyance.

Reaches 3, 4 & 5 DRAFT CONCEPTS



7 & 9 Channel widening and riparian habitat enhancements

From Capitol to Jackson Avenue

Reconfigure channel and adjacent floodplain so that floodplain is inundated under modest flood events (e.g., 5-year flood event), decreasing downstream flood impacts and increasing refuge habitat for fish during flood events. Create wider channel with flood benches; place large woody debris and cobble/boulder features within the channel near Highway 680 underpass to increase velocity refuge and cover habitat for steelhead and other fish as well as increasing sediment deposition and overall habitat complexity.

Between Piedmont Road and Viceroy Way

Create levee setbacks and explore channel configurations that include benches and low-flow channels to improve flood capacity; manage non-native species and promote native oak and sycamore communities to promote native wildlife.

8, 10, 11 Create multi-use flood detention basins

Flood detention basins could be engineered to work together, filling and draining sequentially as flood stages rise and fall. Potential fish stranding as floods recede can be addressed by connecting basins to the channel.

Santa Clara County Property

Working with partners and landowners, engineer a flood detention basin to increase flood retention that also includes recreational uses like a collection of sports fields. Lower the floodplain elevation and use the public trail to move flood waters to the basin. Native trees and shrubs can be incorporated into edge plantings. Optimize flow to and from the site so inundation only occurs during certain flood intensities, and so that flood waters recede reasonably quickly.

Penitencia Creek Park

Build a flood detention basin to provide temporary storage during high-intensity flood events, and preserve or re-create trail system that serves desired recreational uses; consider adding sports fields to this area. Vegetate with native trees and shrubs where appropriate.

Piedmont Basin

Further excavate a natural basin south of Piedmont Middle School for flood detention, and investigate infiltration capacity of this area. Consider this area for sports fields or riparian vegetation enhancement.

Reaches 6 & 7 DRAFT CONCEPTS



12 Flood storage enhancement and water supply mitigation at Bob Gross Ponds

Recontour the area south of the existing Bob Gross Recharge Ponds to serve as a detention basin separate from the existing ponds in order to increase flood storage capacity. As mitigation for water supply impacts, investigate whether expanding the ponds to the north is feasible from engineering, landowner, and partnership perspectives. New detention features should be planted with native trees and shrubs, and drainage of the basin should be designed to prevent fish stranding.

13 Bob Gross Ponds Habitat Improvements

Along approximately half a mile, expand channel width and excavate a lower-flow channel, designing a flood bench to flood at the 10-year storm interval. This flood bench can be planted with native species, and vegetation in the surrounding area can be managed to promote native species. Monitoring of the channel for fish and wildlife use will be important as the channel evolves through flood events.

14 Channel Widening and Riparian Habitat Enhancements

Restore the stream to a riffle-pool configuration by removing an inoperable concrete fish ladder, and widen the stream channel by eliminating the Noble diversion channel to benefit native fish. Investigate increasing the flow and sediment transport capacity under an aging bridge at Noble Ave, working with partners and landowners.