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DOWNTOWN CREEKS PRESERVATION, RESTORATION AND DEVELOPMENT PLAN

LAFAYETTE, CALIFORNIA

August 2016

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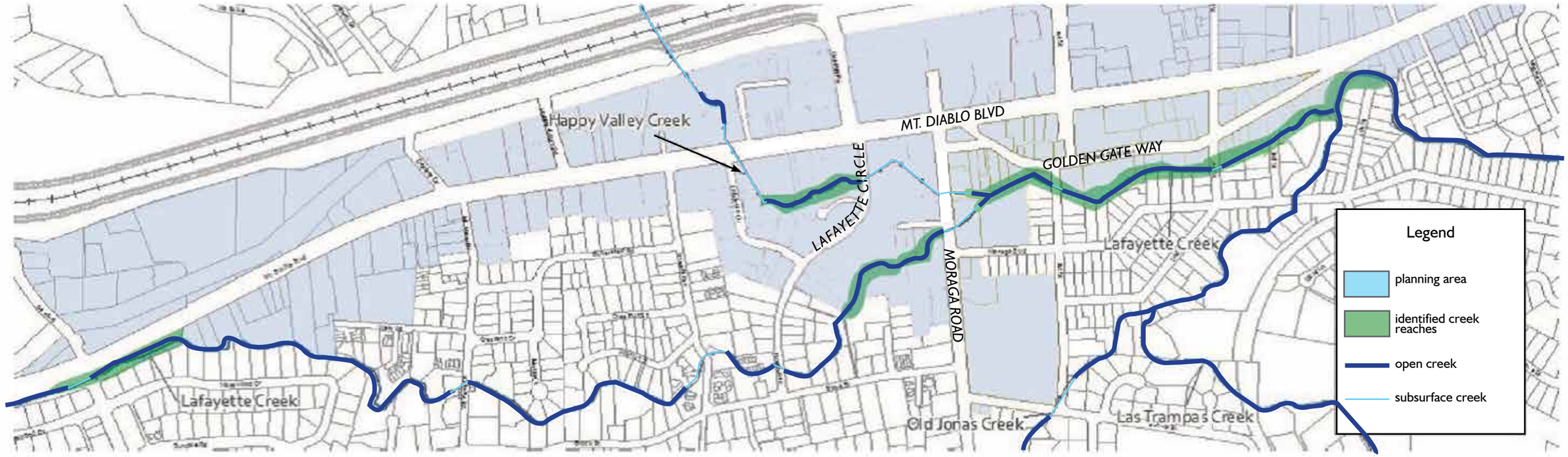

Figure 1-1: Creek reaches included in the Downtown Creeks Plan

PROJECT BACKGROUND

The purpose of the Lafayette Downtown Creeks Preservation, Restoration and Development Plan ("Downtown Creeks Plan") is to further the goal of protecting and enhancing Lafayette's downtown creeks. This goal (Goal 15) was established by the City of Lafayette in 2012 when it adopted the Downtown Specific Plan (DSP). The DSP articulates a vision to preserve and enhance its small town character while guiding change that will occur over the next 20 years. In addition, the City adopted the Downtown Design Guidelines in 2014 to provide more detailed guidance to direct development in the downtown area and to more fully develop the vision and goals for the downtown creeks. The Downtown Creeks Plan will establish a long-term strategy for achieving the vision set forth in the Downtown Specific Plan and Design Guidelines for downtown creeks.

Using the DSP's creek policies as guidance, the City issued a Request for Proposals for creation of a plan that would:

- Preserve the natural resource value of the creeks
- Evaluate projects and actions within and adjacent to the creek corridors based on the following priorities (in priority order)
    - Flood protection
    - Preservation of riparian habitat
    - Visual access
    - Opportunities for education about the creek's riparian resources
    - Physical access to the top of creek banks
- Preserve creeks as a significant contributor to the downtown character.

The Downtown Creeks Plan was prepared by the consultant team of Gates + Associates, ENGEO, and Environmental Collaborative. It was overseen by Lafayette's Creeks Committee, whose mission is to encourage beautification of Lafayette's more than 16-miles of creeks and improve residents' awareness of creek maintenance and pollution prevention policies.

The creek reaches (specific portions of a creek) that are included in the Downtown Creeks Plan are shown on the map above (Figure 1-1).

PROJECT GOALS

Goals of the Downtown Creeks Plan include:

- Identifying creek preservation and restoration opportunities;
- Clarifying creek setback requirements for the downtown;
- Developing standards for how new developments should relate to adjacent creeks;
- Producing strategies and methods for creek improvements and stewardship;
- Developing opportunities for public access and pathways;
- Preventing property damage by creek processes (flooding, erosion); and
- Identifying public safety and environmental concerns.

Additionally, the plan builds on existing documents and efforts to:

- Create public spaces that invite people to experience, engage with, enjoy, and learn about the creeks
- Celebrate Community and the Identity of Lafayette

DOCUMENT ORGANIZATION

The Downtown Creeks Plan describes potential improvements in the six specific reaches of Lafayette's creeks identified in Figure 1-2. The Plan first addresses improvements that could occur on public properties, which projects could be undertaken directly by the City of Lafayette. It then addresses potential improvements that could occur on private properties. The latter improvements would require coordination with the owners of the affected properties.

The Downtown Creeks Plan also describes creek protection and restoration activities that could occur throughout the Downtown area, including restoration of riparian habitat, stabilization of creek banks, and improvement of water quality in the creeks. Materials and furnishings appropriate to projects along the creek corridors are described and illustrated.

History, existing conditions and context related to Lafayette's Downtown Creeks are provided as background for the proposed improvements.

The Plan documents the extensive public outreach that was undertaken to engage the community and stakeholders. The public outreach process was used to identify potential improvements, and to refine and prioritize desired improvements.

Finally, the Plan describes implementing actions to be taken in order to accomplish the recommended improvements to Lafayette's Downtown Creeks.

Figure 1-2: Creek reaches and study area key map

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CHAPTER 2:
HISTORY, EXISTING CONDITIONS AND CONTEXT

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BRIEF SITE HISTORY AND SETTLEMENT

The creeks of Lafayette and their banks have served as a cultural center for hundreds of years. Originally settled by a Miwok sub-group more than 10,000 years ago, archaeological artifacts of Native American settlements have been found as recently as the 1970's along Lafayette Creek.

Subsequent to Native American habitation, the Mexican government established land grants in the area. In the American Period, the 3,329-acre Rancho Acalanes land grant was purchased in 1847 by the pioneer Elam Brown, who built his home along Happy Valley Creek near what is now 32 Lafayette Circle. Today, Lafayette encompasses nearly all of this land grant site.

Through the early 1900's, farming was the primary occupation in Lafayette. Common crops included vineyards, pear orchards and various grains. Farming conditions could be challenging due to dry conditions in the summer months, and severe winter flooding from the creeks.

URBANIZATION OF THE CREEKS

Creek bank stabilization, erosion and flooding were concerns early in the development of Lafayette's history. To address these concerns, portions of the creeks were culverted or channelized with a concrete U-Channel. The culverts and channels were constructed to convey water under roadways, and to prevent flooding and creek bank erosion. The storm drain system outflows into the creeks. A concrete drop structure was constructed downstream of the confluence of Lafayette Creek and Las Trampas Creek, in East Reach 3. The segments of Lafayette Creek included in East Reach 1 and East Reach 2 were channelized in 1955.

From the historic aerial photograph in the top right (Figure 6-1), one can see the natural course of Lafayette, Happy Valley and Las Trampas Creeks around 1940. The aerial below (Figure 6-2) shows the effects of urbanization of central Lafayette on the watershed. Today, the creeks have a combination of conditions that range from channelized sections with concrete beds and walls, to areas that have natural creek conditions and habitat areas.

The urbanization of Lafayette and its watershed has increased the areas of paved and impervious surfaces, reducing the pervious surface area available to allow water to percolate through the soils. The lower percentage of pervious surface area has created two problems for Lafayette's creeks and riparian areas. First, water quality of the creeks is reduced since impervious surfaces such as asphalt and concrete enable pollutants to enter the creeks in higher concentrations. Second, the higher percentage of impervious surfaces increases runoff during storm events, which can increase erosion in the creek channels and raise the risk of flooding.

Figure 2-1: Aerial showing Lafayette Creeks study area around 1940. (Source: USGS)

Figure 2-2: Aerial of study area in early 2000's. (Source: USGS)

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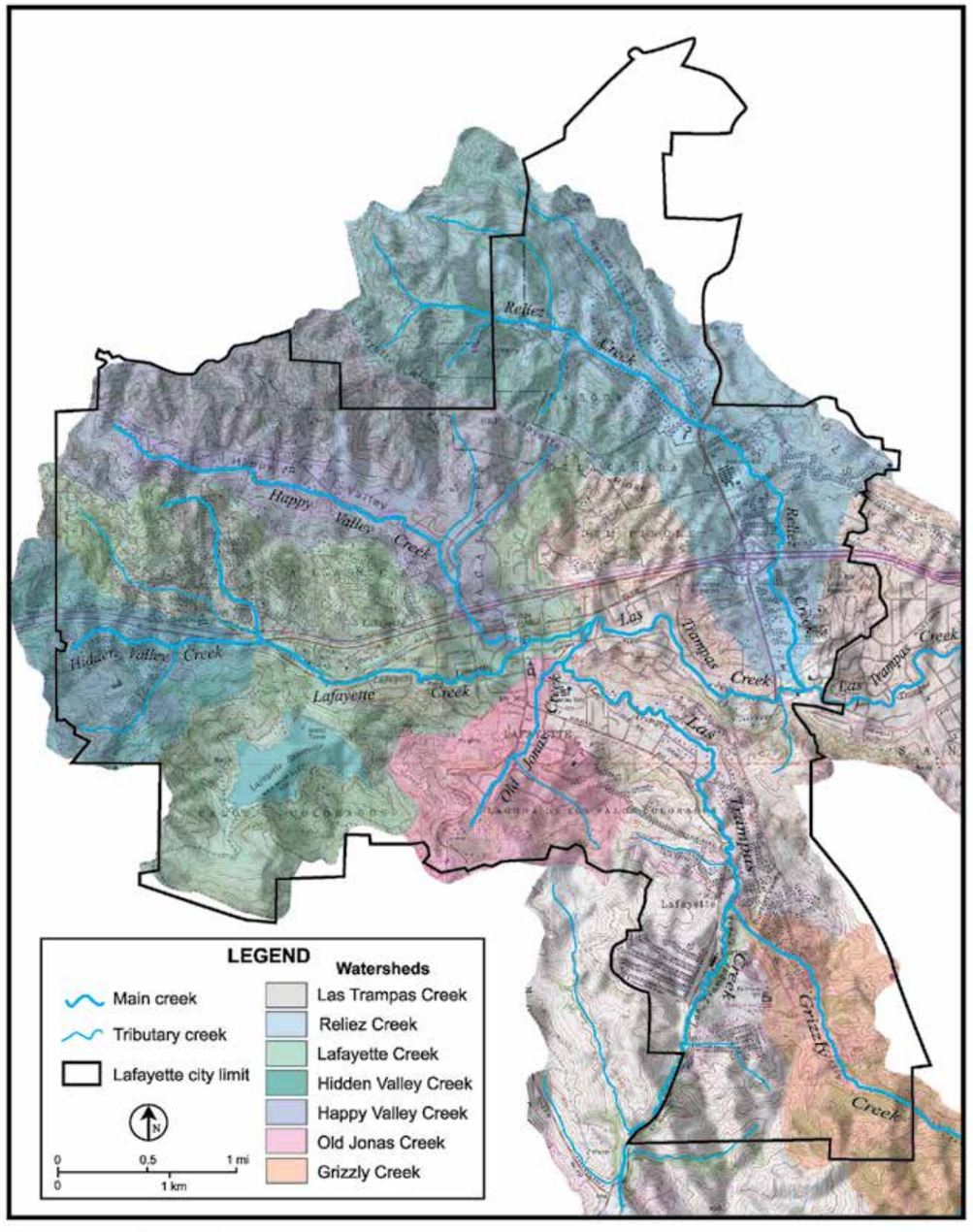

Figure 2-3: Las Trampas Creek watershed
(Source: Lafayette Creeks Committee)

HYDROLOGY AND GEOLOGY

The largely Miocene sediments underlying the creeks in Lafayette contain both hard sandstone beds that tend to resist erosion and form ridgelines, and relatively soft mudstone beds that form many valley areas. The mudstone and alluvial sediments along the creeks are more susceptible to erosion than the sandstone during high velocity flows and in locations where the soil is exposed without erosion control measures in place. As the urbanization of the area has increased flow volumes and velocity, it is important to monitor erosion along the creek banks to reduce the risk of bank failure. The high turbidity exacerbated by urbanization, as well as the introduction of pollutants from stormwater runoff during rain events, are detrimental to aquatic life in the creeks.

The creeks that are discussed in this report are within the Las Trampas Creek watershed, which, in turn, is part of the larger Walnut Creek watershed (Figure 6-3). Happy Valley Creek joins Lafayette Creek at the western end of East Reach 1. Lafayette Creek's confluence with Las Trampas Creek is located slightly farther downstream, in East Reach 3. The 2003 Contra Costa County Watershed Atlas lists Las Trampas Creek watershed size as 17,238 acres, with an average annual rainfall of 26 inches, a mean daily flow of 15.4 cubic feet per second (cfs), and an estimated 25% impervious surface. The State of California lists Walnut Creek and all its upstream tributaries, including Lafayette Creek and Happy Valley Creek, as impaired by the pollutant diazinon (an agricultural insecticide).

Lafayette Creek and Happy Valley Creek are both perennial streams with flow rates and volumes that vary widely based on the season and precipitation events. Both creeks are supplied by surface runoff from the local watershed, and Lafayette Creek is also fed by Lafayette Reservoir. All of the reaches assessed are surrounded by low- to moderate- density housing or commercial buildings.

Lafayette Creek and Happy Valley Creek both contain relatively stable creek beds due to anthropomorphic (human) interventions that have occurred over the last 100 years intended to stabilize and harden the channels due to their proximity to urban areas. However, most of the original fluvial geomorphic characteristics of the channels, including historic overbank floodplain areas, have been lost. As in many areas of the San Francisco East Bay, urbanization of the watershed's tributary to the creeks has likely led to declining water quality through the introduction of urban stormwater runoff constituents such as heavy metals, hydrocarbons, nutrients and pesticides, among other pollutants. Also, urbanization tends to increase runoff volumes and peak flows in storm events by increasing watershed imperviousness. If unmitigated, these storm events can create erosional responses in downstream receiving water, often referred to as "hydromodification," which has likely happened in both channels. Although the creeks in the study area are relatively stable as erosion or scour potential related to hydromodification is minimized in the reaches studied due to construction of concrete and steel culverts, channelization of banks and other bank armoring, erosion remains a problem (see below for details).

The most effective strategy for improving the water quality of urban runoff discharging into urban creeks is the placement of bioretention areas (or other biotreatment post-construction stormwater best management practices such as use of bioswales or pervious pavement) between urban stormwater runoff sources and the creeks. Typically, bioretention areas are placed curbside, replacing conventional drainage inlets. They collect urban stormwater runoff during rain events at points of drainage concentration, treat stormwater runoff and then link into the creek system. This solution also reduces the peak discharge of water entering the creek system during storm events, reducing flooding. Additionally, removing concrete and rock from the creek bed and replacing it with native riparian vegetation could also improve water quality, though it would probably have little effect on creek flooding.

The majority of the creeks are highly incised (the creek bed has been eroded downward), having high banks, with little to no floodplain within the banks. The only

exceptions are Happy Valley Creek within the Shield Block (North Reach) and the portion of Lafayette Creek after the concrete channel and just prior to the drop structure, where the creek is only moderately incised (East Reach 3). After the drop structure it returns to the condition of having highly incised channels.

Several factors have contributed to creek bank instability and erosion issues. Most of the creek reaches have steep banks, with no floodplain areas within the banks to ameliorate erosion impacts. Urbanization has increased peak stormwater flows, causing downcutting in soft bedrock and alluvial deposits to cause the dramatically incised channels with undercut banks that we see today. Furthermore, the invasion of English ivy (*Hedera helix*) has displaced deep rooted native riparian vegetation that would have provided significantly stronger bank protection. The shallow root system of English ivy has compromised the stability of the banks. Additionally, not all buildings along the creeks conform to current setback requirements, further increasing slope stability risk issues.

As discussed in the Assessment Summary Report (Appendix B), urbanization and undersized culverts have elevated the risks presented by potential flooding in the area. The flood hazard map shown as Figure 6-4 indicates areas within the downtown that may be inundated by 100-year and 500-year floods. Flood protection is the highest priority for assessing potential improvement measures to the downtown creeks.

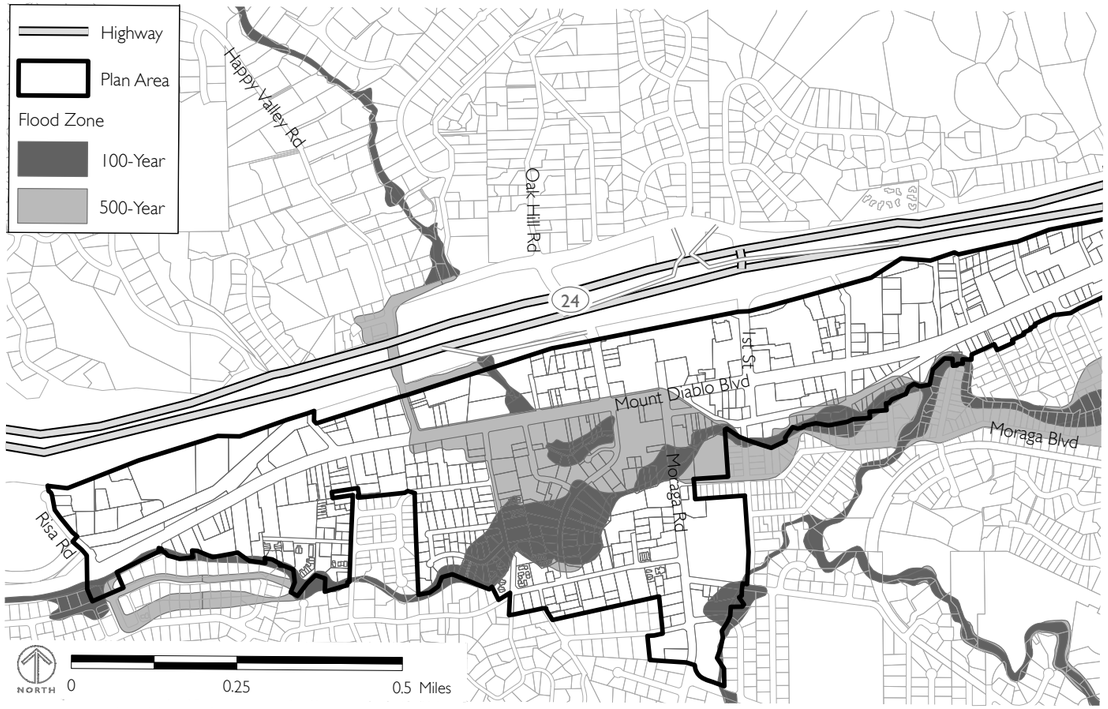

Figure 2-4: Flood hazard map (Source: FEMA)

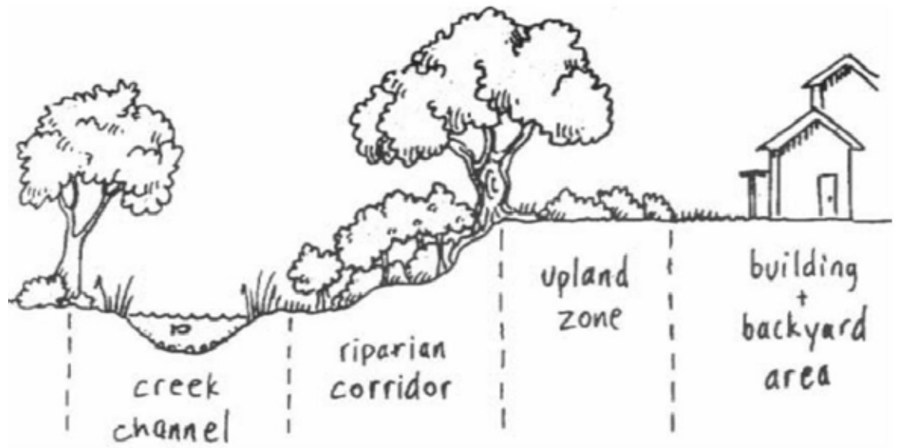

Figure 2-5: Creek zones. (Source: City of Lafayette)

NATURAL HISTORY AND ECOLOGY

The Planning Area is dominated by a cover of suburban landscape, traversed by a band of riparian woodland and scrub along Lafayette Creek and tributary drainages. Most of the valley floor and lower hillsides through the downtown Lafayette area have been developed with urban and suburban uses, with primarily ornamental landscaping where vegetative cover remains. Mature native valley oaks (*Quercus lobata*) and coast live oaks (*Quercus agrifolia*) occur in scattered locations throughout the developed valley floor, particularly along the creek corridors. But the majority of the area away from the remaining open creek channels has been developed with roadways, parking lots and structures, bordered by ornamental landscaping.

The condition of vegetative cover along the creek corridors in the Planning Area varies greatly, but continues to provide high quality riparian habitat where native cover remains. Some reaches of the creeks remain intact, with a well-developed canopy of native trees and shrubs. Dominant cover in these reaches includes: valley oak, coast live oak, California bay laurel (*Umbellularia californica*), California buckeye (*Aesculus californica*), and willows (*Salix spp.*), with several other tree, shrub, and vine species contributing to the typically dense cover formed by riparian vegetation. These include: box elder (*Acer negundo var. californicum*), big leaf maple (*Acer macrophyllum*), wild grape (*Vitus californica*), and poison oak (*Toxicodendrom diversilobum*).

Other reaches of Lafayette Creek have been channelized by flood control improvements installed in the late 1950s with a concrete bed and vertical walls. Mature native and planted trees remain along what was once the top of bank in the channelized reaches, and continue to provide habitat for birds and shade the creek channel. But the channelization has greatly reduced the habitat value of the creek and now limits opportunities for movement by native wildlife which typically use creeks as movement corridors.
Highly invasive, non-native English ivy (*Hedera helix*), Himalayan blackberry (*Rubus discolor*), and giant reed (*Arundo donax*) often form impenetrable thickets along segments of the creek corridors, even where intact canopy cover remains. These invasive species are replacing native riparian vegetation and reducing habitat values along much of the creek corridors. In some locations, the ivy and blackberry vines are so

thick that they now preclude any other groundcover and are choking the canopy of some mature native trees. And invasive tree species such as tree-of-heaven (*Ailanthus altissima*), green wattle (*Acacia decurrens*), and blackwood acacia (*Acacia melanoxylon*) have also become established in many locations along the creek corridors and are compromising their habitat values.

Riparian corridors tend to serve as critical linkages for aquatic and terrestrial wildlife movement. Surface water is available for aquatic-dependent organisms, and as a source of drinking water for terrestrial mammals and birds. Where barriers do not obstruct movement, the creeks serve as movement corridors for aquatic and terrestrial species that use the protective cover found along the creeks. Resident trout and other native and non-native fish species most likely continue to occupy perennial segments of Lafayette, Las Trampas, and Happy Valley Creeks. Pacific tree frog, California newt, western toad, ensatina salamanders, and other amphibians are dependent on the perennial and seasonal source of water for breeding, foraging, and dispersal. The aquatic habitat also supports large numbers of invertebrates, which serve as an important source of food for resident fish, amphibians, and wading birds. Terrestrial wildlife dependent on the cover provided by segments of the remaining well-developed riparian woodland and scrub in the Planning Area include: dusky-footed woodrat, deer mouse, eastern fox squirrel, red and grey fox, rufous-sided towhee, scrub jay, flycatchers, woodpeckers and warblers, common gopher snake, garter snake, and ringneck snake. Dense riparian growth provides essential cover utilized by larger mammals, such as striped skunk, raccoon, opossum, and occasionally black-tailed deer. And mature trees provide nesting and foraging opportunities for numerous species of birds, including raptors (birds-of-prey). Chinook salmon, steelhead, and other native fish species were historically known to migrate within the Lafayette Creek watershed, but major barriers now prevent successful migration into the Planning Area, including an approximately 15-foot vertical drop structure at the downstream end of the Planning Area.

PLANNING CONTEXT

The Downtown Creeks Plan is being developed within the context of a number of planning documents adopted by the City of Lafayette. These documents include:

City of Lafayette General Plan:
The General Plan, adopted in 2002, addresses the City's creeks in both its Open Space and Conservation Chapter, and its Safety Chapter. Most of the General Plan guidance has been incorporated into the goals and policies of the Downtown Specific Plan. The following programs provide some additional guidance for the Downtown Creeks Plan:

Program OS-5.1.3
In cooperation with the Contra Costa County Flood Control District and the California Department of Fish and Game, develop a long-term management plan for addressing creek bank stability on Las Trampas Creek, Grizzly Creek, and other creeks with bank slumping problems. This plan should identify the location of problem areas and develop a strategy for addressing these problems on a watershed basis. Since responsibility for many problem areas rests with private owners, the City should assist owners in addressing these problems by:

1) Compiling a list of stability management practices recommended for the particular stretch of creek.
2) Compiling a list of possible contractors available to do the work.
3) Investigating potential funding sources including public and non-profit agencies and foundations.
4) Expediting the permitting process so that an owner does not need to submit studies and data to local, State, and Federal agencies to obtain separate permits.

Program S-3.4.3
Periodically assess the need to establish improvement districts and other financing mechanisms to fund necessary storm drainage and watercourse improvements to minimize flood hazards and creek erosion.

Downtown Specific Plan:
The downtown creeks are an integral part of the Downtown Specific Plan (DSP), adopted in 2012. As part of its discussion of the Public Realm, as well as proposing three parks (Library Park, Town Green and Gazebo Park) adjacent to the downtown creeks, the DSP includes the following pertaining specifically to the downtown creeks.

Goal 15 Public Realm – Creeks.
Protect and enhance downtown creeks.

Policy 15.1
Preserve the natural resource value of the creeks.

Policy 15.2
Preserve creeks as a significant contributor to the downtown character.

This Downtown Creeks Preservation, Restoration and Development Plan implements those Policies by carrying out the actions described in Programs 15.1.1 and 15.2.1 .

Downtown Design Guidelines:
Adopted in 2014, these guidelines include the following goals and guidelines pertaining to the downtown creeks and preservation of trees.

Figure 2-6: Downtown Specific Plan showing Creek Trail and Crossings in Shield Block

Goal:
Development design should embrace the creeks and connect the public to them.

Guidelines:
1. Maintain and restore native riparian areas.
2. Provide views of the creek through window placement, decks, balconies, and outdoor spaces.
3. Orient development to take advantage of the creek for walkways, dining, and outdoor space.
4. Maintain an open character by deemphasizing property lines and reinforcing the continuity of the creek.
5. Transition landscaping toward and along the creek corridor for a consistent native riparian plant palette.
6. Provide public creek crossings to link neighborhoods to the downtown.
7. Preserve downtown trees by designing development around existing trees and minimizing encroachment within the dripline of the trees.

This Downtown Creeks Preservation, Restoration and Development Plan provides more detailed direction than the Downtown Design Guidelines pertaining to development along the creeks.

Trails Master Plan:
Adopted in 2006, this document identifies the Shield Block Creek Trail as a planned trail facility. (See Figure 6-6)

Public Art Master Plan:
Downtown creeks and adjacent pathways and public spaces can be ideal settings for public art. The Public Art Master Plan, adopted in February 2013, promotes public art in downtown parks and public spaces.

Program:
Introduce interactive public art in downtown parks and other public spaces, particularly artworks that can be used by children for play.

This Downtown Creeks Preservation, Restoration and Development Plan contains recommendations for public art related to the creeks, particularly along Golden Gate Way.

More art in the downtown will enhance its character and make it an even greater downtown. Important locations include:

- Lafayette Plaza
- Lafayette Library and Learning Center
- Public rights-of-way (medians, sidewalks, landscaped areas)
- Publicly accessible plazas, walls, courtyards

CODES AND ORDINANCES

The Lafayette Municipal Code controls land uses and establishes development standards. It also regulates flood damage prevention, including creek setbacks.

Flood Damage Prevention Ordinance:
Lafayette Municipal Code Chapter 6-18 contains regulations and provisions created to promote the public health, safety and general welfare, and to minimize public and private losses due to flood conditions. Among its provisions it provides in Article 4, Standards for Flood Hazard Reduction applicable to all areas of special flood hazards. Article 4 sets forth standards for anchoring, construction materials and methods, elevation and flood-proofing, materials and equipment storage, utilities, subdivisions, manufactured homes and recreational vehicles, floodways and flood-related erosion-prone areas. The Ordinance includes detailed guidelines and procedures for obtaining an exception from its requirements.

Creek Setback Requirements:
For purposes of the Downtown Creeks Plan, Article 5, the existing Creek Setback Requirements, are of primary importance and are fully set forth below. Examples of these setbacks are illustrated in Figure 6-7.

6-1841 Structure setback.
(a) As defined by Section 6-312 and Section 6-355, buildings and structures shall be set back from an unimproved creek channel as follows:

(1) Channel Depth of Zero through 21 Feet. If the side slopes of the channel are steeper than 2:1 (horizontal:vertical), the width of the structure setback is determined by a line measured from the toe of the slope a distance of twice the channel depth plus the appropriate top-of-bank setback as follows:

Channel Depth (Feet)	Top of Bank Setback Minimum Width (Feet)
0 — 6	12 each side
6 — 12	15 each side
12 — 18	18 each side
18 — 21	21 each side

If the side slopes of the channel are flatter than 2:1 (horizontal:vertical), the structure setback is the appropriate setback indicated in the table above, measured from the top of the bank.

(2) Channel Depth Exceeding 21 Feet. If the depth of a channel exceeds 21 feet, the width of the structure setback is determined by measuring from the toe of the slope a distance of three times the channel depth.

(b) If a parcel is subject to subdivision easements or setback requirements under Contra Costa County Ordinance Code Sections 914-14.002 through 14.014 that are inconsistent with Section 6-1841(a), those subdivision requirements control.

(c) No permanent structure other than fences and drainage and erosion protection improvements may be constructed within the setback area. Landscaping (including trees and shrubs) is permitted within the setback area.

6-1842 Exception.
(a) The city engineer may approve exceptions to the requirements of Section 6-1841 to allow construction of structures within the setback area if:

(1) The submitted materials under Section 6-1842(c) are complete and adequate; and
(2) The property owner agrees to enter into and record an agreement holding the city and other public agencies harmless in the event of flood or erosion damage. The agreement shall bind successors in interest and be in a form acceptable to the city attorney.

(b) In approving an exception, the city engineer may impose conditions deemed necessary for creekside erosion protection and on-site drainage.

(c) A person requesting an exception under this section shall submit to the city engineer:
(1) A topographical survey of the lot precisely showing the creek bottom, sides, top of bank and proposed and existing structures;

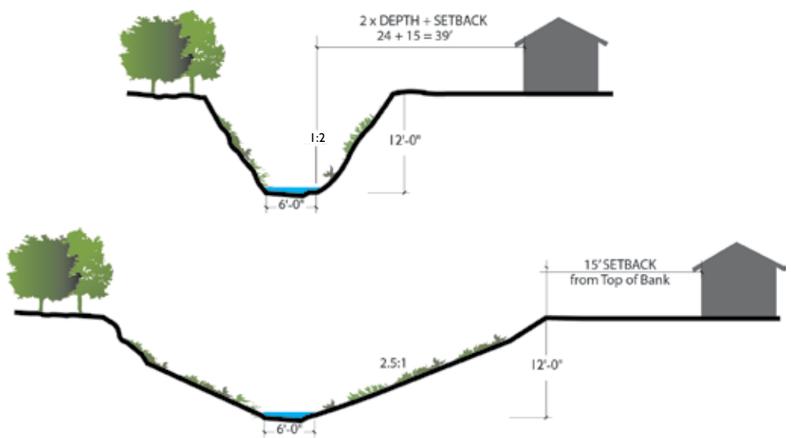

Figure 2-7: Examples of setbacks for buildings and structures, per Lafayette Municipal Code.

(2) A soils report prepared by a licensed civil engineer specializing in soils analysis which describes the soils condition for the proposed structure and analyzes and makes recommendations as to the creek bank stability and erosion hazard; and
(3) Certification signed by the engineer who prepares the soils report that in the professional opinion of the engineer there is no likelihood of a hazard to persons or property resulting from the proposed construction.

(d) The decision of the city engineer may be appealed to the city council as provided in Section 6-1852(b).

***Tree Protection Ordinance*:**
Municipal Code Chapter 6-17 addresses protection of Lafayette's trees. The ordinance supports the City's policies to protect existing woodlands and their associated vegetation, protect native trees, preserve riparian habitat, encourage the planting of native species, and avoid the cutting of mature trees. All trees in the Planning Area are considered "Protected Trees" under Item 8 of the ordinance, and subject to regulation.

***Off-Street Parking Ordinance*:**
Municipal Code Chapter 6-6 addresses off-street parking requirements for new development, re-development, or changes in use or occupancy. In some cases, expanding access to the Downtown Creeks may impact property owners' ability to meet the parking requirements without an exception or variance.

FEDERAL AND STATE REGULATORY OVERVIEW

Human activities have disrupted natural processes and past planning decisions have impacted ecosystems. Federal and State laws have been enacted to mitigate these impacts to our waters and habitats.

The Downtown Creeks Plan includes areas that are subject to protection by State and Federal agencies and governed by regulatory Acts. Agencies with jurisdiction over creek-related projects include, but are not limited to: 1) the United States Army Corps of Engineers (Corps), 2) the California Department of Fish and Wildlife (CDFW), and 3) the Regional Water

Quality Control Board (RWQCB). Regulatory Acts that may apply to creek projects in this area include the Clean Water Act, the Porter-Cologne Act, State Fish and Game Code, as well as the Migratory Bird Treaty Act, the California Environmental Quality Act (CEQA), and possibly the Endangered Species Act.

Various levels of permitting may be required depending on the level of improvements proposed. Routine maintenance and some habitat enhancement may be possible with only agency consultation. Other works such as bank stabilization may require more extensive permitting, depending on the particulars of the project. Ongoing coordination with the regulatory agencies may result in a palette of improvements that the agencies are likely to approve, or more clearly defined project criteria, reducing uncertainty for property owners. This comprehensive Downtown Creeks Plan may result in reduced permitting requirements, facilitated permitting, or reduced fees for individual property owners if agencies approve and permit specific actions described in the plan with the City or a special district taking the role of permitee, or the City completes required studies or inventories.

REGULATORY AGENCY JURISDICTION

In addition to local plans, policies and ordinances, State and Federal regulations provide for the protection and management of sensitive biological and wetland resources, including creek corridors found in the Planning Area. Modifications to the creek corridors are regulated by the Corps, the RWQCB and the CDFW. The regulations pertaining to resource protection and management activities in the Planning Area are summarized below.

WATERS OF THE UNITED STATES

The Corps regulates "Waters of the United States (U.S.)" under Section 404 of the Clean Water Act. "Waters of the U.S." are defined broadly as waters susceptible to use in commerce, including interstate waters and wetlands, all other waters (intrastate waterbodies, including wetlands) and their tributaries. The placement of fill material into "waters of the U.S." (including wetlands and unvegetated other waters) generally requires an individual or nationwide permit from the Corps under Section 404 of the Clean Water Act. The Corps regulatory authority through most of the Planning Area is limited to the portion of the creek bed and lower bank below the ordinary high water mark (OHWM). This varies in height through the Planning Area, but the OHWM generally falls at or below a foot or two above the creek bed, and is characterized by evidence of past flows, eroded banks, and accumulated debris. The width between the OHWM varies widely through the Planning Area from about 10 to 30 feet across the bottom of the channel, depending on the steepness of the banks, location in the watershed, and other variables.

WATERS OF THE STATE

The term "Waters of the State" is defined by the Porter-Cologne Water Quality Control Act as "any surface water or groundwater, including saline waters, within the boundaries of the State." The RWQCB protects all waters in its regulatory scope, but has special responsibility for wetlands, riparian areas, and headwaters. These water bodies have high resource value, are vulnerable to filling, and are not systematically protected by other programs. RWQCB jurisdiction includes "isolated" wetlands and waters that may not be regulated by the Corps under Section 404. "Waters of the State" are regulated by the RWQCB under the State Water Quality Certification Program, which regulates discharges of fill and dredged material under Section 401 of the Clean Water Act and the Porter-Cologne Act. Projects that require a Corps permit, or fall under other Federal jurisdiction, and have the potential to impact "Waters of the State," are required to comply with the terms of the State Water Quality Certification determination. If a proposed project does not require a Federal permit, but does involve dredge or fill activities that may result in a discharge to "Waters of the State", the RWQCB has the option to regulate the dredge and fill activities under its State authority in the form of Waste Discharge Requirements.

Jurisdictional waters of the State regulated by the RWQCB extend to the top of bank and outer edge of woody riparian vegetation where present along creeks in the Planning Area. Distinguishing the edge of woody riparian vegetation beyond the top of bank is difficult in some locations in the Planning Area, given that the riparian woodlands can integrate with the surrounding upland oak and bay woodlands, and that some of the dominant tree species found in the riparian woodlands along the creek corridors are found in non-riparian uplands as well, such as valley oak, coast live oak, California bay, and California buckeye. Native willows, alders, and box elder are typically restricted to riparian conditions and can be used to distinguish between the limits of riparian habitat and where it continues as non-regulated oak woodlands.

STREAMS, LAKES AND RIPARIAN HABITAT

Streams and lakes, as habitat for fish and wildlife species, are subject to jurisdiction by the CDFW under Sections 1600-1616 of the State Fish and Game Code. Alterations to or work within or adjacent to streambeds or lakes generally require a 1602 Lake and Streambed Alteration Agreement. The term stream, which includes creeks and rivers, is defined in the California Code of Regulations (CCR) as: "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other wildlife. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation". In addition, the term stream can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife. Riparian is defined by the CDFW as "on, or pertaining to, the banks of a stream," and riparian vegetation is defined as, "vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself". Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from CDFW, even where it extends beyond the top of bank.

Like the State waters regulated by the RWQCB, jurisdictional waters regulated by the CDFW extend to the top of bank and outer edge of woody riparian vegetation where present along creeks in the Planning Area.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

Municipal Regional Stormwater Permit, Provision C.3: The Federal Clean Water Act addresses urban stormwater runoff pollution through the National Pollutant Discharge Elimination System (NPDES) stormwater program. The San Francisco Bay Regional Water Quality Control Board administers this program under the Municipal Regional Stormwater Permit (MRP), which regulates both the quality and quantity of stormwater discharges. The effective date of the most recent MRP is January 1, 2016, and the City of Lafayette as a Permittee is covered under this MRP. The provisions of this permit are implemented through Lafayette Municipal Code Chapter 6-18, Stormwater Management and Discharge Control Ordinance No. 628.

Generally speaking, Provision C.3 of the MRP applies to new development and redevelopment projects (including road projects) which create and/or replace 10,000 square feet or more of impervious surface, as well as to several types of projects (auto service facilities, gas stations, restaurants, and uncovered parking lots) which create and/or replace 5,000 square feet or more of impervious surface. Site design requirements apply to all development projects of 2,500 – 10,000 square feet and detached single-family home projects. The goal of Provision C.3 is to address stormwater runoff pollutant discharges and prevent increases in runoff flows, primarily through the implementation of low impact development (LID) techniques.

LID techniques are intended to reduce runoff and mimic a site's predevelopment hydrology by minimizing disturbed areas and impervious cover and then infiltrating, storing, detaining, evapotranspiring, and/or biotreating stormwater runoff close to its source. LID practices include measures such as rain barrels and cisterns, green roofs, permeable pavement, preserving undeveloped open space, and biotreatment through rain gardens, bioretention units,

bioswales, and planter/tree boxes.

Provision C.3 also requires Lafayette to develop a Green Infrastructure Plan, which will expand the use of LID on a larger scale. The Green Infrastructure Plan would be implemented over the 2020 – 2040 time period.

It is the intent of the Downtown Creeks Plan to identify opportunities to integrate the MRP's stormwater treatment strategies into its recommendations for creek enhancements.

SPECIAL-STATUS SPECIES

Special-status species include those plants and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the Federal Endangered Species Act (ESA) or California Endangered Species Act (CESA). These Acts afford protection to both listed and proposed species. In addition, CDFW Species of Special Concern and the National Marine Fisheries Service (NMFS) Species of Concern, which are species that face extirpation if current population and habitat trends continue, U.S. Fish and Wildlife Service (USFWS) Birds of Conservation Concern, sensitive species included in USFWS Recovery Plans, and CDFW special-status invertebrates are all considered special-status species. Although CDFW Species of Special Concern generally have no special legal status, they are given special consideration under the California Environmental Quality Act (CEQA). In addition to regulation for special-status species, most birds in the United States, including birds that are not special-status species, are protected by the Migratory Bird Treaty Act of 1918. Under this legislation, destroying active nests, eggs, and young is illegal. Plants species on California Native Plant Society (CNPS) Lists 1 and 2, and possibly List 3 when of local concern, are also considered special-status plant species. Impacts to these species must be considered under CEQA.

A search of records maintained by the California Natural Diversity Data Base (CNDDB), together with other relevant information, indicate that occurrences of numerous plant and animal species with special status have been recorded from or are suspected to occur in central Contra Costa County and the Lafayette vicinity. Only a general occurrence record of pallid bat (*Antrozous pallidus*) extends over the Planning Area, based on an occurrence record from 1907. Numerous other occurrences have been reported from the surrounding area, primarily from undeveloped lands, but suitable habitat for these species is generally absent in the Planning Area. Below is a summary of the special-status plant and animal species known from central Contra Costa County and Lafayette vicinity, and conclusions regarding possible presence in the Planning Area.

Plant Species. A number of plant species with special status have been reported from the vicinity of the Planning Area, and based on recorded geographic range and preferred habitat, numerous other species may potentially occur in the central Contra Costa County vicinity. These have varied status, and many are considered rare (list 1B) by the CNPS and would be considered of special-status under CEQA regulations. However, none have actually been reported from the Planning Area, with six species have been reported within 2 miles. Existing urbanization on the valley floor greatly limits the likelihood of continued occurrence of any populations of special-status plant species within the Planning Area. Any occurrences of big tarplant (*Blepharizonia plumosa)*, Contra Costa goldfield (*Lasthenia conjugens*), and Congdon's tarplant (*Hemizonia parryi ssp. congdonii)*, which were once known from valley floors east of the Planning Area, are presumed extirpated as a result of urbanization. Many of the special-status plant occurrences in the protected open space lands north, south, and west of the Planning Area remain, including occurrences of Diablo helianthella (*Helianthela castanea*), bent-flowered fiddleneck (*Amsinckia lunaris*), and Mt. Diablo fairy-lantern *(Calochortus pulchellus*). California black walnut *(Juglans hindsii*) occurs in the riparian woodlands along Lafayette Creek and other drainages in the Planning Area, but these are most likely originated from the root stock of the commercial English walnut once grown in the area, and are presumably not indigenous.

Animal Species. A number of bird, mammal, reptile, fish, and invertebrate species with special-status are known or suspected to possibly occur in the central Contra Costa County vicinity. Only pallid bat has actually been reported from the Planning Area by the CNDDB. This occurrence was part of a vague record from 1907 which extends over the southern Lafayette area. An estimated 12 additional species are either known from or have occurrence reports within 2 miles of the Planning Area. These include: Cooper's hawk (*Accipiter cooperi*), sharp-shinned hawk (*Accipiter striatus*), golden eagle *(Aquila chrysaetos*), white-tailed kite (*Elanus caeruleus*), prairie falcon (*Falco mexicanus*), loggerhead shrike (*Lanius ludovicianus*), yellow warbler (*Dendroica petechia)*, northwestern pond turtle (*Actinemys marmorata)*, Alameda whipsnake (*Masticophis lateralis euryxanthus*), California red-legged frog (*Rana aurora draytonii)*, Berkeley kangaroo rat (*Dipodemys hermanni berkeleyenis*), and mountain lion (*Felis concolor*). Many non-listed special-status species are not monitored by the CNDDB, and occurrence data are therefore not available.

Most of the special-status animal species known or suspected to occur within the Planning Area are bird species which forage in the remaining undeveloped habitats and natural habitats along the creek corridors. These include: Cooper's hawk, sharp-shinned hawk, white-tailed kite, prairie falcon, loggerhead shrike, and yellow warbler. The primary habitat available to these species occurs in areas of well-developed riparian woodland and scrub along the creeks through the Planning Area. No nesting locations have been identified by the CNDDB in the Planning Area, but suitable nesting substrate occurs in the mature trees for these and other species of birds, including more common raptors such as great horned owl, red-tailed hawk, and American kestrel. Golden eagle may occasionally pass over the Planning Area, along with other special-status bird species such as American peregrine falcon, but suitable nesting and foraging habitat is absent for these species that tend to be more sensitive to human activity. Nests of most bird species are protected under the Migratory Bird Treaty Act when in active use, and nests of raptors (birds- of-prey) are also protected under State Fish and Game Code when in active use.

Regarding special-status amphibians and reptiles, California red-legged frog and Alameda whipsnake are known from areas with suitable habitat to the south and north of the Planning Area. However, suitable habitat for these species is generally absent in the Planning Area itself, and neither of these species are currently suspected to occur within the Planning Area. Alameda whipsnake is typically associated with dense chaparral and adjacent grassland and riparian habitat. Existing development on the valley floor precludes dispersal of Alameda whipsnake into the Planning Area. Occurrences of California red-legged frog have been reported from the undeveloped hillsides about 1.5 miles south of the Planning Area. This species is typically associated with ponds and creeks, utilizing the surrounding grasslands and woodland habitats for foraging and seasonal dispersal. Because the creek corridors on the valley floor have been fragmented and adjacent habitat has been impacted by adjacent urbanization, populations of California red-legged frog are not expected to occur within the Planning Area, although there is a remote potential for individuals to be washed down or occasionally disperse through some reaches where protective cover remains. But predation by raccoons and other predators limits the potential for permanent occupation in the Planning Area. Deeper pools within the Planning Area could provide suitable retreat habitat for northwestern pond turtle, which may disperse along the creek corridors when conditions are appropriate.

SENSITIVE BIOLOGICAL COMMUNITIES

Sensitive natural communities include habitat that fulfill special functions or have special values, such as wetlands, stream and riparian habitat, or are considered rare enough by the State to receive consideration under CEQA. State and Federal waters are regulated as described above. Natural communities considered sensitive are those identified in local or regional plans, policies, and regulations, or by the CDFW. CDFW monitors sensitive natural communities as part of the CNDDB, and are ranked with a high inventory priority in the List of California Natural Communities. Impacts to sensitive natural communities must be considered under CEQA.

The riparian scrub and woodlands along the creek

corridors in the Planning Area are considered a sensitive natural community type where they continue to be dominated by native species. While reaches supporting a tree cover of naturalized coast redwood and other non-indigenous species still provide important shade and foraging opportunities for birds and other wildlife, they do not qualify as a sensitive natural community type.

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CHAPTER 3: PUBLIC PROPERTY IMPROVEMENTS

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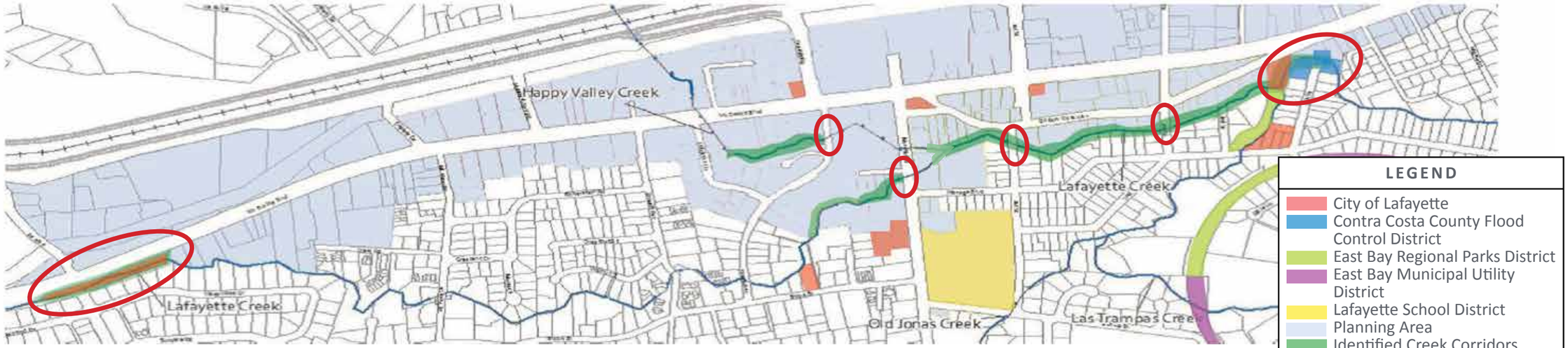

Figure 3-1: Public ownership and project locations

INTRODUCTION

The majority of Lafayette's Downtown Creeks are located on private property. The creek reaches at either end of the study area, the West Reach and East Reach 3, are on publicly owned land. Additionally, the creeks are visible from several public rights-of-way in other reaches where they pass under streets such as Moraga Road or Lafayette Circle, or where they run adjacent to streets, such as along Mt. Diablo Blvd. across from the Veterans' Memorial Center. In these areas, the City of Lafayette can initiate creek improvement projects without dependence on private property owner involvement.

Several of the locations for possible public improvements have high public visibility and good accessibility. The West Reach of Lafayette Creek, in particular, is highly visible and is an area of increasing pedestrian activity. Figure 2-1, above, shows publicly owned lands in the downtown area. Roadways also generally fall within this category. Locations for the projects described in this chapter are shown on the map.

In some instances, a proposed creek enhancement project involves improvements on both public and private property. These projects are described in both this chapter on Public Property Improvements and the following chapter on Private Property Improvements. The areas of public property and private property are distinguished in the graphics and the descriptions. For projects involving both public and private property, the elements of the project may be undertaken in phases, or a partnership agreement between the City and the private property owners may be crafted that accomplishes the project as a whole.

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WEST REACH CATALYST PROJECT:

Creek bank erosion control and restoration, paths, signage, seating and overlooks. Parking to be replaced with rain gardens.

Public ownership of this segment of the creek provides a unique opportunity to create a model for creek restoration, exemplifying the benefits of creek restoration to the public, and providing a blueprint for restoration of other areas of Lafayette's creeks in the Planning Area. Private land owners could leverage this information to restore segments of the creek which they own.

The improvements at this location would also create a gateway to Lafayette's downtown for those traveling from the west, emphasizing the importance of the creeks to Lafayette and the downtown.

Habitat Restoration and Bank Stabilization

The natural creek conditions that exist along the West Reach have suffered extensively from non-native invasive plant species. Removing the non-native vegetation, and re-vegetating with native riparian plants, would be an important component of restoring this area of the creek to more natural conditions. Removing the English ivy would also make the creek area and habitat much more open and visible to pedestrians along this heavily traveled route. Additional invasives at the top of bank obscure views down to the creek channel, and their removal would further open views to the creek.

Bank erosion

The creek bank in this area has suffered significant localized erosion. Bioengineering approaches may be used to stabilize these areas. For example, in the case of the erosion which has exposed tree roots near Mt. Diablo Blvd., packing the roots with brush and willow stakes could provide a natural medium what would trap sediment. These live materials would take root and revegetate the bank, providing further stabilization.

Invasive plants

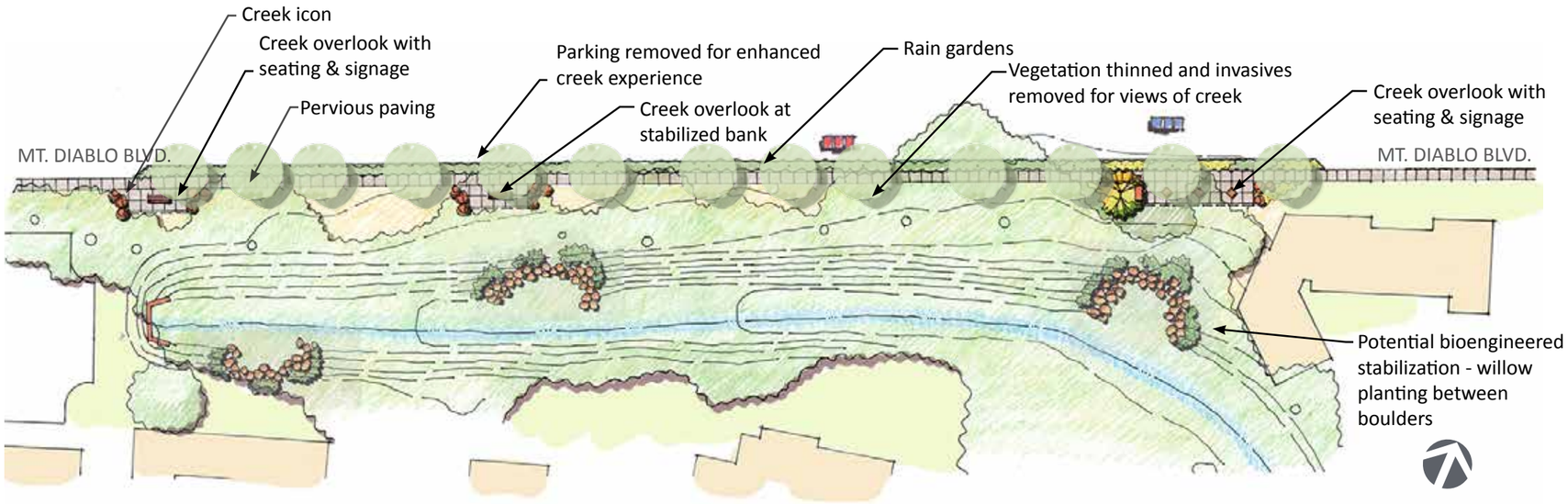
Pedestrian Enhancements and Bioretention

To improve the pedestrian experience along this segment of Lafayette Creek and provide a visual connection from the road, approximately 18 on-street parking spaces on the east bound side of Mt. Diablo Blvd. could be eliminated and replaced with a wider sidewalk (pervious paving), overlooks, and bioretention areas (rain gardens). A bioretention area

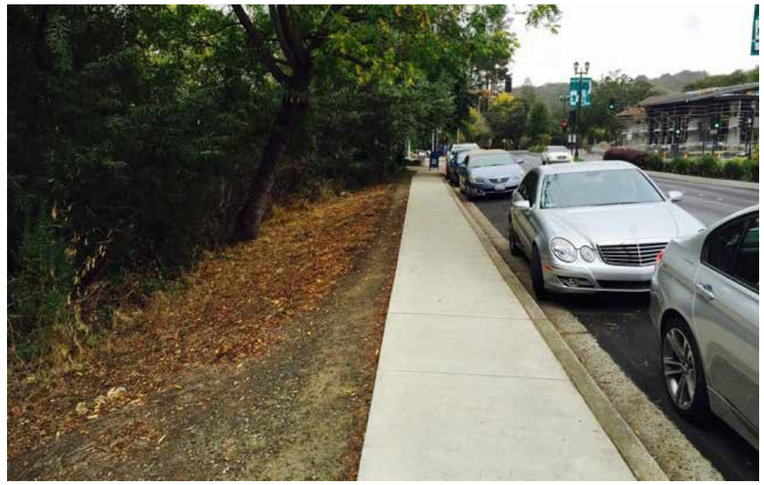
Parked cars and crowded vegetation narrow pedestrian path

would serve a dual purpose of buffering pedestrians from busy Mt. Diablo Blvd. and cleansing stormwater runoff before it reaches the creek. The pervious paving at this area would be a continuation of the existing pervious sidewalk west of Village Center Road.

An overlook deck at the area where erosion is threatening to undermine Mt. Diablo Blvd. could serve a dual purpose of increasing visual access to the



Plan view - Creek overlooks, rain gardens and pervious paving



Current View - Mt. Diablo Blvd.

View Map

creek, as well as shoring up this area of high erosion concern. Additional opportunities lie further east where the bank needs to be stabilized due to erosion issues, and to the west where the creek exits the culvert. Overlooks provide pleasant resting spots for pedestrians as well as the opportunity for interpretive signage to educate about the creek, habitat and watershed. Locating a creek icon at this gateway would introduce people to the concept that the icon signifies the presence of a downtown creek.

Figure 3-2: Overlook, looking west along Mt. Diablo Blvd.

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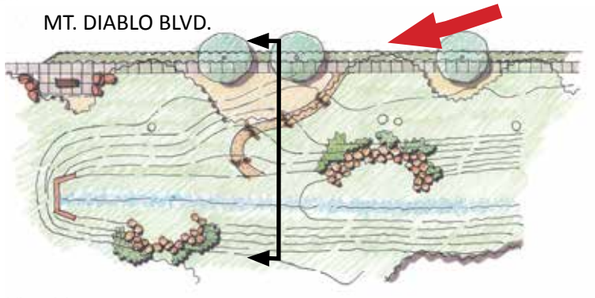
The opportunity for planned access to the creek channel could be explored in this location. Currently, an informal path down the bank is exacerbating the erosion problems in this area. Regrading and formalizing a pathway could both allow people to have physical access to the creek, and address the erosion caused by the informal path.

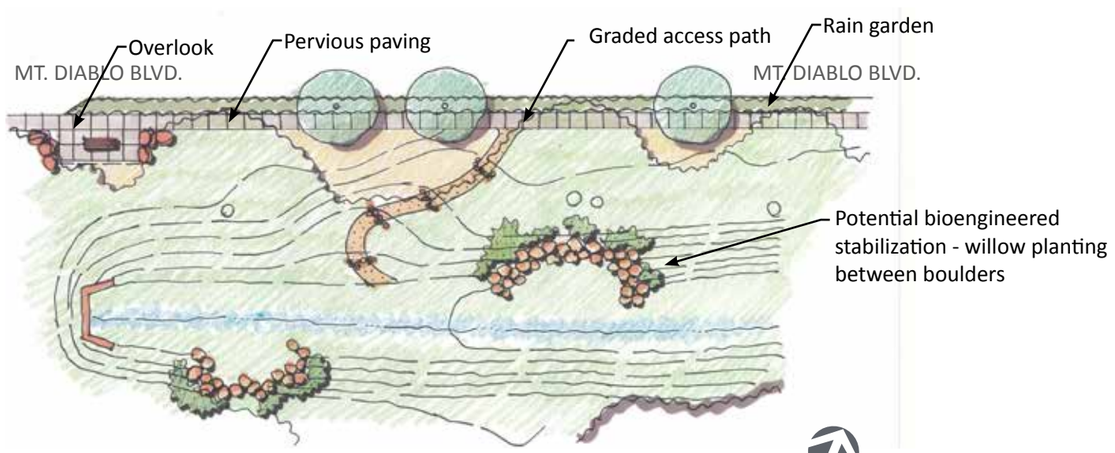
The West Reach Catalyst Project could potentially be phased. Phase 1 would include invasive plan removal, vegetation thinning, revegetation with native riparian plants, stabilizing the creek bank under the California buckeye tree where erosion damage is most severe, a creek overlook deck, and a formal path to the creek channel. A separate Phase 2 project could occur later and include bank stabilization at the other two locations of minor bank erosion, two additional creek overlooks, rain gardens and the gateway feature.

Pervious paving would connect to sidewalk segment directly to the west of this reach

See Figs. 3-3, 3-4



View Map



Plan View - Optional treatment with planned creek access

Figure 3-3: Alternate treatment with planned creek access

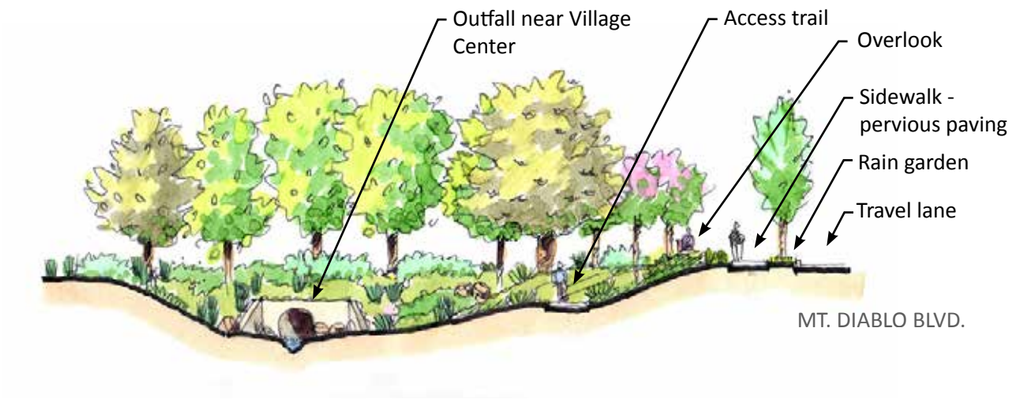


Figure 3-4: Section/elevation showing creek trail and overlook

CROSSINGS AND STREET FRONTAGES:

NORTH REACH:

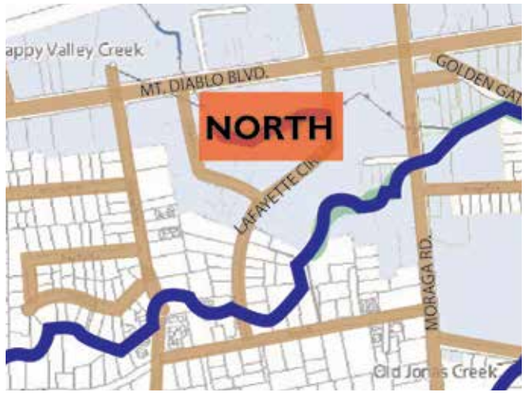
Lafayette Circle bulb-out, rain garden, decorative fence and signage. Bioretention along Mt. Diablo Blvd.

Although most of the North Reach flows through private property, Happy Valley Creek is quite visible from the public sidewalk at Lafayette Circle. Expanding the sidewalk area where Happy Valley Creek approaches the Lafayette Circle culvert, and marking the creek with a creek icon, interpretive signage and decorative fencing, would raise awareness of the creek at this well-traveled area. Removal of two to three on-street parking spaces could allow for creation of rain gardens or other bioretention at the creek crossing.

Along Mt. Diablo Blvd., existing planters could be converted to bioretention areas (rain gardens) by extending the planters, using appropriate planting and subdrains, and introducing curb cuts to allow stormwater from the street to infiltrate into the planters before entering the storm drain system. Incorporation of rain gardens along Mt. Diablo Blvd. would positively impact the quality of stormwater flowing into Happy Valley Creek, and interpretive signage could explain that these planters cleanse the water that is discharging into the creek. In the example shown in the photosimulation on this page, extension of rain gardens across a driveway access point would require partnership with the affected private property owner to change vehicular access to pedestrian only access, and consolidation of the rear parking areas.

Lafayette Circle - current view

Lafayette Circle - Expanded bulb-out, rain garden, creek icon



View Map

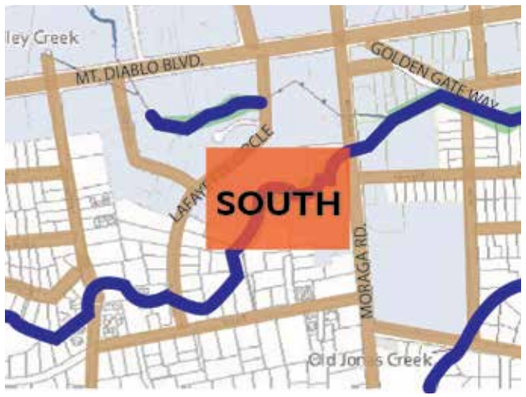
Mt. Diablo Blvd. Existing frontage with driveway access to rear parking area and creek

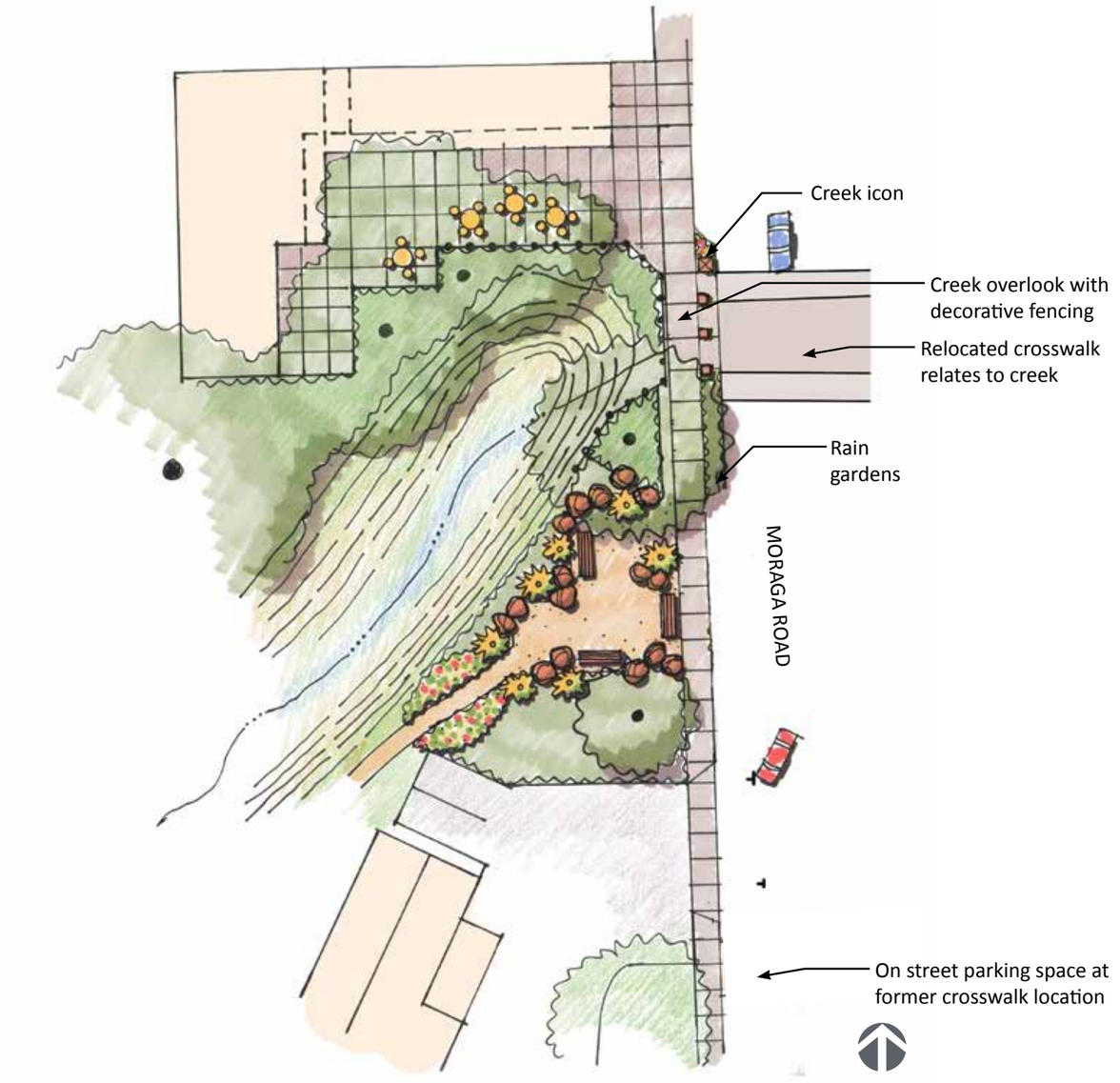
Proposed rain gardens and creek icon along Mt. Diablo Blvd. are public improvements; conversion of driveway to pedestrian access would be a private improvement

SOUTH REACH:

Moraga Road bulb-out, overlook, creek icon, signage, decorative fence, bioretention.

Expanding the sidewalk area where Lafayette Creek approaches the Moraga Road culvert, and marking the creek with a creek icon, interpretive signage and decorative fencing, would raise awareness of the creek at this well-traveled area. Removal of two to three street parking spaces could allow for creation of rain gardens or other bioretention, and create room for seating. The illustrative plan view on this page shows improvements to both the public property (sidewalk and street) and private property (areas along the creek, to the west of the sidewalk). Public improvements could include relocation of the pedestrian crossing of Moraga Road, as shown in the photosimulation on the next page, to focus more attention on the creek corridor. Moving the crosswalk would reduce the loss of on-street parking spaces, as on-street parking could be restored where the crosswalk is presently located. Although the level of vehicular traffic on Moraga Road creates a sometimes unpleasant noise level, a bulb out and rain garden could create a buffer between pedestrians on the sidewalk and the passing traffic. Potential private improvements are discussed in the following chapter.





Plan View - Sidewalk creek overlook with rain gardens, creek icon, signage and decorative fencing, as well as relocation of crosswalk, would be improvements on public property

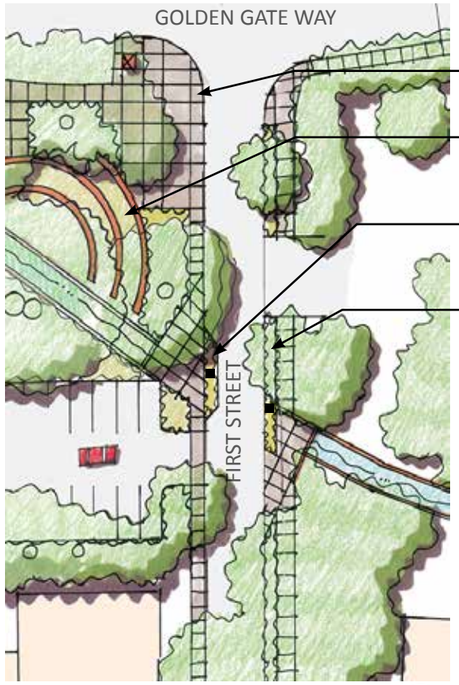
Current View (South Reach - Moraga Road)

View Map

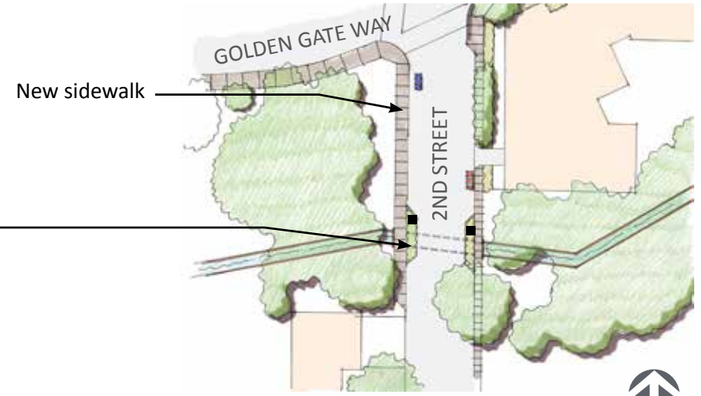
Bulb-out with rain gardens, creek icon and relocated crosswalk. Parking lot is private property

EAST REACHES 1 & 2:

The channelized portions of Lafayette Creek pass under First and Second Streets, providing the opportunity for public improvements including sidewalk enhancements (or construction of sidewalks where they are lacking), creek icons, and bulb-outs with rain gardens for bioretention in the public right-of-way. Improvements to the sidewalks on First and Second Streets are included in the City's Master Walkways Plan.



Plan View - First Street with rain gardens and creek icons at creek crossings



Plan View - Second Street bulb-outs with rain gardens and creek icons at creek crossings

First Street, west side - opportunity to improve sidewalk, add bulb-out with rain garden and signage

First Street, east side - opportunity to convert existing planting area to rain garden

Second Street creek crossing, east side - opportunity to open view to creek, add bulb-out with rain garden and signage

Second Street creek crossing, west side - opportunity to add sidewalk and bulb-out with rain garden and signage

EAST REACH 3:

Cleanup of invasives. Installation of stairs to access terrace area at confluence of Lafayette & Las Trampas Creeks. Improvement of creek visibility from bridge. Creek-related art installation and creek icon to enhance visual connection from Mt. Diablo Blvd. & Golden Gate Way.

East Reach 3 of Lafayette Creek at its confluence with Las Trampas Creek provides the opportunity for another catalyst and gateway project for the downtown creeks. Here, the creeks run through or adjacent to public lands, owned by the City of Lafayette, East Bay Regional Parks District (EBRPD) and the Contra Costa County Flood Control and Water Conservation District (Flood Control District). This area has the broadest creek channel, and here the creeks are most directly accessible. The EBRPD Las Trampas-Briones Trail crosses Lafayette Creek at this point, and a terrace at the confluence of the creeks is large enough to serve as passive recreational space.

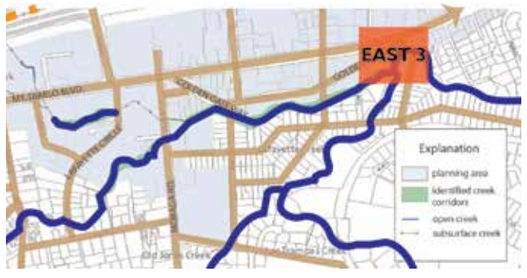
There are few non-native invasive plant species located along East Reach 3. As such, only limited restoration is required in this area, with the exception of the removal of a small area of Himalayan blackberry and selective pruning to improve views. It may be an ideal area for restoring habitat for the western pond turtle and other native wildlife, and reintroducing wildlife species to the area.

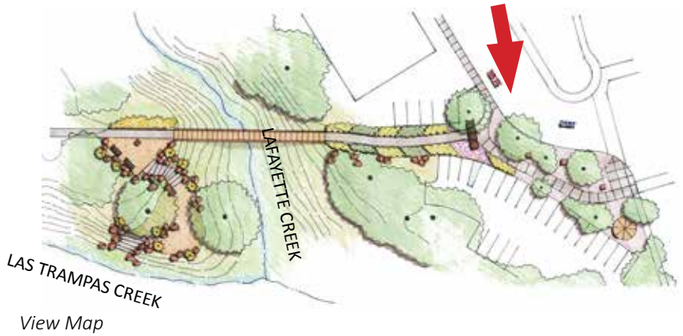
The flat floodplain areas in East Reach 3 make it ideal for public use. This feature, combined with natural creek conditions, provide an opportunity to highlight local flora and fauna via interpretive signage and extend pathways along the creek. This area is less impacted by invasive species than other reaches of the downtown creeks, so removal of invasives and re-vegetation with riparian native species would not be as extensive as in other areas. A controlled access path could be created to allow the public to safely access the water near the confluence of Lafayette and Las Trampas Creeks.

Stairs could be created leading to a lower terrace adjacent to the bridge to expand access to the creek in this area. Views of the creek could be enhanced by selectively pruning to open views to the creek. Views from the bridge could be greatly improved by replacing the solid bridge sides with decorative railings or another treatment that allows views out. The existing solid bridge sides completely block views of the creek for children or anyone in a wheelchair.

From Mt. Diablo Blvd., although the creek is not directly visible, there is an existing gazebo park that could be enhanced to indicate the presence of the creeks from Mt. Diablo Blvd. The EBRPD trail entry and garden accessible from Golden Gate Way could provide a more visible connection to the creek.

The parking lot area adjacent to the gazebo is proposed as a future park site (“Gazebo Park”) with picnic tables and other park facilities, as part of the Downtown Specific Plan. Thematic wayfinding elements and public art could be used to align the park entry to the creek area and trails from Golden Gate Way and Mt. Diablo Blvd.





View Map

Current View from Golden Gate Way

Art and creek icon to indicate creek presence

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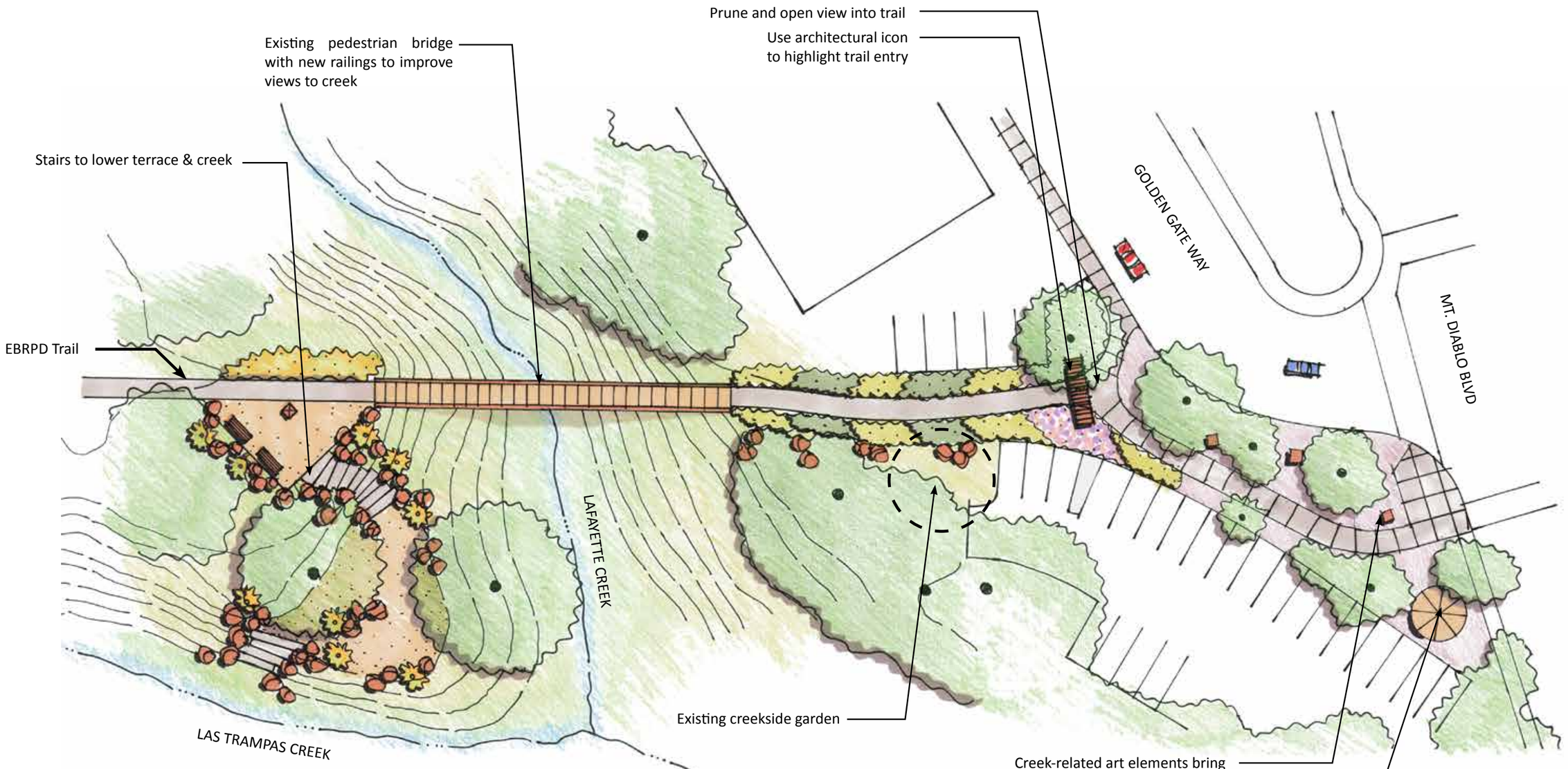
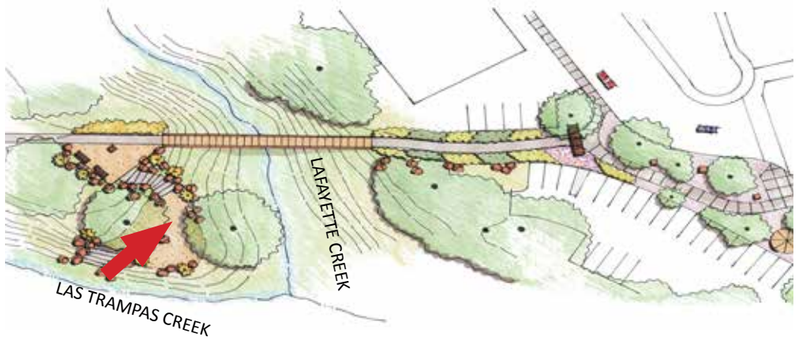


Plan View - Visibility improvements and access to creek terrace

Current View



View Map

Stairs to lower terrace at creek confluence

Bridge sides could be more transparent for views to creek

Example of bridge with full views to creek

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CHAPTER 4: PRIVATE PROPERTY IMPROVEMENTS

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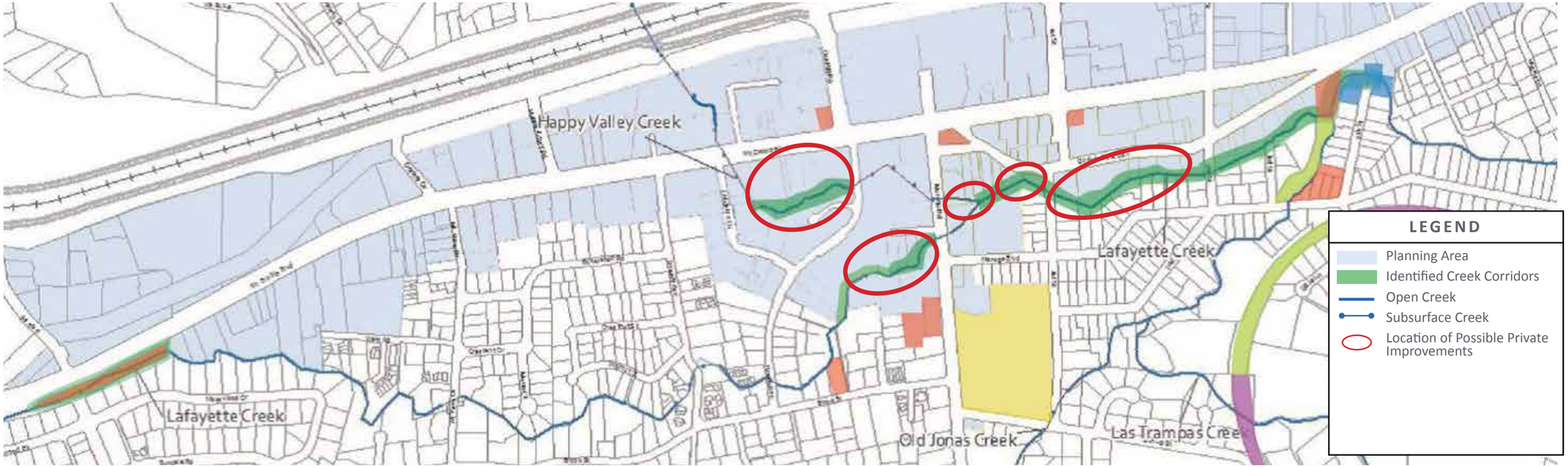


Figure 4-1: Project locations on private property

INTRODUCTION

Most of the creeks in Lafayette's downtown are located on private property. The previous chapter described creek enhancements that could be undertaken on public property. Creek enhancements in the remaining areas, under private control, will require the cooperation of the owners of the subject properties. While bank stabilization or creekside dining areas directly benefit property owners, enhancements such as trails or open spaces have public benefits as well. Most of the proposed creek enhancements will require permitting, coordination between adjacent owners, and the expense of construction and maintenance. Many lots are small, and often redevelopment of a property could result in the usable areas on the property being reduced by creek setback and parking requirements. Given these factors, consideration must be given to potential benefits that may be granted to property owners in exchange for the community benefits of improvements to the downtown creeks.

This chapter describes potential location-specific improvements to the creeks on private property that can provide public and environmental protection benefits as well as economic benefit to downtown businesses, by making the downtown a more unique and desirable place to walk, linger, dine and shop. As a focal point and amenity, the creeks can make downtown Lafayette a more attractive, pedestrian-friendly destination. Additional creek protection and preservation treatments described in Chapter 4 are applicable to all portions of the Planning Area.

Diners enjoying the creekside setting in San Luis Obispo

Even channelized creeks can be an attraction

Plan View

NORTH REACH

Expansion of pedestrian connections, and potential pedestrian creek crossing. Consolidated parking and auto circulation. Future "Town Green" park/plaza, and creek-oriented commercial use spaces.

The North Reach is located in one of Lafayette's historic areas known as the "Shield Block." As noted in the Downtown Specific Plan, the architecture and passageways of this block provide some of the best examples of Lafayette's pioneering small-town character. Since much of this segment of the creek has natural creek conditions, and it is located in one of Lafayette's most historically significant areas, restoring the riparian habitat and conditions along this reach would further solidify and unify the historic character of the Shield Block.

The City's Trails Master Plan includes creekside trails through the Shield Block for which the City may acquire a trail easement as a condition of approval for development. Improved pedestrian circulation will be paramount to increasing public access to the creek. To achieve this goal, it is important to connect existing east-west oriented paths along the creek bank with new, 5' wide paths of decomposed granite or pervious paving to allow complete mid-block access along the creek. Additionally, north-south pedestrian access across the creek will create a more pedestrian friendly environment, and improve connections between commercial uses and from the adjacent residential neighborhoods to downtown Lafayette's businesses and the BART station. Two locations have been identified in the Downtown Specific Plan as potential sites for a future pedestrian bridge across Happy Valley Creek. One proposed bridge site is located toward the end of Fiesta Lane, crossing to the Postino Restaurant property. Postino representatives are supportive of the bridge. The other site is slightly further west, as shown on the plan view. Fewer trees would need to be removed to construct a bridge at this other location, and with more open vantage points, it may provide a better view of the creek in both directions. Improved pedestrian circulation through this area would also provide an easily accessible environmental education opportunity for children and adults. Interpretive signs could be placed along pedestrian pathways and creek overlooks.

Current view

View Map

Expanded improvements at "Town Green," looking south along Lafayette Circle. The sidewalk and bulbout areas are public, but the Town Green is currently privately owned.

In the short term, consolidation of the individual parking lots on the north side of the creek could allow for more efficient use of the parking spaces, allow for completion of the east-west path along the top of creek bank, and expand pedestrian access from Mt. Diablo Blvd. by converting some vehicular access to pedestrian access as shown in the photosimulation on page 11 in the previous chapter. As stormwater runoff from the parking lots located immediately adjacent to the creek banks is likely reducing creek water quality, reconfiguring and designing the parking lots and pedestrian access through these areas could provide an opportunity to develop bioretention areas at the rear of the parking lots above the creek banks. Completion of the pedestrian path in pervious paving, along with installation of bioretention, would improve water quality as well as allow public access and create a visual enhancement

In the longer term, acquisition of property for provision of additional off-site parking or improved parking management would allow for a significant reduction of parking at the rear of the businesses on the north side of the creek. This would allow businesses to orient outdoor use spaces such as dining plazas toward the creek. The Downtown Specific Plan also identifies the area north of the creek at Lafayette Circle as a future "Town Green." A public space in this location would invite pedestrians to enjoy the creekside experience, and businesses could build upon this public space to create a creek-focused dining and shopping destination, as has been done in San Luis Obispo, California and Ashland, Oregon, and other areas.

Some of Lafayette's most mature Valley Oak trees are located in the Shield Block and visible from Lafayette Circle; these trees are remnants of the native riparian vegetation that existed along our downtown creeks and could be highlighted for their historical and ecological significance to the city. Making these trees a focal point in the landscape by adding seating or interpretive signage would emphasize their importance to Lafayette. The mature trees also provide shade in the hot summers, and create an attractive

Current View

View Map

ambiance for lingering.

Happy Valley Creek is visible from Lafayette Circle, and improvements in the public right-of-way are discussed in the previous chapter. Beyond the right-of-way, an overlook with seating adjacent to the sidewalk would provide a gathering spot for visitors, its visibility from the road would increase awareness of the creek, and interpretive signage could be installed to educate visitors on the riparian habitat. Re-imagining the concrete foundation wall along the creek at The Cooperage would provide an element to enhance the character of the downtown. A mural on this wall could integrate images or concepts relevant to a riparian ecosystem, and could also be part of the visual experience from the overlook. Another option would be to install and irrigate plants on the wall face so it becomes a "living green wall."

The majority of improvements proposed for this area would occur incrementally over time, and would be linked to the redevelopment and improvement activities on individual properties.

Mural and decorative fencing at the Cooperage

A living "green wall" could incorporate native species

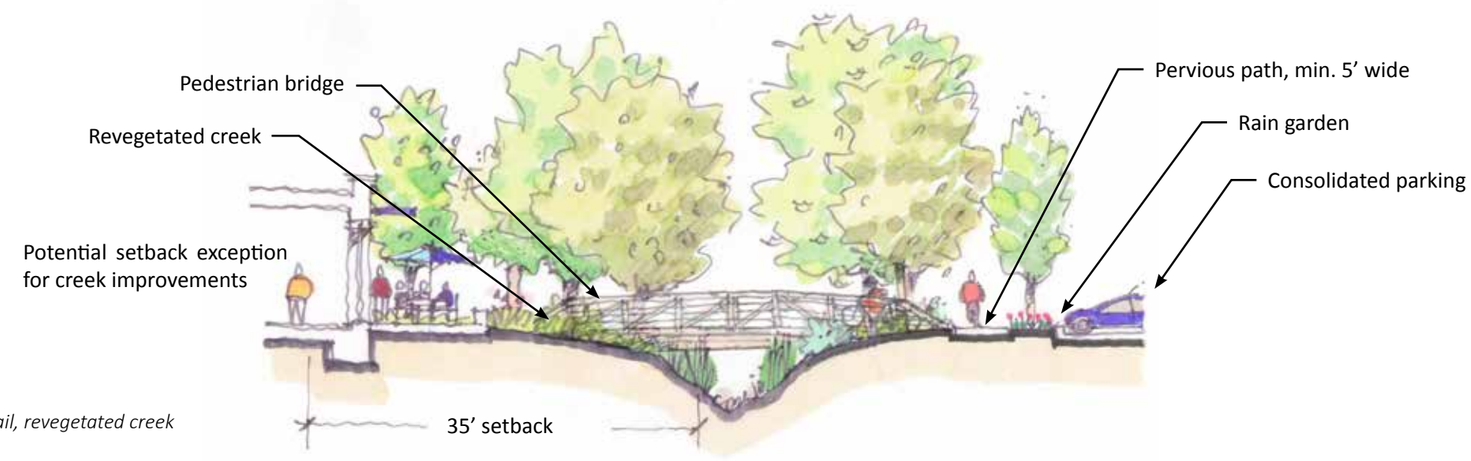
Wall treatments with raised elements provide interest

Current View

View Map

North-south pedestrian connection, with creek icons, looking north toward Clock Tower

Trails Master Plan calls for soft surface creekside paths in Shield Block, similar to this path along Foss Creek in Healdsburg



Pedestrian bridge, trail, revegetated creek

SOUTH REACH:

Increase pedestrian connections. Replace culvert under church parking with bridge, and restore the creek. Create creek-oriented use areas adjacent to creek at Moraga Road.

New pedestrian pathways in this segment could create a more cohesive sense of place as well as improve connections between the residential neighborhoods to the south and the downtown. A network of pedestrian pathways in this area would better integrate the riparian corridor into the everyday lives of Lafayette residents. Pathways located further away from busy streets such as Moraga Road would allow pedestrians to enjoy not only views of the creek, but also the pleasant sound of the running waters of the creek.

A major opportunity exists in this area to restore a significant portion of the reach to a natural condition. Approximately 100 feet of Lafayette Creek is culverted beneath the Methodist Church parking lot. Replacing this culverted access with a bridge, and restoring the creek, could create physical as well as visual access to the creek, in addition to improving habitat value. Either off-site parking, improved parking management or an on-site parking structure would be desirable to mitigate the loss of parking. A parking structure set back into the hillside behind the existing parking could serve the downtown businesses in addition to the church. The hydrological impacts of removing the culvert would need to be carefully studied to ensure the existing potential for flooding is not worsened.

Plan View - Potential to restore natural creek by removing culvert under parking access

Creek at existing culvert

Example of bridge over creek

View map

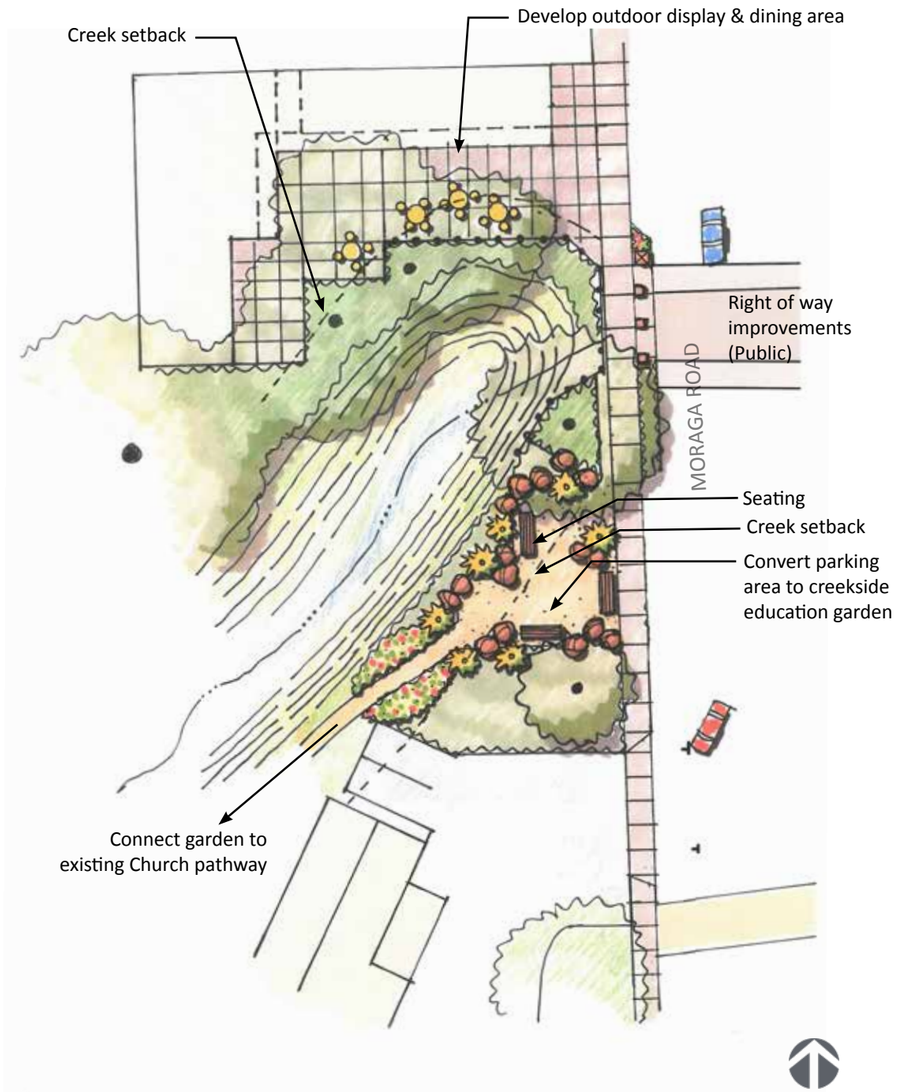
Existing culvert under parking and access drive compromises approximately 100 feet of Lafayette Creek

Replacing the culvert with a bridge would allow for restoration of the creek channel, improving habitat value and aesthetic value, but parking spaces would be lost

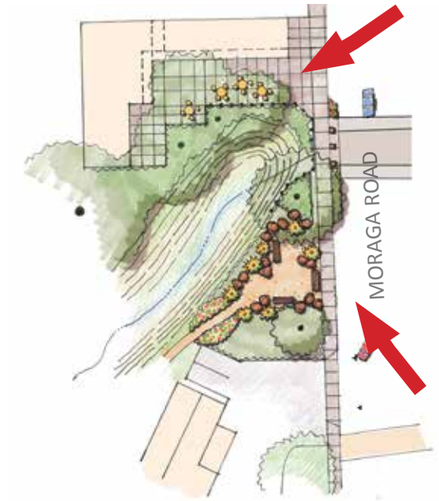
A creek overlook and bulb-out at Moraga Road is described in the previous chapter on Public Property Improvements. The natural creek conditions of the South Reach could be optimized to expand the public's interaction with the creek by orienting retail uses toward the creek through expanded outdoor seating or patio areas. (See photo simulations on the next page.)

A positive community impact could be made by converting the small parking lot off Moraga Road to a public outdoor space. The high visibility of this parking lot from Moraga Road, and its proximity to the Church and the Lafayette Elementary School, could be transformative for the community. At this site, the sidewalk could be widened, and a creek overlook could be created. Cleaning up the densely overgrown vegetation opposite Sugi's would create another public space area within a grove of Valley Oaks in an area highly visible from Moraga Road.

These public access areas could also be locations for rain gardens or other bioretention, along with interpretive signage. Traffic noise from Moraga Road may interfere with enjoyment of these street-level spaces, but if the creek channel were widened in this area and the creekside amenities placed below the level of the road, noise impacts could be reduced, and a wider floodplain could potentially reduce upstream flooding impacts.



Plan View - Creekside gathering and viewing areas are on private property



View Map

Current view north bank

Outdoor use space overlooking restored north creek bank

Current view south bank

Creekside education garden replaces private parking lot and complements creek overlook on the adjacent public right-of-way

DRAFT

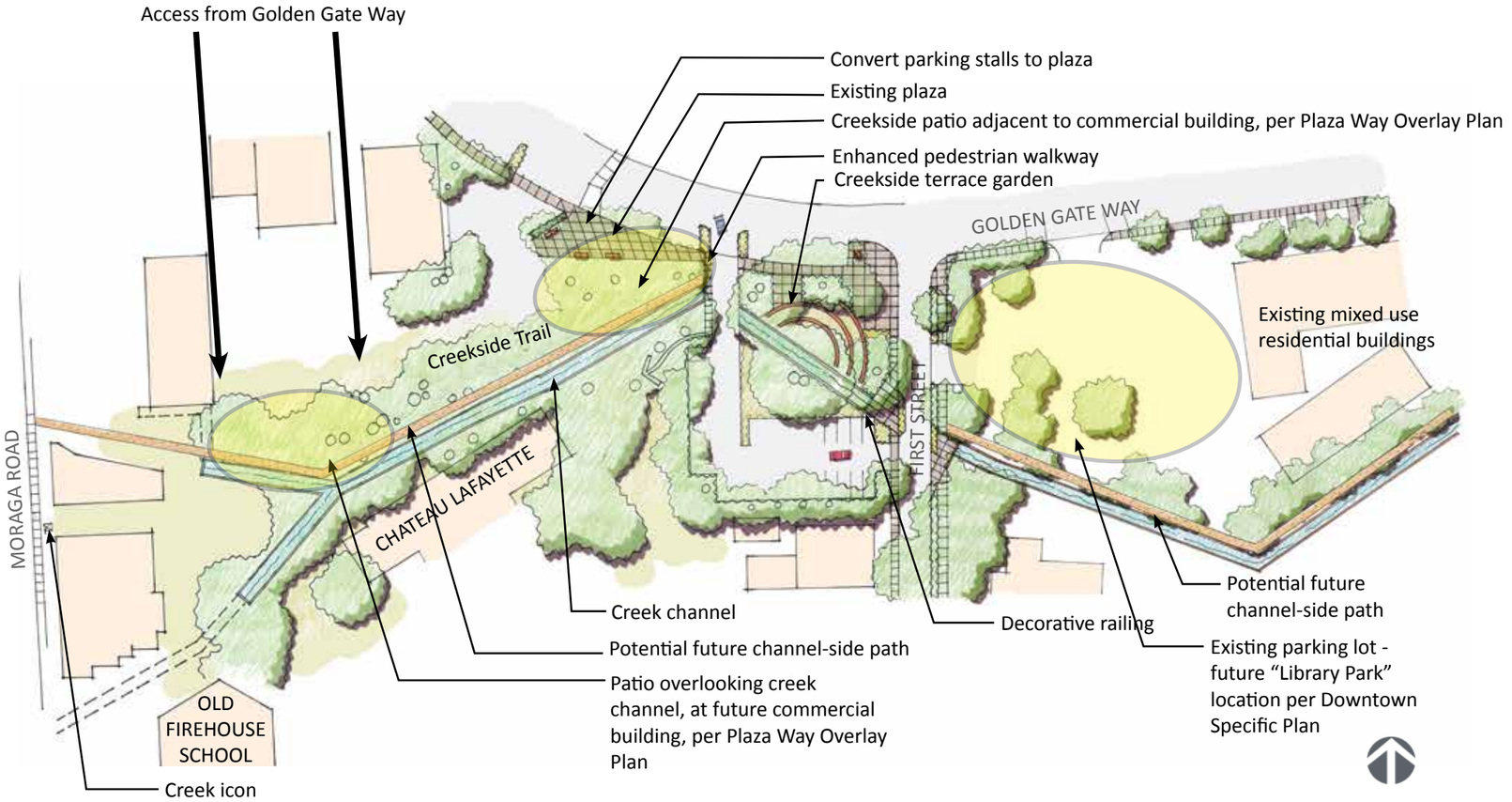
CHANNELIZED EAST REACH (EAST REACHES 1 AND 2):

Enhance visual and physical connections to creek from Golden Gate Way. Future park at First Street and Golden Gate Way. Top of bank access north of channel. Channel enhancements.

There are several opportunities to improve access and make visual connections to the creek in the channelized portion of Lafayette Creek. A trail connection between Moraga Road and Golden Gate Way would provide pedestrian access to this portion of the creek. Although the creek is channelized in this area, mature oaks and the remnant riparian vegetation at the top of bank continue to provide habitat and signify the presence of the creek. Creek icons or wayfinding elements should be incorporated along the sidewalks of Moraga Road and Golden Gate Way to direct pedestrians to the trail, and to visual access points. The Flood Control District would support a pedestrian path along the north side of their channel.

Several pocket park areas can be created between Moraga Road and First Street. Adjacent to the bridge access to the parking adjacent to Chateau Lafayette, a small terraced seating area could be created on the southwest corner of Golden Gate Way and First Street, which would provide additional outdoor passive use space for the seniors of Chateau Lafayette. A currently vacant area just west of the access bridge could also be improved to serve as passive open space. This pocket park would expand on the seating area east of the Park Theater, where a circular bench is located.

For the creekside parcels east of First Street, the top of bank trail could be extended on the north side of the channel to connect to additional outdoor use areas adjacent to the mixed use retail / residential buildings and potentially to East Reach 3. The existing outdoor use area at the end of the parking lot, where there is now a picnic table next to the creek, could be enhanced by buffering it from the parking lot. The existing pedestrian path along the backside of the buildings could be extended to connect with an unused outdoor space beyond the inner courtyard of the mixed use buildings. Connecting the existing picnic



Plan View

Examples of various treatments of channel surfaces and fences

Current view

View map

Looking southeast from Golden Gate Way at 1st Street

area to the unused outdoor space could create a short greenery-filled walking loop which could be used by business customers and residents.

The Downtown Specific Plan identifies an area at the southeast corner of Golden Gate Way and 1st Street for a future park ("Library Park"). As a passive park, this location offers possibilities for rest, relaxation and education about the creek. Decorative or thematic fencing along the top of the channel, replacing the chain link and barbed wire, would enhance the character of the creek at this location. A hydraulic study would be necessary to determine the impacts of altering the channel wall at this location to provide a more naturalized or terraced creek bank at the park site. (See section below on channel enhancements.)

The quality of water inflows into the creek along East Reach 1 could be improved by creating bioretention areas along the upper banks near the parking lot areas closest to the creek banks.

Channel Enhancements

California's flood control systems have gone through many different phases. Prior to World War II, earthen dam levees provided the majority of the flood control measures. In the 1950's through the 1970's, Federal grants were focused on concrete flood control structures. During that time, concrete channels, drop structures and concrete bank stabilization became popular as can be seen on sections of Lafayette and Happy Valley Creeks.

In East Reaches 1 and 2, the natural creek bottom and banks were replaced by a concrete channel designed to prevent erosion and stream meandering, and minimize the impact of flooding. Unfortunately, the concrete channel increases the speed of water in the channel during large storm events, does not provide any habitat, restricts the passage of fish, amphibians and invertebrates, and is unsightly.

The ideal remediation for the channel would be to remove the concrete channel and replace it with an engineered natural bed with supporting banks designed to prevent erosion. The costs of such a project would be high, and it is unlikely that there is sufficient horizontal space in these reaches to create the desired channel width.

In 2009, the Flood Control District adopted The 50-Year Plan – *From Channels to Creeks* (50-Year Plan) to convert its first generation infrastructure, such as the concrete flood control channel located in East Reach 1 and East Reach 2, to second generation facilities consisting of more natural creek conditions. The

remaining service life of these first generation facilities is 30 to 50 years, and the objective of the Flood Control District is to begin the planning process to replace this essential infrastructure. Implementation of The 50-Year Plan is contingent on support of the affected jurisdictions and funding.

The Flood Control District's 50-Year Plan supports the concept of replacing the channel with a more natural flood protection facility integrated into a redeveloped urban landscape. Such an enhancement plan for the East Reach could involve constructing a bypass pipe, an upstream detention basin, and/or increased upstream infiltration of storm runoff. Implementation would require an extremely long planning horizon.

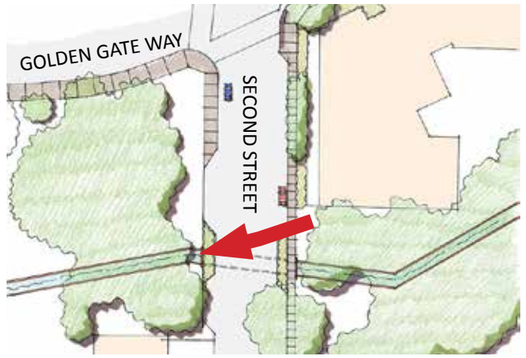
It could also be possible to remove the bed of the concrete channel and use tie-backs to support the concrete walls. This would allow for a natural bed and create some habitat value. Since water has not flowed along this bed, there could be concerns about whether the flows would raise the water table and potentially decrease the geotechnical stability of the underlying soil. In addition, there is a risk of undercutting of the walls, and the possibility that greater flooding could occur from decreasing the speed of the water as it flows through the area.

A more economical possibility would be to create an artificial bed that would simulate a natural bed. This could be accomplished by lining the bed with rocks or providing low rise barriers to the water. Though this would provide habitat for fish, amphibians and benthic organisms and create areas for plants to grow, it most likely would decrease flow velocity and decrease the life span of the underlying concrete. An evaluation would need to be made on the expected life span of such a project.

Any modification to the concrete channel would require a hydraulic study of the creek to determine how the change in the bottom of the channel would affect flow velocity and flooding, and cause other upstream and downstream impacts.

An improvement to this channelized reach that would not have hydraulic impacts would be replacement of the chain link and barbed wire fence on the channel top with a decorative fence.

Current view



View map

The channel enhancements are included with the private property improvements because it is located on an easement which the Flood Control District acquired from the property owners. This easement gives the Flood Control District the right to make improvements and undertake maintenance activities for flood control purposes. Installing decorative fencing and making enhancements to the channel walls and bed would require approval of the Flood Control District. Installing a path on the north side would require approval of the affected landowners. Construction of channel enhancements would also need to be coordinated among the property owners in phases so as to not compromise the security and operational integrity of the channel.

Creek icon and decorative fencing, looking east along concrete channel

DRAFT

CHAPTER 5: CREEK PROTECTION, PRESERVATION AND RESTORATION

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NATURAL RESOURCE PROTECTION

An overarching theme of this Plan is the protection and enhancement of the natural habitat values of the creek corridors through the Downtown area and celebration of these important resources as part of the fabric of Lafayette. An important first step in accomplishing this is understanding the limits of regulated habitat (see Regulatory Overview in Chapter 2), identifying and protecting sensitive resources, and coordinating with resource agencies as part of future development proposals and enhancement efforts. Mature native trees and remaining stands of intact native riparian vegetation are essential to maintaining existing habitat values of the creek corridors, providing important shade and protective cover, foraging substrate, and roosting and nesting habitat for local wildlife.

Where work within the creek corridor is necessary, restrictions on timing to avoid disturbance to nesting birds and minimize disruption to aquatic habitat are important considerations. In-channel work should typically be restricted to the dry season when stream flows and the potential for erosion and sedimentation are lowest. Tree removal and other vegetation treatments should preferably be performed outside of the bird nesting season, which typically extends from February through August, unless surveys have confirmed that no nesting activity is present within the affected reach of the creek channel.

Protection and enhancement of the creeks has several aspects, including general clean-up such as trash removal, habitat enhancement such as removal of invasive species and replanting with native riparian species, bank stabilization where erosion is impacting the channel, and improvement of water quality through low impact development techniques.

One of the greatest opportunities for protecting and enhancing the existing habitat values along creeks in the Planning Area is to control invasive plant species and provide for native revegetation, where feasible. The following provides information on the major target invasive species which currently compromise the existing habitat values of creeks in the Planning Area, and suitable species for use in native revegetation efforts.

GENERAL VEGETATION TREATMENTS, INVASIVE REMOVAL AND CONTROL, NATIVE REVEGETATION

One of the important methods of enhancing the existing habitat values along the creek corridors in the Planning Area is to control or ideally eradicate invasive plant species which currently severely compromise existing habitat values in many areas, and to restore native riparian vegetation where it has been lost or compromised. Of particular concern is the establishment and spread of invasive vines, like English ivy and Himalayan blackberry. English ivy forms solid ground cover and has climbed up trunks and is choking out mature tree canopy in some locations. Stands of Himalayan blackberry have smothered native shrub and groundcover species where dense thickets have become established. Although less problematic, non-native tree species, arundo, and other invasive species have also compromised many reaches of the creek corridors through the Planning Area.

Treatment of invasive plants would serve to control and ideally eliminate this non-native element from the creek corridors and would encourage the further establishment of native riparian woodland and scrub plant communities. Effective control of the highly invasive species typically requires an effective Integrated Pest Management (IPM) program. An IPM usually involves short-term intense mechanical and possibly chemical eradication efforts, followed by on-going monitoring and maintenance practices that select for native species and less invasive, naturalized species. Ideally, an intensive invasive species removal effort would be included as part of the initial treatment, followed by on-going monitoring and maintenance efforts. This may be the only effective way to control and suppress some of the more aggressive species along the creek corridors in the Planning Area.

Table 5-1 provides major steps in the initial treatment of targeted highly invasive species, disposal of seed, stem, stolon, and root materials, and necessary follow-up activities to ensure successful control and ideally eradication. Keeping the targeted invasive species from becoming re-established or once again dominating reaches of the creek corridors requires on-going concerted efforts. Successful implementation would typically require coordinated efforts by volunteers, routine treatment by City staff and property owners, and possibly occasional use of contractors or specialized non-profit organizations such as the California Conservation Corps. Limited chemical treatment (i.e. herbicide application) may be required to effectively control resprouting of these target species, although non-toxic removal through repeated mechanical methods is generally preferred. The IPM must be flexible in its implementation to address possible resprouting or re-establishment of the highly invasive species through successive annual treatment by mechanical removal and possibly herbicide application for a period of two to four years.

Trained professionals should be used to perform any and all herbicide applications. They should be required to have appropriate certification and licensing as a Pest Control Operator for use of non-restricted materials registered for use in Contra

Arundo in creek channel

Invasive vines climbing into overstory

Invasive vines covering creek banks

Costa County. Best Management Practices should be used during all herbicide applications, considering latest standards for products used for target species. Factors to be considered during herbicide application include wind and weather conditions, timing of initial and subsequent treatments, specific product and concentrations, and protection of aquatic habitat and native cover to be preserved or established.

Notice should be given for treated areas prior to herbicide application through use of temporary signage posted no less than 24 hours in advance of application, identifying product to be used, explaining health risks, and including a contact person and phone number to answer any questions. Signs should be posted along the perimeter of any treatment area as necessary to visibly delineate the boundaries. Herbicide application of Himalayan blackberry should not occur when this species is in fruit, unless all fruiting stems have been removed and there is no possibility of animals ingesting treated fruits.

The City has also adopted an Integrated Pest Management Policy by resolution that controls the use of fertilizers and pesticides on all parcels in the City. The policy includes reporting requirements on the type and amounts of pesticides used.

Techniques for the treatment of target species along the creek corridors in the Planning Area are listed in **Table 5-1** and summarized below:

• **Periwinkle and English Ivy**. Periwinkle and English ivy also possess extensive root systems, and ivy has spread up tree trunks and into the tree canopy in many locations and threatens to kill mature trees if not effectively treated. Routine girdling of vines from the trunks of trees and larger shrubs is an effective way of controlling ivy infestations to the ground surface, and a relatively simple and rewarding management practice for volunteers. Hand pulling of vegetative growth and roots, and tarping of infestations are non-toxic approaches to their removal, although foliar spraying prior to tarping may be necessary for effective control. Tarping should begin after the rainy season has ended, and continue until the next rainy season begins. Tarped areas require revegetation with native groundcover and understory species, once the target species have been effectively eliminated.

• **Himalayan blackberry**. The extensive roots of this plant make burning and root removal the most plausible methods for control. As burning is not an appropriate management technique for the relatively urban location of the Planning Area, efforts should focus on root and vegetative removal.

• **Arundo**. Arundo was introduced to the region to control erosion, but is now known to destabilize streambanks and cause significant degradation to streamside habitats. Techniques for removal of Arundo include tarping and hand removal.

• **Other Target Species**. A number of invasive tree species occur along the creek corridors in the Planning Area and are also a targeted for removal. These include: tree-of-heaven, acacias, and blue gum eucalyptus, among others.

Part of any effective invasive species removal effort must include revegetation with desirable native species to improve habitat conditions and help limit the likelihood that the invasive species become re-established. This can include a mixture of native tree, shrub and groundcover species, depending on site conditions, available light, and other factors. Native plantings can also be used to increase species diversity and complexity along intact reaches of creek corridors in the Planning Area.

Table 5-2 contains a list of appropriate native species that could be used in native revegetation efforts, together with typical planting methods and quantities. This list can be expanded and adjusted as necessary based on input from a qualified restoration specialist or landscape architect experienced in native revegetation. When revegetation with woody native shrub and tree species is not possible, areas disturbed by vegetation removal should at minimum be seeded with the appropriate seed mix (see **Table 5-2**) and treated to prevent erosion.

The following techniques may be utilized to revegetate riparian areas along the creek corridors in the Planning Area:

• **Native Willows and Cottonwoods**. These species are well adapted to channel environments, and can be installed as sprigs or dormant cuttings. Plant material should preferably be harvested as close to revegetation site as possible, and include a variety of parent plants so as to ensure genetic diversity. These plantings could also support bank stabilization efforts, in addition to habitat enhancement.

• **Large Seeded Trees**. Large seeded trees that are native to the Planning Area include: valley oak, live oak, buckeye, and bay. These trees can planted from seedlings contract-grown from seed collected in the Planning Area, or from locally available native nursery stock. Larger specimens can be planted when structure and immediate effect are desired.

• **Other Riparian Shrub and Groundcover Species**. A number of native shrubs and groundcovers are appropriate for planting in riparian habitats in the Planning Area to improve species diversity, complexity of the understory, and help prevent re-establishment of targeted invasive species. These include: California blackberry, California rose, mugwort, creeping wild rye, and snowberry, among others. Open areas along creek banks created as part of invasive tree and shrub removal can also be seeded with a grassland seed mix (indicated in **Table 5-2**), to establish a continuous groundcover and minimize the potential for erosion and sedimentation in the nearby creek. But plug plantings of creeping wild rye tend to be the most effective grass cover treatment where light levels are limited, as it spreads through stolons and does moderately well in somewhat shaded conditions typical of riparian corridors.

Plans that delineate areas where invasive species are present in the Planning Area are included in the Assessment Summary Report, in Appendix B.

Removal of invasive plants from creek banks and revegetation with native riparian plants is consistent with the Downtown Design Guidelines which include provisions that require new development to maintain and restore native riparian areas. Implementation of the Downtown Design Guidelines should refer to Table 4-2 for the plant species suitable for riparian areas.

The Downtown Design Guidelines also requires transition landscaping toward and along the creek corridor for a consistent native riparian plant palette. Where appropriate, mature non-native trees that contribute to the riparian canopy or other beneficial habitat values, and that are not invasive or likely to spread and replace native riparian vegetation should be preserved. Preserving non- native trees should be secondary to maintaining and improving conditions for native riparian trees along the creek corridors.

Parcel-specific revegetation projects will also require on-going maintenance to remove invasive plants that encroach from adjacent creek banks. In such cases, the City can require Landscape Maintenance Agreements to be recorded on parcels where special maintenance practices need to be followed in perpetuity.

Invasive Species	IPI Rating	Control and Management
Tree-of-heaven (Ailanthus altissima)	Moderate	Treatment – Cut in spring (before May) when cambium is active and to prevent seed production. Pull seedlings, saplings and root suckers annually when soil is moist until plants are exhausted. May consider treating trunks/shoots with herbicide glyphosate, with repeat treatment of any resprouts, if non-herbicide treatment is not successful. Disposal – All seeds, pulled seedlings, and root material should be collected, bagged and disposed of properly. Follow-Up – Cut any resprouts every spring until trees are eliminated, with possible use of glyphosate if resprouting is on-going problem. Pull all seedlings and root suckers annually when soil is moist until seed source exhausted.
Blue gum (Eucalyptus globulus)	Moderate	Treatment – Cut in spring (before May) when cambium is active and to prevent seed production. Pull seedlings, saplings and root suckers annually when soil is moist until plants are exhausted. May consider treating trunks/shoots with herbicide glyphosate, with repeat treatment of any resprouts, if non-herbicide treatment is not successful. Disposal – No significant problems with trunk, root, or seed material. Follow-Up – Cut any resprouts every spring until trees are eliminated, with possible use of glyphosate if resprouting is on-going problem. Pull all seedlings and root suckers annually when soil is moist until seed source exhausted..
Acacia species (Acacia melanoxylon) (Acacia decurrens)	Limited	Treatment – Cut in spring (before May) when cambium is active and to prevent seed production. Pull seedlings, saplings and root suckers annually when soil is moist until plants are exhausted. May consider treating trunks/shoots with herbicide glyphosate, with repeat treatment of any resprouts, if non-herbicide treatment is not successful. Disposal – All seeds, pulled seedlings, and root material should be collected, bagged and disposed of properly off-site. Follow-Up – Cut any resprouts every spring until trees are eliminated, with possible use of glyphosate if resprouting is on-going problem. Pull all seedlings and root suckers annually when soil is moist until seed source exhausted.
Elm (Ulmus sp.)	Evaluated but not listed	Treatment – Cut in spring (before May) when cambium is active and to prevent seed production. Pull seedlings, saplings and root suckers annually when soil is moist until plants are exhausted. May consider treating trunks/shoots with herbicide glyphosate, with repeat treatment of any resprouts, if non-herbicide treatment is not successful. Disposal – All seeds, pulled seedlings, and root material should be collected, bagged and disposed of properly. Follow-Up – Cut any resprouts every spring until trees are eliminated, with possible use of glyphosate if resprouting is on-going problem. Pull all seedlings and root suckers annually when soil is moist until seed source exhausted.
Periwinkle (Vinca major)	Moderate	Treatment – Pull and remove all stem material, accessible stolons and deeper roots from ground surfaces. Consider applying broadleaf-specific herbicide by foliar spray to supplement hand removal. Restrict foliar spray within 10 feet of surface water drainage to appropriate aquatic-approved herbicide. Disposal – All seeds, pulled seedlings, stolons, and root material should be collected, bagged and disposed of properly. Follow-Up – Hand pull all seedlings, stem material, accessible stolons and deeper roots. Spot treat with broadleaf specific herbicide by foliar spray as necessary in spring and late summer to supplement hand removal, but carefully control use and application to prevent loss of native grassland, riparian, and upland enhancement plantings.
Ivy species (Delairea odorata) (Hedera helix)	High	Treatment – Pull and remove all stem material, accessible stolons and deeper roots from trees, shrubs, and ground surfaces. Girdle vines accessing tree trunks and canopies for a distance of 12 inches where no additional treatment is proposed, to minimize further damage to existing trees and shrubs. Consider applying broadleaf-specific herbicide by foliar spray to supplement hand removal. Restrict foliar spray within 10 feet of surface water drainage to appropriate aquatic-approved herbicide. Disposal – All seeds, pulled seedlings, stolons, and root material should be collected, bagged and disposed of properly. Follow-Up – Hand pull all seedlings, stem material, accessible stolons and deeper roots. Spot treat with broadleaf specific herbicide by foliar spray as necessary in spring and late summer to supplement hand removal, but carefully control use and application to prevent loss of native grassland, riparian, and upland enhancement plantings.
Himalayan blackberry (Rubus discolor)	High	Treatment – Pull and remove all stem material and accessible root balls from ground surfaces. Consider applying broadleaf-specific herbicide by foliar spray to supplement hand removal. Restrict foliar spray within 10 feet of surface water drainage to appropriate aquatic-approved herbicide. Disposal – All seeds, pulled seedlings, and root material should be collected, bagged and disposed of properly. Follow-Up – Hand pull all seedlings, stem material, accessible root balls. Spot treat with broadleaf specific herbicide by foliar spray as necessary in spring and late summer to supplement hand removal, but carefully control use and application to prevent loss of native grassland, riparian, and upland enhancement plantings.

IPI (Invasinve Plant Inventory) Ratings Definitions (California Invasive Plant Council, 2006, California Invasive Plant Inventory, "The Weed List".):

High: These species have severe ecological impacts on ecosystems, plant and animal communities, and vegetational structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. These species are usually widely distributed ecologically, both among and within ecosystems.

Moderate: These species have substantial and apparent - but generally not severe - ecological impacts on ecosystems, plant and animal communities, and vegetational structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

Limited: These species are invasive but either their ecological impacts are minor on a statewide level or information on them is insufficient to justify a higher rating, although they may cause significant problems in specific regions or habitats. Their reproductive biology and other attributes result in low to moderate rates of invasion. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

Evaluated But Not Listed: In general, this designation is for species for which information is currently inadequate to respond with certainty to the minimum number of criteria question, or for which the sum effects of ecological impacts, invasiveness, and ecological amplitude and distribution fall below the threshold for ranking. Many such species are widespread but are not known to have substantial ecological impacts (though such evidence may appear in the future).

Table 5-1: Target Invasive Plant Species Treatment Details

Species	Rate/Size	Treatment Details
Groundcover Seed Mix:		
Creeping wild rye (Leymus triticoides)	15 lbs per acre	Seed shall be applied over all graded surfaces (except in areas of new paving, new trails, and other development areas) before onset of fall rains, prior to October 15. Seed source shall be as local as possible, supplied on a basis of Pure Live Seed (PLS), and not contain an excess of one percent (1%) of weed seed. Seed shall preferably be applied by hydroseeding particularly for larger areas and slopes, rather than by hand broadcast. Hydroseed may include seed, dye, fertilizer, lime, mulch, and synthetic binder.
California brome (Bromus carinatus)	15 lbs per acre	
Meadow barley (Hordeum brachyantherum)	10 lbs per acre	
Groundcover Plug Plantings:		
Creeping wild rye (Leymus triticoides)	Install plugs on 1-foot centers	Install plugs during start of wet period between November 15 and January 15 to allow root development during winter rains. Creeping wild rye plugs provide a reliable groundcover in open and partially shaded creek banks
Riparian Zone Plantings:		
California buckeye (Aesculus californica)	Spaced no closer than 10-foot centers, from tree pot, one gallon or 15 gallon plants.	Install during start of wet period between November 15 and January 15. Stake each plant to allow for on-going monitoring. Provide appropriate browse protection as required with staked 4'-high poultry mesh fencing where monitoring indicates a loss of plant material due to deer and rodents. Provide summer irrigation for a minimum of two to four years until established.
Box elder (Acer negundo var. californicum)	Spaced no closer than 10-foot centers, from tree pot, one gallon or 15 gallon plants.	
Valley oak (Quercus lobata)	Space no closer than 20-foot centers, from tree pot, one gallon, or 15 gallon plants.	
Live oak (Quercus agrifolia)	Space no closer than 20-foot centers, from tree pots, one gallon, or 15 gallon plants.	
California rose (Rosa californica)	Grouped mosaics from dee pots or one gallon plants on 5-foot centers.	
Snowberry (Symphoricarpos albus)	Grouped mosaics, from dee pots or one gallon plants on 5-foot centers.	
Mugwort (Artemiisia californica)	Grouped mosaics, from dee pots or one gallon plants within 15 feet of channel bottom on 5-foot centers.	
Spreading rush (Juncus patens)	From dee pot or one gallon plants, spaced randomly along channel bank and open areas on 5-foot centers.	
Willow (Salix lasiolepis and S. laevigata)	Cuttings installed from branches collected on-site.	Cuttings from one-year-old branches collected and installed during wet period, preferably December 15 to January 15. Cuttings shall be a minimum length of 3 feet, maximum length of 5 feet, minimum cut-end basal diameter of ¾ inch, maximum diameter of 1.5 inches, and continuous bark and stems that are not split. A minimum of three cuttings will be planted in each planting hole.

Table 5-2: Suitable Native Plant Species for Revegetation and Enhancement

WATER QUALITY - LOW IMPACT DEVELOPMENT (LID) TECHNIQUES

One of the primary means of maintaining creek health is by improving the quality of water entering the creek and reducing the peak flow during storm events. Unfortunately, most cities directly convey water from the street into concrete storm drain systems, which deposit it directly into creeks. This does not provide any filtering of the street runoff while it also rapidly moves the water to the creek. Thus during rain events, often large quantities of water containing oil, grease and sediment enter the streams and creeks. Compared to water running through vegetated areas, the water also arrives quickly into the stream or creek causing increased peak flows and flow volumes. The increased flows increase erosion and the risk of flooding, while possibly putting increased stress on the flora and fauna of the creek.

The solution to the problem is to increase use of low impact development (LID) techniques, so that water is both detained and cleaned prior to entering the storm drain system. LID techniques are intended to reduce runoff and mimic a site's predevelopment hydrology by minimizing disturbed areas and impervious cover and then infiltrating, storing, detaining, evapotranspiring, and/or biotreating stormwater runoff close to its source. LID practices include measures such as rain barrels and cisterns, green roofs, permeable pavement, preserving undeveloped open space, and biotreatment through rain gardens, bioretention units, bioswales, and planter/tree boxes. The RWQCB adopted regulations to enforce LID which applies primarily to new development and re-development of disturbed areas of 10,000 square feet or more and is enforced through Lafayette's Stormwater Management and Discharge ordinance that is described in Chapter 2. (*Municipal Regional Stormwater Permit Order No. R2-2015-0049, Requirement C.3.c*, November 19, 2015, California Regional Water Quality Control Board, San Francisco Bay Region.) Many cities also encourage existing repair work, especially road work, and residential properties to incorporate LID techniques.

In addition, the RWQCB requires site design measures for small projects and detached single-family dwelling (i.e. development projects which create or replace <2,500 ft2 to <10,000 ft2 of impervious surface). Each project must install one or more of the following site design measures:

- Direct roof runoff into cisterns or rain barrels for reuse.
- Direct roof runoff onto vegetated areas.
- Direct runoff from sidewalks, walkways, and/or patios onto vegetated areas.
- Direct runoff from driveways and /or uncovered parking lots onto vegetated areas.
- Construct sidewalk, walkways, and or patios of permeable surfaces.
- Construct bike lanes, driveways, and or uncovered parking lots with permeable surfaces.

Following are recommendations for LID strategies that would help improve the creek health by reducing the rate of runoff reaching the creek and improving the quality of the water that does. The techniques discussed summarize the most appropriate LID strategies for development near the downtown creeks, and where stormwater would otherwise enter storm drains that discharge into Lafayette's creeks. These techniques are taken from the Contra Costa storm water post-construction guidebook, which outlines in greater detail the strategies for LID, their design criteria and sizing strategies (Contra Costa Clean Water Program, 2012).

PERVIOUS PAVEMENT

Since large amounts of water that enter the storm drain system originate from driveways, roads and parking lots, one of the easiest ways to reduce that quantity is to install pervious pavement. Pervious pavement allows water to infiltrate through the pavement and into the underlying base of the pavement, typically sand or gravel. The water then will be stored and slowly infiltrate into the native soil. Typically, the storage amounts are equivalent to about 40% of the base depth, thus a 6-inch base could store 2.4 inches of water per unit area. In addition, often the pavement itself provides additional storage. This allows for large areas of currently impervious pavement to become a central part of the water treatment and flood control of a city.

Pervious pavement works best in flat areas with slopes less than 2%, in soils that are have higher hydraulic conductivity, and areas with low traffic, slower speeds, and lighter weight vehicles (such as parking stalls). It is more expensive than the equivalent impervious pavement and requires some maintenance.

Pervious paviement is also very well suited for use in pedestrian areas such as trails, overlook areas and sidewalks. Where these pedestrian areas are located adjacent to creeks, the additional absorption of stormwater reduces runoff into the creeks and provides soil moisture for riparian vegetation. Lafayette has used pervious paving as sidewalk material along Mt. Diablo Blvd., adjacent to Lafayette Creek west of Village Center Road.

The most common types are pervious concrete, porous asphalt, crushed gravel, and porous or open pavers.

Pervious pavers in parking lot

Pervious pathway signage on Mt. Diablo Blvd.

BIORETENTION

Bioretention is the process in which contaminants and sediment are removed from stormwater runoff. This process is designed to mimic water retention and cleaning of natural systems. Bioretention areas are optimized to provide a good infiltration rate while still providing a good reduction in contaminants from the water. Water flows from nearby drainage areas into the bioretention area. It passes through an initial mulch layer, and then slowly infiltrates through a specially formulated bioretention soil which helps clean the soil. The bioretention soil layer also holds the water, helping to reduce the volumetric rate at which water enters the storm drain system.

If the native soil infiltration rates are high enough, it is possible to allow the water to infiltrate directly into underlying ground. If the native soil does not have high infiltration rates (such as the predominantly clayey soils in Lafayette) or if there are concerns about water infiltrating into the native soils, then the water passes through the bioretention soil into an underlying gravel bed (see Figure 5-1), which transports water to an outflow pipe into the storm drain system. Often, if the bioretention area is near a roadway or foundation, the sides are lined with an impermeable membrane or concrete. The latter design is called a flow-through planter.

Bioretention is appropriate between runoff sources (e.g. paved areas, roadways, parking lots) and the creeks. Bioretention can provide the same water quality and runoff volume benefits even at a distance from the creeks, if the stormwater would otherwise flow directly into a storm drain that discharges into the creeks. Whenever improvements to roadways and parking lots are undertaken, bioretention areas should be considered. If done in conjunction with sidewalks, often there is little loss of area.

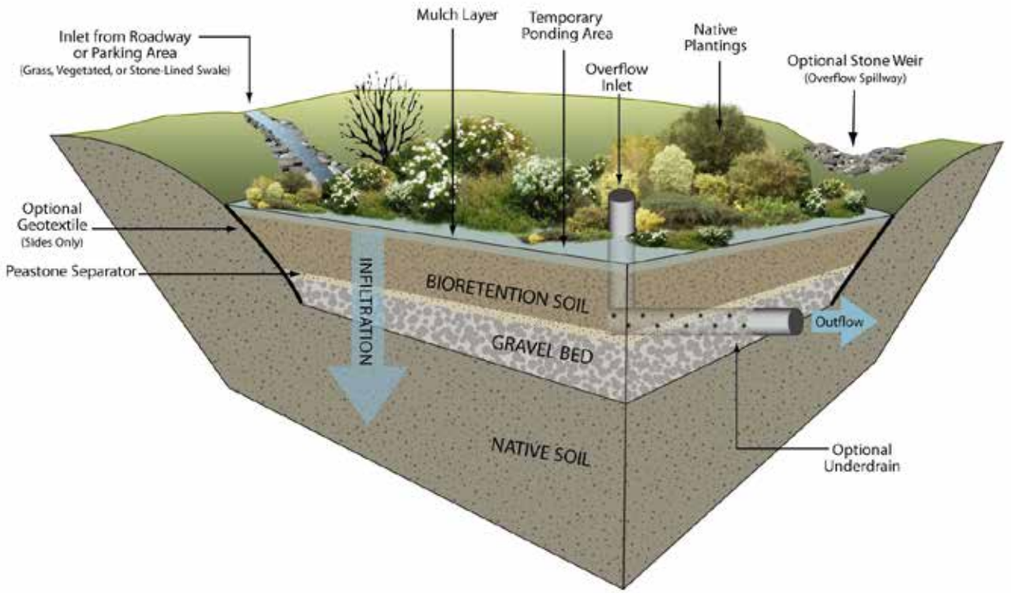

Figure 5-1: Bioretention area

Rain garden in parking lot

Rain garden bulb-out in parking lane

Rain garden in sidewalk area

CREEK BANK STABILIZATION AND MAINTENANCE

INTRODUCTION

Lafayette Creek and Happy Valley Creek both contain relatively stable creek beds. However, encroaching urbanization has reduced the historic overbank floodplain areas, which have been replaced by buildings, roadways and other improvements. Alterations to creek flow paths or banks risk damaging these structures. Within the study area, one location in the West Reach showed evidence of a potential bank stability issue (large-scale erosion), while the other areas had evidence of relatively minor bank stability issues (typically invasive species, concrete debris, and sack walls). Bank erosion, even if only minor, could over time alter the creek flows and banks enough to risk destabilizing the slopes,; thus it is important to regularly evaluate and maintain creek banks in urban areas.

This section provides recommendations for evaluating and maintaining creek banks and includes techniques focused on smaller restoration projects and interventions. While the techniques address bank stability, where possible, they will also improve water quality, native riparian vegetation and wildlife quantities, and aesthetics. The techniques are also cost effective and likely to meet regulatory guidelines.

Suggestions for more substantive bank modification in specific locations are discussed in the previous chapters on potential improvements, to address debris and concrete. Suggestions on how to approach regulatory agencies about the appropriate permitting are discussed in the Implementation Chapter.

Plans that indicate areas of concern for bank erosion are contained in the Assessment Summary Report, in Appendix B.

EVALUATION

Before embarking on creek bank maintenance or stabilization, it is important to first evaluate the scope and impacts of the project. In general, most regulatory agencies would prefer that the area within the creek banks, especially within the normal flow, not be disturbed. The exceptions to this are bank failure issues, erosion detrimental to water quality, or creek restoration to its historic form. Even if the project should meet these criteria, permitting can still be challenging, so in general it is advisable to minimize disturbance within the creek bank area. The following recommendations for Lafayette and Happy Valley Creeks detail how to address issues of erosion and invasive plants while limiting the disturbance within the bank area.

EROSION

Lafayette and Happy Valley Creeks' bank stability is improved due to the presence of armoring in large areas within the creeks in the form of concrete and steel culverts, concrete debris and sack walls, and wooden retaining walls. The armoring, though, increases the creek velocity in the channels, is usually unsightly, and reduces the area for wildlife and plants.

Many portions of the study area creek banks are not armored against erosion, or the armoring is not properly protecting the banks. Often minor erosion occurs from water concentrating at the top of bank and flows being improperly concentrated down the bank.

Additionally, large storm events can down trees or rip up brush that can significantly affect the levels of erosion in the creeks, so monitoring of the creeks during these times and taking prompt action can potentially reduce the adverse effects of these changes.

Within the study area, the most common erosion activity consists of undercut banks and slope erosion.

Undercutting occurs when a higher part of the bank has slope protection while a lower part does not, often below the waterline. Soil will erode unevenly, with more soil eroding from the lower part of the slope. If left unaddressed, this can reduce the slope stability.

Slope erosion occurs in areas where the bank soil is unprotected, usually on steeper slopes, and erodes due to forces such as wind, water, foot traffic, and/or gravity, causing rills or sloughing. Banks composed of larger rocks resist this erosion, as do banks with deep-rooted vegetation. Such resistance is not the case for areas under a canopy of ivy, which are also at risk of bank erosion due to the ivy's shallow root system and heavy above-ground structure. Eventually, this type of erosion slowly cuts back and flattens the slope, causing loss of area beyond the top of bank, and potentially threatening the foundations of structures that are not sufficiently set back from the top of bank.

Undercutting of bank

Bank erosion

While evaluating an area where undercutting or bank erosion has occurred, it is important to try to identify sources of water that might be contributing to the erosion. Often slope erosion is exacerbated by water concentrating above the slope and then being channelized down the bank.

INVASIVE PLANTS

Not all invasive plants are necessarily damaging to creek banks, but in the case of Lafayette and Happy Valley Creeks, invasive English ivy has destroyed much of the native species on many of the banks and is one of the most easily remedied issues affecting bank stability. Only the main trunk of the English ivy develops a deep root. The vines themselves create only superficial roots. On creek banks, they kill deep-rooted native species, and the vines subsequently drape over the banks, providing only superficial erosion control. During heavy storms with substantial streamflow, the velocity of the water quickly lifts the ivy, effectively eliminating erosion control on the banks of the creek. Ivy often climbs into the overstory canopy, killing trees and brush, and further damaging the creek banks.

MAINTENANCE

The primary goal of maintenance is to reduce erosion while promoting water quality and supporting native wildlife and plants. Maintenance recommendations for Lafayette and Happy Valley Creeks below focus on issues that were identified during the assessment process, but they should be regularly evaluated and expanded or reduced to reflect changing conditions that impact the creeks. The two current issues that will require regular monitoring and maintenance along the downtown creeks are erosion and invasive plants.

• **Erosion**. Areas with bank erosion should be assessed to identify the contributing factors to the erosion. Most commonly the erosion will either be from channelized water or foot traffic. If it is from foot traffic, the area should be cordoned off, signs placed to encourage people to not use the area, or other measures as appropriate to attempt to discourage using that path. If it is from concentrated flow of

water, the most effective control is to divert the oncoming water prior to reaching the eroded area. The general solution is to divert the water into a vegetated or protected area that can withstand the flow without eroding. The eroded area should be replanted with vegetation from the palette of native riparian species as described in *Table 4-2* of this chapter and protected with temporary measures as described below.

• **Invasive plants**. The removal of English ivy has been described in the previous section and in the section on *General Vegetation Treatments, Invasive Removal and Control, Native Revegetation*. After the ivy has been removed, any exposed soil will need to be stabilized using the methods described below.

RECOMMENDATIONS

Maintenance goals are to cover any exposed soil to ensure that bank erosion is minimized and the bank is stabilized with native riparian vegetation as quickly as possible. This typically involves a temporary erosion control measure that reduces the erosion in the short term and helps protect newly planted native riparian plants while they become established.

• **Temporary measures**. Whatever temporary measures are put in place, it is important to protect as much of the existing native riparian vegetation as possible. As there are many temporary erosion control measures currently available, and new ones are constantly being developed, this is not an exhaustive list. In general, the best temporary erosion control measures are ones that rely on natural materials, are biodegradable, and are safe for wildlife. It is also important that the erosion control measures are properly installed, otherwise they may cause more erosion than they prevent.

Biodegradable geotextile mats are one of the most common erosion control materials for slopes and are very effective at both reducing erosion and encouraging plant growth. Hydraulic mulch with seeds (hydroseeding) is also effective on gentler slopes and, with a native seed mix, can greatly increase the speed at which plants establish within the area. There are also a variety of brush mats, branch placements and other natural methods that can provide temporary erosion control.

Dikes and swales can also help reduce the overall velocity of water flowing toward the creek and help reduce erosion.

• **Long-Term Erosion Control Measures.** Based on the criteria of controlling erosion while improving water quality and wildlife habitat, the preferred treatment for banks is revegetation with native species with deep root structures. Generally, trees will provide the deepest roots and the best defense against erosion and the most bank stability, followed by brush and then native grasses and other understory plants. A healthy creek will contain a good diversity of each type of plant and in varying quantities. More information on the types of native riparian vegetation appropriate for the area has been provided in the section on *General Vegetation Treatments, Invasive Removal and Control, Native Revegetation*.

There are many different planting strategies for the types of plants that are desired on the bank, depending on channel characteristics, water elevations and bank steepness. It is best to consult a habitat restoration specialist when deciding on how to restore a bank for maintenance. In general, there are two basic treatment methods, live plantings and bioengineering.

Live plantings treatment consists of choosing native plants with a good diversity of sizes, and replanting the slope. The choice and types are greatly dependent on the bank situation, and the best approach would be to consult a restoration biologist. Techniques include brush matting (the use of dead or live cuttings from riparian vegetation stacked and secured against the creek banks to check erosion and revegetate banks), wattles (bundles of cuttings from riparian plants used to revegetate banks), plant cuttings (sticks cut from riparian shrub and tree branches in their dormant state such as willows and alder, which are buried about halfway in the ground and take root, and brush layering (the use of live branches or cuttings which are inserted into the creek banks perpendicular to the slope so that the rooting occurs back into the slope).

Bioengineering treatments, the use of plants for bank protection and erosions control, are techniques in which the temporary and long-term treatments are more integral to each other and are designed as one treatment, often to deal with more difficult erosion control issues. This can involve vegetated geogrids, brush mattresses, tree revetments, or any of a variety of other bioengineering techniques. For further information, please consult *Ground Bioengineering Techniques: For Slope Protection and Erosion Control* by H. M. Schiechtl and R. Stern.

MODIFICATION

The maintenance recommendations work well to deal with smaller erosion control issues and general improvements and maintenance to the creeks. Both Lafayette and Happy Valley Creeks have locations with large amounts of concrete debris or concrete sack walls. Many of these locations can be addressed by using the same treatments as detailed in the maintenance recommendations. Should these not work in addressing the erosion, or if the removal of concrete substantially changes the characteristics of the creek, then more direct modifications to the creek may be required. In these cases, it is best to work with a professional experienced with creek restoration and permitting to determine the best approach.

In general, whenever doing larger bank modifications, it is important to attempt to develop a plan that minimizes bank disturbances while restoring the creek to as close to a native condition as possible. To this end, reducing bank steepness and bioengineering will probably be preferred by regulatory agencies. Any hard armoring, such as riprap, is less likely to be approved; though if used in combination with bioengineering, the likelihood of approval by the reviewing agencies may increase.

Biodegradable geotextile erosion control

Biodegradable coir roll erosion control

Brush layering for erosion control

CREEK SETBACKS

The Creek Setback ordinance regulates construction and improvements occurring along the creek corridors. Its provisions are summarized in Chapter 6. The ordinance is focused on prevention of flood damage and protection of property. It is the intent of this Downtown Creeks Plan to maintain creek bank stability, and to protect and restore the native ecosystems to the extent possible, while allowing increased visual and physical access to the creeks. With these goals in mind, it is recommended that the setback ordinance be revised to strengthen resource protection values and public access. The application of the setback ordinance should also be strengthened by clarifying that only permitted, engineered creek improvements would create exceptions as "improved" creek.

Lafayette's creek setback ordinance should:

- Clarify that the purpose of the ordinance includes improving riparian function, and supporting public access in compliance with the Downtown Creeks Plan. Revise the ordinance to strengthen and make more enforceable requirements that relate to the natural environment along creeks and riparian function.
- Allow for exceptions for projects that are done to comply with Downtown Creeks Plan.
- Specify that in the setback areas included in the Downtown Creeks Plan, public access pathways and creek overlook areas, including plazas or decks, are encouraged. Construction of these improvements should not:

  a) create, exacerbate, or prevent the abatement of erosion and bank de-stabilization problems,
  b) increase stormwater runoff into the creek;
  c) degrade water quality from increased sedimentation and particulates from disturbed soils; pollution from motor oil; or from the generally high level of toxics and trash during the construction process; or
  d) eliminate or degrade a significant in-stream or riparian corridor habitat.
- Require that landscaping within setback areas consist of native riparian vegetation.
- Consider exceptions to the setback ordinance where creek-related uses are proposed.
- Encourage bioengineering techniques within setback areas to stabilize creek banks and reduce erosion.
- Include definition of "improved" creek, to clarify that only permitted, engineered improvements (and not concrete debris or other substandard stabilization methods) would be considered "improved" for purposes of the ordinance.

Riparian vegetation required and pervious pathways encouraged within setback zone

Creek overlooks encouraged, subject to determinations regarding bank stability, erosion, and water quality

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CHAPTER 6: MATERIALS AND FURNISHINGS

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INTRODUCTION

Awareness of the creeks can be enhanced by providing a unified family of material treatments. Materials and site furnishings become identified with the downtown creeks, bringing viewers' attention to the presence of the creeks. Uniform creek icons, consistent paving, fencing, use of rain gardens at creek crossings, and consistent paving treatments of creekside pathways can increase the sense of the creeks as an interconnected system. The icons and interpretive signage can create an identifiable image that connects people to the creeks.

As Lafayette's downtown is historic, fine grained and eclectic, variations in furnishings are also appropriate. The Downtown Design Guidelines specify that site furnishings throughout the downtown be functional and artistic. In the Shield Block, natural materials are emphasized, which would enhance the experience of a restored and naturalized creekside setting. The character of simple, historic furnishings that are specified in the Plaza Way district can be carried into the imagery of channel-top railings in that area.

This chapter is not intended to provide a final design of materials, but to show a range of examples that could be used to heighten awareness of the creeks and provide visual continuity. For elements that will be consistent throughout the Plan Area, such as the creek icon, public input should be sought, whether through a competetive process, or through public design review. Elements that may vary by location, such as benches or art elements, should be approved on a case by case basis as projects are proposed, with the relationship to the downtown creek corridor setting as a major criterion.

FENCE / RAILING TREATMENTS

PERVIOUS PAVING

Pervious concrete sidewalk along Mt. Diablo Blvd.

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CREEK ICONS / IDENTITY MARKERS

INTERPRETIVE SIGNAGE

Interpretive signage along Mt. Diablo Blvd.

LIGHTING

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CHAPTER 7: COMMUNITY OUTREACH

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COMMUNITY ENGAGEMENT PLAN

A key part of the Downtown Creeks Plan is outreach to and engagement with the Lafayette community. An extensive outreach program was developed at the outset of the planning effort, including community meetings, outreach and information at community events, meeting with stakeholders (such as property owners in the project area), and distributing project information through print and on-line media, community groups, email lists and a dedicated page on the City's website. Additionally, members of the Creeks Committee made presentations to various community and environmental organizations, informing them about the project and encouraging attendance at the Community Meetings. The Community Engagement Plan is contained in Appendix A, and meetings and presentations that occurred are listed in Table 7-1.

The goals of the Community Engagement Plan were to:

- Increase community awareness of the planning project;
- Offer a range of communication and engagement tools to facilitate input;
- Obtain community buy-in and consensus to support the plan;
- Build upon and respect previous outreach efforts to date (Downtown Specific Plan, Downtown Design Guidelines, etc.);
- Build partnerships for implementation and stewardship of improvements; and
- Partner with the Lafayette Creeks Committee to play an active role in community engagement, as they advise the City Council on creek issues.

Stakeholder meetings, with both owners of the lands that the creeks run through, and with regulatory agencies such as the Regional Water Quality Control Board and California Department of Fish and Wildlife, have been of great importance. Since the majority of the creek corridors that are the subject of this plan are privately owned, the support and engagement of the property owners is essential to implementing improvements within those corridors.

COMMUNITY MEETINGS AND PRESENTATIONS

Event / Group	*Date*
Stakeholder Meeting	*September 10, 2015*
Booth at Art & Wine Festival	*September 19, 2015*
Stakeholder Meeting	*October 1, 2015*
Community Workshop #1	*October 6, 2015*
Meeting with Regulatory Agencies	*November 10,2015*
Stakeholder Meeting	*January 28, 2016*
Sustainable Lafayette	*February 2, 2016*
Community Workshop #2	*February 2, 2016*
Walnut Creek Watershed Forum	*February 4, 2016*
Stakeholder Meeting	*February 16, 2016*
Stakeholder Meeting	*March 4, 2016*
Stakeholder Meeting	*April 21, 2016*
Booth at Earth Day Festival and Creek Tours	*April 24, 2016*

Table 7-1: Community Meetings and Presentations

COMMUNITY MEETINGS

Community Meeting #1: October 6, 2015
Veterans Memorial Center

Purpose of meeting: To solicit community input on the opportunities and constraints associated with the creek corridors identified in the Assessment Summary Report.

Following a presentation by Creeks Committee Chair Will Elder, and consultant David Gates, questions and comments were taken. Attendees then circulated to various stations around the room to provide their input regarding the assessments, opportunities and constraints pertaining to each reach of the creeks.

GENERAL COMMENTS

- Need to include property owners in the discussion as they own a majority of relevant property.

RESPONSE: Property owners have been invited to the workshop as well as two earlier meetings specifically for property owners. Efforts to reach out to property owners will continue throughout the process.

- Very difficult for one property owner to do any improvements or even maintain the creek due to regulatory agency processes.

RESPONSE: The Downtown Creek Plan effort includes working with regulatory agencies to clarify processes and criteria. Hopefully it will provide a forum for multiple property owners to work together and with the City to address regulatory agency concerns. A representative from Contra Costa County Flood Control District is attending the meeting to answer questions and hear from the community.

- Maintenance of the creek is a high priority - need to remove exotic vegetation, open views into creek.

Community Meeting #1

STATION COMMENTS:

1. West Reach: This portion of the creek is under public control. There is a need to address bank stabilization issues in near future.

- Provide access for families to play in creek water.
- Demonstrate successful creek restoration and public access at this community entry.
- Target specific native species for restoration that provide habitat value.
- Opportunity for art.
- Balance creek access with moving people along this busy bike/pedestrian route.

2. North Reach: This portion of creek is under private ownership and improvements will be linked with parcel improvements. There is a strong need to remove exotic vegetation to protect bank stability.

- Consider daylighting culvert portion.
- Provide access to creek for families to play in water.
- Improve creek channel and provide walking path along top of bank.
- Coordinate with Trails Master Plan
- Add "natural" mural on concrete walls
- Town Green here per Downtown Specific Plan

3. South Reach: This portion of the creek is under private ownership and improvements will be linked

North Reach comments

with parcel improvements. There is a strong need to remove exotic vegetation to protect bank stability.

- Can creek be daylighted? Replace culvert with bridge. Could reduce upstream flooding as the culvert is a restriction, but there could be potential impacts on downstream velocity. This needs to be explored holistically.
- Develop bike share stations
- Provide access for public to play in creek water
- Potential use for preschool, church and Lafayette School for outdoor education area for teachers and others for lunches, after school meetings
- Orient retail uses and views to creek.

4. East Reaches 1 & 2 (Channelized): This portion of creek has been channelized. Contra Costa County Flood Control District has a maintenance easement over the channelized portion. The Downtown Specific Plan designates a site for Library Park to occur with redevelopment of a private parcel.

- Provide access for families to play in the water with walkway structures leading to water.
- School bus drop off spot for Stanley or Lafayette School, opportunity to use a creekside trail as a connection
- Look at ways to enhance appearance of or remove concrete channels walls
- Provide alternative natural, shaded amphitheater outdoor space for library use.
- Explore option to remove concrete bottom of channel and replace with native riparian vegetation.
- Temescal Creek is a good example

5. East Reach 3: Gazebo Park, Las Trampas - Briones Trail and Leigh Creekside Park interface with the creek. Contra Costa County Flood Control District owns land by the drop structure.

- Closer access and trails into the Creek
- Have a clean-up day. (Some people didn't hear about event.)
- Another "walkable school bus" drop off spot for Stanley and Lafayette School, would be good at gazebo.
- Great spot for seniors to enjoy across the street from where they live.
- Can't see creek from bridge, sides are too tall.
- Gazebo Park extends into cleaner property? Correct map.
- Take school locations into consideration.
- Incorporate Briones – Las Trampas trail into project.
- Provide access for families to play in creek water.
- City should take back parking lot for park by Gazebo Park.
- Sidewalks on Mt. Diablo are insufficient east of Golden Gate.
- Potential tradeoffs for drainage/maintenance responsibilities? – Owners may like this.
- Provide pedestrian access via bridge over SS pipeline across creek. Connect to neighborhood.
- Maintenance will be a huge issue.
- Include creek walk in planning process. Could get more people excited.
- Monitor of creek health, annually. Re-green.

East Reach 3 Comments

Community Meeting #2: February 2, 2016
Community Room, Lafayette Library & Learning Center
Purpose of meeting: To identify preferred options and priorities

Mayor Mitchell introduced the project, and Will Elder presented the project overview. David Gates presented potential projects to be further developed in the Downtown Creeks Plan.

Approximately 15 members of the general public attended the meeting, as well as members of the Creeks Committee. Attendees visited up to 5 stations divided by reaches, each with representations of potential projects, and provided feedback and input about the projects presented.

STATION REPORTS:

West Reach (Create gateway with overlooks, signage, and removal of invasives. Expand top of creek bank area by removing parking along the south side of Mt. Diablo Blvd.): This could be a showcase piece. Should get funding for this. Like the green street with bioswales - Ok to lose parking spaces. Consider removing the wall – make the creek accessible. Tie this project to the Lafayette Reservoir (interpretive display).

North Reach (Improve pedestrian connections through this area, bulb out and overlook areas at Lafayette Circle, Town Green creek overlook at location noted in Downtown Specific Plan, mural on concrete channel walls.): Like pathway connections to Lafayette Circle. Complete paths through this area for bikes and pedestrians. Eliminate cars on the north bank side – make this a pedestrian core, with cafes and pedestrian uses along the creek.

South Reach (Replace culvert under parking with bridge to restore creek conditions. Bulb out and overlook at Moraga Rd.): Consider a parking garage set into the hillside behind the church parking lot. Roof could be planted to make it recede visually. Vehicle access from top level. Plans must accommodate downtown parking.

Community Meeting #2

East Reaches 1-2 (channelized) (Develop pathway along north side of channel. Create mini-park/viewing area at southwest corner of Golden Gate Way and First Street. Use creek icons, decorative fencing at channel top, and textured channel walls to improve visual experience of creek.): Concrete channel is a good thing vis a vis flood control and maintenance. Preserve the oaks! Trail along north side and overlooks are good. How can we make this happen? If fake rock is used for channel surfaces, make it look good. Explain history – there was an old Grist Mill at the location of the Park Theater.

East Reach 3 (Create usable terrace space, accessed by stairs from Briones/Las Trampas Trail. Use art and creek icons to highlight creek presence.): Revise graphics to make them more easily understood. Open the railing on the EBRPD bridge – short people (especially kids) can't see over to the creek. Could this be a link to Leigh Creekside Park? Consider using sewer pipe crossing for an additional bridge. Connect from streets – create views to creeks. Many people don't even know that the bridge is there. There is informal creek access at the bridge at the west end of Leigh Creekside Park.

PROJECT RANKINGS

Participants were given ranking sheets with criteria to help with prioritization of the presented projects. Criteria considered included:

- **Public Access** – Does the proposed project provide new or improved physical or visual access to the creek?
- **Public Awareness and Education** – Will the proposed project visually enhance the creek so that people are able to enjoy, appreciate, and/or learn about the creeks?
- **Habitat / Restoration** – Will the proposed project improve the ecological functions of the creek?
- **Safety** – Will the proposed project improve public health and safety?
- **Economic Benefit** – Will the proposed project attract people to Lafayette's downtown, and encourage them to linger and patronize the local businesses?
- **Ease of Implementation** – Are there impediments to implementation of the proposed project? What is the "low hanging fruit"?

The ranking summary that follows shows the number of participants who gave the highest ranking (5) to each opportunity. The voting was conducted informally and by roll call, therefore the numbers in Table 7-2 should be viewed as a relative preference only (semi-quantitative).

		PROJECT	
PUBLICLY CONTROLLED	1	West Reach – Create gateway with overlooks, signage, and removal of invasives	7
	2	East Reach 3 – Art elements to highlight creek presence	5
	3	East Reach 3 – Stairs to lower terrace and creek	4
	4	West Reach – Expand top of creek bank area by removing parking along south side of Mt. Diablo Blvd.	3
	5	South Reach – Bulb out and overlook at Moraga Rd.	1
PUBLIC / PRIVATE PARTNERSHIPS	6	Work with property owners to incentivize creek enhancements	10
	7	All Areas - Remove invasive plants and replant with native riparian vegetation	8
	8	Work with agencies to streamline permit process	7
	9	All Areas - Remove invasive plants (above ground only – permits not needed)	7
	10	City develop maintenance association for creek channel improvements	6
	11	Install creek signage – wayfinding, identity and interpretive	5

Table 7-2: Project Ranking Summary

Draft Plan Review: Summer-Fall 2016

Creek Committee members will present the Draft Plan to the Parks, Trails & Recreation Commission, the Design Review Commission, the Downtown Street Improvement Master Plan Implementation Committee, and the Parking Ordinance Committee at publicly noticed meetings, to obtain further input regarding the Plan.

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CHAPTER 8: IMPLEMENTATION

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IMPLEMENTATION APPROACH

The Downtown Creeks Plan is intended as a Master Plan that will be implemented incrementally over a long time horizon. The plan sets the framework for implementation to occur as funding is secured for public projects and as individual privately owned properties are developed or redeveloped over time.

The City of Lafayette, in evaluating the opportunities to undertake projects, will need to prioritize its efforts. In the public sector, obtaining funding will be a major factor. Many of the actions described in the chapter on *Creek Protection, Preservation and Restoration*, such as incremental removal of invasive species or LID projects in the public right-of-way, are projects that are more easily implemented and may be done with no or minimal permitting. Some may be done by volunteer efforts of stewardship groups.

On privately owned properties, many projects are constrained by current setback ordinances, parking requirements, and size and height limitations. Private property owners may be reluctant to pursue projects that require permitting due to the delays and expense that the process involves. To encourage private property owners to move forward with projects that enhance the creeks and promote public access, the City must consider the incentives that it may confer on the property owner, such as a setback exception for appropriate public use space, providing off-site parking that will satisfy an owner's parking requirement, allowing a larger building footprint, height or density than is allowed under the present zoning regulations or assume responsibility for obtaining the permits from the regulatory agencies.

Project prioritization must be based to some extent on opportunistic considerations, such as a creekside property seeking redevelopment, a stewardship group coming forward for habitat restoration, or specific funding becoming available. To better focus the City's efforts, whether on seeking funding or partners for a particular project or developing requirements or incentives for property owners, the following factors should be considered.

PROJECT PRIORITIZATION

Projects should be evaluated on the basis of the following criteria. Each criterion may be assigned a value from 1 to 5, with 5 being the highest value. For example, in terms of Public Access, physical access to the creek channel may be a very high value, but a project that opens views from a public area where a great number of people will be able to see the creek may be of equal or higher value.

1. Public Access – Does the proposed project provide new or improved physical or visual access to the creek?

- Physical access – Will the project allow the public to be in the creek channel, touch the water?
- Visual access (community at large) – Will the project open views to the creek from public areas?
- Visual access (limited) – Will the project open views to the creek from private property (businesses, residential)?
- Nuisance / affect privacy (negative value)

2. Public Awareness and Education – Will the proposed project visually enhance the creek so that people are able to enjoy, appreciate, and/or learn about the creeks?

- Visual enhancement of creek – Will the project increase the creek's visual interest and attractiveness?
- Opportunities for public education – Will the project provide opportunities for educational / interpretive displays?

3. Habitat / Restoration – Will the proposed project improve the ecological functions of the creek?

- Restore natural creek channel – Will the project create bed and bank conditions that allow the creek to flow in a more natural pattern?
- Improve habitat - Will the project enhance conditions for native plant and animal species to thrive?
- Reduce degradation – Will the project remove invasive plants or debris from the creek channel, or reduce adverse impacts of inappropriate creek bank treatments?

4. Safety – Will the proposed project improve public health and safety?

- Address hazardous condition – Will the project reduce flooding, erosion, or other public safety risks?
- Create risks – Will the project create potential risks, such as an "attractive nuisance" which would entice members of the public into an unsafe area (e.g. areas of high creek flow during the wet season)? (This would be a negative value.)

5. Economic Benefit – Will the proposed project attract people to Lafayette's downtown, and encourage them to linger and patronize the local businesses?

- Enhance Lafayette brand – Will the project enhance the image and identity of Downtown Lafayette as a unique and special place?
- Enhance business venue – Will the project create an opportunity for adjacent businesses – such as increased pedestrian presence or an attractive location for a dining terrace?
- Enhanced walkability – Will the project create attractive, safe and interesting pedestrian spaces, and improve pedestrian circulation?

6. Ease of Implementation – Are there impediments to implementation of the proposed project? What are readily implementable projects?

- Under public control – Is the project site under public control (allowing the City or other public agency to implement on its own)?
- Partnership potential – Is there a property owner/ developer/non-profit who would partner with the City to implement the project?
- Available funding – Are there likely funding sources (grants, development incentives, etc.) to implement the project?
- Permitting processes – What is the level of permitting needed for the project (minimal? burdensome?)
- Costs – What is the order of magnitude cost needed to implement the project? (lower costs may mean that the project is more feasible – "low hanging fruit")
- Ongoing maintenance - Is there a plan and are resources available to maintain the project improvements (e.g. vegetation establishment, trail and bridge maintenance, maintenance of expanded access areas, etc.)?

POTENTIAL FUNDING SOURCES

The projects and improvements described in this Plan will require funds for design, construction, maintenance and, in some cases, acquisition of land or an easement. A wide range of funding mechanisms should be considered, so that the Plan can be implemented incrementally as opportunities arise. Following are some currently available sources of potential funding.

STATE GRANTS

Some of the most common funding sources for large creek restoration projects are government grants. The State or California administers a number of grants intended to improve habitat value, improve water quality, and educate the public about resource conservation. Among the currently active grant programs administered by the State are:

- California Department of Fish and Wildlife: The State Wildlife Grant Program provides Federal grant funds for the development and implementation of programs for the benefit of wildlife and their habitat, including species that are not hunted or fished. The program funds conservation actions for the wildlife species of greatest conservation need identified in California's State Wildlife Action Plan. The northwestern pond turtle is a species of special concern.

- California State Parks: The California Wildlife Protection Act of 1990, Chapter 9, Fish and Game Code 2780-2799.6 was enacted to provide funding in the Habitat Conservation Fund. Funding categories include the following: ... (c) The acquisition of habitat to further implement the Habitat Conservation Program. ... (f) The acquisition, restoration, or enhancement of riparian habitat. (g) The acquisition or development of wildlife corridors and urban trails, which bring urban residents into park and wildlife areas. (h) Nature interpretation, educational, or other enrichment programs that bring urban residents into park and wildlife areas.

- Wildlife Conservation Board: California Riparian Habitat Conservation Program supports a coalition of State, Federal, local and private organizations whose mission is to develop a coordinated approach to the protection of riparian ecosystems. Grants are awarded for the protection, restoration and enhancement of riparian habitat systems.

- Wildlife Conservation Board: Land Acquisition and Habitat Enhancement and Restoration Program - San Francisco Bay coastal wetlands and watersheds - provides funding for acquisition and habitat restoration projects for protection and restoration of coastal wetland and watersheds within the San Francisco Bay area

- California Coastal Conservancy: Proposition 1 Grants are competitive grants for multi-benefit ecosystem and watershed protection and restoration projects, consistent with the Purposes detailed in Chapter 6, "Protecting Rivers, Lakes, Streams, Coastal Waters and Watersheds" of Proposition 1. The Conservancy identified priorities for Proposition 1 expenditures based on the priority issues within its jurisdictions, review of existing State plans, and determination of projects that achieve multiple benefits, serve disadvantaged communities and result in quantifiable outcomes. The four identified priorities are: Water Sustainability, Protect and Enhance Anadromous Fish Habitat, Wetland Restoration, and Urban Greening. Proposition 1 allocates $100.5 million to the California Coastal Conservancy. Grant guidelines are being finalized now and grant cycles should begin in FY 2016/17.

- California Natural Resources Agency: California Urban Rivers Grant Program is a competitive program that awards grants to projects that meet at least two of the specified statutory conditions, which include: use of soils, plants, and natural processes to treat runoff; create or restore native habitat; and increase regional and local resiliency and adaptability to climate change. The Agency anticipates two funding cycles with approximately $9.3 million available to award in each cycle for the California Urban Rivers Grant Program. There are no minimum or maximum grant amounts for this grant program. The first grant cycle is underway, applications are due October 3, 2016. The Agency also administers the California River Parkways project, which is currently closed pending further State budget clarifications. A cycle was completed in 2015, providing $7.6 million statewide with a maximum $500,000 per project. A grant cycle in 2010 awarded $1,836,800 to the City of Hercules for their Chelsea Wetlands Restoration Project which restored 5.2 acres of tidal floodplain marsh, and $1,850,000 to the City of San Pablo for their Wildcat Creek Trailhead Park & Creek Daylighting project.

AGENCY AND FOUNDATION GRANT SOURCES

- RWQCB Mitigation Funds: A potential funding source for creek restoration projects is RWQCB mitigation funding required of developers whose projects have resulted or will result in loss of riparian habitat, particularly within the Walnut Creek Watershed. These funds must typically be used for restoration projects within the same watershed, and may be used for construction, or for studies required for the planning or advancement of restoration projects (e.g. hydraulic studies, geotechnical studies). Projects such as the removal of the culvert beneath the Methodist Church parking lot in the South Reach could be suitable for such funding. Approval of appropriate mitigation projects would be determined by the Regional Water Quality Control Board.

- Measure WW Grants: Measure WW was passed by voters in 2008 to help the East Bay Regional Park District meet the increasing demand to preserve open space for recreation and wildlife habitat, as well as making 25% of the funds available directly to cities and special districts for high priority community park projects. Acquisition and restoration of creeks in urban cores is a specifically listed project under Measure WW, which allocated $8 million for EBRPD to work with cities and community organizations to restore urban creeks and acquire creek easements. At least two projects proposed in the Downtown Creeks Plan are likely eligible for Measure WW funding - restoration and access to the West Reach (on City of Lafayette property), and improvement to East Reach 3. The East Reach 3 project at the confluence of Lafayette and Las Trampas Creeks is located on both EBRPD property and City of Lafayette property, and could be funded in part by City-allocated funds and partly by EBRPD-allocated funds. Acquisition of creek easements could also facilitate restoration efforts on private properties.

- Rose Foundation for Communities and the Environment: This foundation gives grants for projects designed to benefit the water quality of many of California's watersheds and their ecosystems. Funding is granted through either their California Watershed Protection Fund, or the Northern California Environmental Grassroots Fund. Funding fluctuates, and the process is very competitive.

- Gordon and Betty Moore Foundation: Among its programs, this foundation funds conservation projects in the San Francisco Bay Area, with the goal of maintaining and, where possible, increasing the Bay Area's biodiversity, ecosystem services and nature-based recreation opportunities.

CITY FUNDING SOURCES

- General Fund. The City's General Fund contains moneys available at the City's discretion for capital improvement or maintenance projects. If a project proposed in the Downtown Creeks Plan is a high priority for the City, funding may be available for all or part from this source.

- Development Impact Fees. The City assesses various fees for development and redevelopment projects. As development or redevelopment occurs along the downtown creek corridors, several fees may be triggered that could be used to fund public improvements, or that could be waived as an incentive for the private developer to construct the improvements. Such fees include Parkland and Park

Facilities Fees (which could be applied to creekside pathways or overlook/gathering areas), Walkways Fee (which could also be used for creekside paths), and the Drainage Fee (which could fund LID drainage projects).

- Dedication of Property. Voluntary dedication of setback area or creekside pathways for public use may occur when the property owner obtains some benefit (such as increased pedestrian traffic, reduced parking requirements, height variances or the like). Dedication of property or public improvements may be required by the City as a condition of approval of development or expansion of use, as long as a rational nexus and rough proportionality are established. For example, the creekside trails in the Shield Block are parts of the City's Trails Master Plan, and as such, the City may acquire a trail easement as a condition of approval for development. Alternatively, the City, in conjunction with the County, could enact an ordinance in accordance with Government Code Section 51200 et. seq., the California Land Conservation Act of 1965 or the Williamson Act, which would permit the City to acquire trail easements from landowners in return for lower tax assessments on that portion of the property. As a trail established pursuant to the Trails Master Plan, the City's Parks, Trails and Recreation Department would be responsible for maintenance of the trail.

IMPLEMENTATION PARTNERS

Key implementation partners in this plan are the owners through whose properties the majority of the creek reaches are located. Partnership may take many forms, for example:

- Property owners may form a Special District, which in exchange for defined benefits such as reduced parking requirements, they contribute to a creek enhancement and improvement fund enabling the City to maintain the creeks.
- The property owner may grant access along top of bank for a creekside path or creek overlook area, granting the City an easement, and the City may construct the path and associated improvements.
- The property owner may undertake a revegetation project, and the City may accept maintenance responsibility for the area.
- The property owner may contribute fees to a fund for ongoing creek maintenance, which could be coordinated and implemented by the City.

Other agencies, districts or governmental organizations may be potential partners. For example, the Sonoma County Water Agency partnered with the City of Santa Rosa to create the Creek Stewardship Program, which organizes volunteers to be the "eyes and ears" of the creeks, helping to revegetate and improve the health of the creeks as well as reducing problems such as illicit dumping, water pollution, illegal camping, bank erosion and growth of non-native invasive plants. A number of existing organizations are potential partners for stewardship of Lafayette's Downtown Creeks, which may include organizing and participating in creek cleanup days or removal of invasive plants. Such groups might include:

- Sustainable Lafayette
- Lafayette Environmental Task Force
- Walnut Creek Watershed Council
- Lafayette schools
- Lafayette Chamber of Commerce
- Service organizations (e.g. Rotary)
- Contra Costa Resource Conservation District
- Alameda-Contra Costa Weed Management Area.

PRIVATE PROPERTY IMPROVEMENTS

In order to ensure that the creeks are protected, preserved, and restored when any development, redevelopment or intensification of use is proposed on private property, baseline requirements should be included in any conditions of approval. These should include:

- Identify areas of remaining natural habitat to be recognized as constraints in site planning.
- Remove invasive species from the creek channel and revegetate with appropriate native riparian species.
- Implement LID measures for stormwater runoff that will flow to the creek.

To encourage private property owners to provide additional enhancements and access to Lafayette's downtown creeks, a range of options should be made available. These might include:

- Expedited review of development proposals.
- City assistance with permitting, coordination with agencies, and coordination with other project stakeholders.
- Pursuit of public/private grant funding opportunities.
- Waivers of City fees: Walkway Fees could be waived where the property owner provides a publicly accessible walkway along the creek. Parkland and/or Park Facility fees could be reduced or waived if the project includes a creek-related activity area in addition to the walkway access.
- Consideration of exception to 35-foot height limit for provision of net significant public benefit or amenities, as discussed in Chapter 4 of the Downtown Specific Plan.
- Coordination to reduce setback requirements, or to support exceptions to the requirements as discussed in Chapter 5.
- Simplified environmental review process

PERMITTING

A fairly detailed regulatory overview has been provided in the *History, Existing Conditions and Context* chapter. Many of the projects identified in this Plan may be implemented without agency permits (e.g. LID projects, pathways, viewing areas or gathering spaces beyond the tops of banks, removal of invasive species from tops of banks or cutting ivy out of trees without disturbing the root systems). Many other projects, particularly the restoration and bank stabilization activities, will require permits from natural resources agencies.

Various levels of permitting may be required depending on the level of improvements proposed. Routine maintenance and some habitat enhancement may be possible with only agency consultation. Other work such as bank stabilization may require more extensive permitting, depending on the particulars of the project. Ongoing coordination with the regulatory agencies may result in a list of improvements that the agencies are likely to approve, and/or more clearly defined project criteria, reducing uncertainty for property owners. A comprehensive Downtown Creeks Plan may result in reduced permitting requirements, facilitated permitting, or reduced fees. The City will consult with the regulatory agencies on the ability to streamline permitting for the creek enhancements described in this Plan.

Bank stabilization or revegetation projects within the creek banks will likely require a Streambed Alteration Agreement from the California Department of Fish and Wildlife, a Section 401 Certification from the California Regional Water Quality Control Board, and a Section 404 Permit from the U.S. Army Corps of Engineers. The need for a Section 7 Consultation with the U.S. Fish and Wildlife Service is unlikely, given that the environment around the downtown creeks is not suitable to support red-legged frog or other endangered species. However, the U.S. Army Corps of Engineers would make the determination on the need for consultation where modifications to regulated habitat are proposed. Areas of jurisdiction and estimated times for permit processing are summarized in the table that follows.

Agency	***Jurisdiction***	***Permit Type***	***Duration for Receipt of Permit Following Application***
California Department of Fish and Wildlife	*Stream bed and banks*	*Streambed Alteration Agreement (Sections 1600-1603)*	*90-120 days*
California Regional Water Quality Control Board, San Francisco Bay Region	*Streambed below ordinary high water and wetlands*	*Clean Water Act Section 401 Water Quality Certification/Waste Discharge Requirements*	*3-6 months*
United States Army Corps of Engineers	*Streambed below ordinary high water and wetlands*	*Clean Water Act Section 404 (Nationwide or Individual Permit)*	*Nationwide = 3-6 months Individual= 6-12 months*
United States Fish and Wildlife Service	*Anywhere a special status species may be impacted*	*Endangered Species Act Section 7 Consultation (Informal Consultation = Letter of Concurrence or Formal Consultation = Biological Opinion)*	*Informal= 2-4 months Formal= 6-12 months*
State Water Resources Control Board Division of Water Quality	*Discharges to the waters of the United States*	*Multiple types of discharge permits*	*1-6 months*

Table 8-1: Permitting Jurisdiction and Processing Time for Natural Resource Permits

Given the multiple agencies and jurisdictions, many property owners are generally discouraged from engaging in projects that may require permitting. Given the amount of effort and expense typically associated with the process, the City could create a significant incentive to property owners by facilitating the permitting process for downtown creek projects.

In areas where improvements are desired on property owned or under easement to the Contra Costa County Flood Control District, encroachment permits would be required, as well as licensing agreements obligating the proponent of the project to maintain those improvements.

NPDES permits and the stormwater treatment features for regulated projects can potentially implement some of the creek enhancements described in the Plan. These permits have alternative compliance options that allow payment of in-lieu fees or off-site storm water treatment facilities that could further implementation of the creek preservation and restoration measures in the Planning Area.

DESIRED OUTCOMES AND IMPLEMENTATION REQUIREMENTS

The Downtown Creeks Plan furthers the goal of protecting and enhancing Lafayette's downtown creeks by defining more specific desired outcomes. The Plan describes implementation actions to achieve each outcome and their associated issues. Then polices, programs or other measures are proposed for the Planning Area as appropriate to satisfy these implementation actions. The desired outcomes, implementation actions/issues and proposed polices, programs and other measures are shown in Table 8-2.

DESIRED OUTCOME:

1. Protect, enhance and expand native habitat along the creek corridors of Downtown Lafayette

Implementation Actions and Issues	***Proposed Policies, Programs or Other Measures***
A. Preserve native trees and areas of native riparian habitat. *The Tree Protection Ordinance defines all trees in the downtown as Protected Trees and guidance on how to determine native riparian areas can be found in Section 6-1702. Definitions: "Native riparian species" means a tree or plant indigenous to a riparian habitat along a perennial or intermittent creek, stream or other watercourse and that is within thirty-feet of the top of a creek bank or that is beyond thirty-feet but in such proximity to a creek bank that it requires or tolerates soil moisture levels in excess of that available in adjacent uplands* *Relevant guidance from in the Downtown Design Guidelines (DDG) can be found on Page 11. All Districts: Creeks and Landscapes: Creek Goal: Development design should embrace creeks and connect the public to them. Creek Guideline 1: Maintain and restore native riparian areas. This Plan contains Table 5-2: Suitable Native Plant Species for Revegetation and Enhancement of Riparian Areas.* *Page 12 of the DDG also contains a potentially conflicting Landscape Goal: Landscaping should enhance the aesthetic quality and design of the downtown, create an inviting environment for pedestrians, and mitigate impacts related to noise, privacy, and environmental quality. This goal potentially conflicts with this Plan because it includes guidance that may not be consistent with a native riparian plant palette.* *Jurisdictional waters of the State regulated by the RWQCB, as well as jurisdictional waters regulated by the CDFW, extend to the top of bank and outer edge of woody riparian vegetation where present along creeks in the Planning Area. Distinguishing the edge of woody riparian vegetation beyond the top of bank is difficult in some locations in the Planning Area, given that the riparian woodlands can integrate with the surrounding upland oak and bay woodlands.*	• *The DDG should reference Table 5-2: Suitable Native Plant Species for Revegetation and Enhancement of Riparian Areas in this Plan to help ensure downtown projects maintain and restore native riparian areas.* • *Amend the DDG to clarify that the Landscape Goal and Guidelines on page 12 only apply to the portion of a creekside parcel that is outside the native riparian area.* • *Consult with the RWQCB regarding mapping the boundaries of the native riparian habitat in the Planning Area.*
B. Where appropriate, preserve mature non-native trees that contribute to the riparian canopy or other beneficial habitat values, and that are not invasive or likely to spread and replace native riparian vegetation. Preserving non- native trees should be secondary to maintaining and improving conditions for native riparian trees along the creek corridors. *The Tree Protection Ordinance defines all trees in the downtown as Protected Trees.* *The DDG provides appropriate guidance on page 11: Creek Guideline 5: Transition landscaping toward and along the creek corridor for a consistent native riparian plant palette.*	• *None required. The Tree Protection Ordinance protects all trees in the downtown and this Plan refers to the DDG for guidance on use of non-natives outside of and adjacent to riparian areas .*

Table 8-2: Desired Outcomes; Implementation Actions and Issues; and Proposed Policies, Programs or Other Measures

Implementation Actions and Issues	*Proposed Policies, Programs or Other Measures*
C. Improve habitat conditions by controlling and eradicating non-native invasive species and restoring native riparian vegetation.	• *Require development applications to address non-native invasive plant species in their planting plans for riparian areas.* • *The City should educate property owners on the benefits of eradicating non-native invasive species in riparian areas, and consider incentives to encourage these property owners to control and eradicate non-native invasive species in riparian areas and revegetate with native riparian plants.*
D. Provide necessary monitoring and maintenance to prevent re-establishment of non-native invasive species and ensure the successful establishment of desired native riparian vegetation. *The City typically requires development projects with special landscaping needs to have a Landscape Maintenance Agreement recorded on the parcel. Similar agreements are also used to ensure adequate maintenance of stormwater control features. Recording such requirements with the parcel ensures disclosure to new owners.*	• *Use Landscape Maintenance Agreements to prevent re-establishment of non-native species in revegetated riparian areas for development projects in the downtown.* • *See policies, programs and other measures proposed in 1.C. second bulleted item, above.*
E. Protect aquatic habitat by controlling untreated runoff from impervious surfaces, preventing the introduction of fertilizers and non-approved herbicides into creek habitats, and complying with stormwater treatment requirements for existing and future development. *This protection is provided through the Municipal Regional Stormwater Permit, Provisions C.3. requirements and is implemented through the City's Stormwater Management and Discharge Control Ordinance on new development creating/replacing 10K sq. ft. or more of impervious surface. Site Design measures (listed in Chapter 6) are required for all other projects creating/replacing 2.5K-10K sq. ft. of impervious surface and for new single family dwellings.* *The City adopted an Integrated Pest Management Policy by resolution that controls the use of fertilizers and pesticides on all parcels in the City.*	• *Consider adopting supplemental requirements in the Stormwater Management and Discharge Control Ordinance that would:* *1) extend Provision C.3. requirements to new development creating/replacing < 10K sq.ft. of impervious surface, or* *2) extend Site Design measures to new development creating/replacing < 2.5K sq.ft. of impervious surface.* • *See policies, programs and other measures proposed in 2.C. bulleted items 2 through 4, below.*
F. As part of evaluating future development plans that border creek corridors: • *Evaluate opportunities for native riparian enhancement and restoration through daylighting of existing culverts and increasing natural habitat along the creek corridors;* • *Encourage the removal of culverts, impervious surfaces and structures where they border open creek channels, and provide possible incentives through density bonus and other methods to expand and enhance the riparian habitat along the creek corridors;* • *Where possible, install stormwater bioretention basins along the outer edges of the creek setback and vegetate them with native wetland species to compliment riparian habitat values of the creek corridor.* *City will coordinate and facilitate landowner efforts to properly manage, maintain and improve habitat conditions along the creek corridors of Downtown Lafayette:* • *Improving habitat conditions along creek corridors would be a new expense for most landowners. In addition, it typically triggers permitting requirements from regulatory agencies that can be costly and time consuming. Consultation with regulatory agencies can identify opportunities to improve habitat conditions while streamlining compliance with their regulations.*	• *Add the following guidance to the DDG: All Districts: Creek Guideline: Encourage removal of culverts, impervious surfaces and structures where they border open creek channels.* • *Add the following guidance to the DDG: All Districts: Creek Guideline: Placement and plantings of stormwater bioretention basins shall complement the riparian habitat values of the creek corridor.* • *Support volunteer efforts for creek clean ups, and voluntary efforts among landowners to remove and control the spread of non-native invasive species and to plant native riparian vegetation.* • *Expedite implementation of Project 2, West Reach Catalyst Project, to educate the general public and landowners of the sensitivity of the creek corridors, their importance as habitat for native species, and the regulatory authority of jurisdictional agencies.* • *Pursue grants, public/private partnerships, and other funding opportunities for restoring and enhancing the creek corridors, including daylighting culverted reaches, removing stands of invasive species, and replanting native riparian vegetation.* • *Assist in completing required environmental review and securing regulatory agency authorizations for creek maintenance, creek restoration and habitat enhancement efforts of landowners.* • *Investigate areawide strategies (e.g. community improvement districts) and infrastructure programs in other jurisdictions that could help landowners cost-effectively maintain native riparian vegetation along creek banks.*

Table 8-2: Desired Outcomes; Implementation Actions and Issues; and Proposed Policies, Programs or Other Measures (cont.)

DESIRED OUTCOME:

2. Improve the water quality, reduce erosion, and increase creek bank stability in Lafayette and Happy Valley Creeks.

Implementation Actions and Issues	*Proposed Policies, Programs or Other Measures*
A. Address current creek erosion issues. Use techniques identified in this report to address minor erosion issues. Compile a list of possible contractors qualified to do this work. Larger issues will require professional consultation with a licensed civil engineer.	• *Consult with regulatory agencies on effective erosion repair and creek bank stabilization techniques that are easiest to permit.* • *Develop a standard condition of approval to apply to new development to ensure proper erosion repair and creek bank stabilization, and to streamline securing regulatory agency authorizations.* • *Ask regulatory agencies for a list of contractors they have worked with on creek bank stabilization projects, and update this information regularly.* • *Pursue grants, public/private partnerships, and other funding opportunities and incentives to assist voluntary efforts of landowners to repair, stabilize and maintain creek banks.*
B. Assist and encourage landowners to maintain creek banks. The long term health of creeks requires that landowners maintain the land adjacent to the creeks. Banks should be stable and designed to prevent erosion. Areas that drain into the creek should be kept clean, and bioretention and other LID measures should be in place to reduce the quantity and improve the quality of water discharged into the creek.	• *Consult with regulatory agencies on effective maintenance practices that are easiest to permit.* • *Develop a standard condition of approval to apply to new development to ensure proper creek maintenance and to streamline securing regulatory agency authorizations.*
C. Incorporate bioretention in existing development and future improvements. The long term health of the creek is dependent on quality of the water entering the system. As future projects and improvements are approved, one of the requirements for approval should be that any runoff from the site be mitigated by means of bioretention to help reduce the level of pollutants entering the creek.	• *See policies, programs and other measures proposed for 1.E. above.* • *Support voluntary efforts among landowners to incorporate bioretention features on their property, including pursuit of grants, public/private partnerships and other funding opportunities.* • *Expedite implementation of Project 2, West Reach Catalyst Project, to educate the general public and landowners of the benefits of reducing erosion and polluted runoff into our creeks.* • *Investigate areawide strategies (e.g. community improvement districts) and infrastructure programs in other jurisdictions that could help landowners cost-effectively incorporate and maintain bioretention features on their properties.* • *Where bioretention or rain gardens reduce the number of available parking spaces in the downtown area, consider alternative locations for parking facilities or structures, or additional parking strategies to reduce the impact of the loss.*
D. Remove concrete and steel from creek. Part of the process of returning the creek to a more natural state will be removing the non-natural material in the creek. The removal of that material ranges in difficulty, from hand removal of concrete debris to the entire restoration of the creek needed to remove concrete culverts or channels.	• *Consult with regulatory agencies on techniques to remove concrete and steel from creeks that are easiest to permit.* • *Develop a standard condition of approval to apply to projects with creeks to ensure removal of concrete and steel from creeks and to streamline securing regulatory agency authorizations.*

Table 8-2: Desired Outcomes; Implementation Actions and Issues; and Proposed Policies, Programs or Other Measures (cont.)

DESIRED OUTCOME:

3. Increase public access to, awareness and enjoyment of, and education about Lafayette's downtown creeks

Implementation Actions and Issues	*Proposed Policies, Programs or Other Measures*
A. Create creek viewing areas, including pathways adjacent to the creek, overlooks from the sidewalk where creeks cross public streets, and gathering areas such as parks or plazas with physical or visual access to the creeks. *The creek enhancements described in the DCP are consistent with the DDG.* *The DSP identifies sites for future parks including the "Town Green" at Lafayette Circle East, "Library Park" at the southeast corner of Golden Gate Way and First Street, and "Gazebo Park" at Golden Gate Way and Mt. Diablo Blvd.* *Sidewalk gaps exist where Lafayette Circle East, First Street, and Second Street cross creeks. These locations are included in the Master Walkways Plan and are eligible for the Walkway Fee program.* *Enhancements to the Lafayette Creek flood control channel must address the needs of the landowners and the Flood Control District.* *Project 8, East Reach 3 Creek Terrace, is located on property owned by East Bay Parks and the Flood Control District. East Bay Parks Measure WW allocated $8 million for East Bay Parks to work with cities to restore urban creeks. Other creek enhancements may potentially be eligible when East Bay Parks better defines the funding program.* *Increasing public access to creeks can impact the privacy on nearby residential areas and increase exposure to nuisances from others. The City has addressed similar concerns with trail facilities by adopting Trail and Trail Easement Rules, Restrictions and Regulations in Chapter 8-22 of the Municipal Code.* *Providing amenities in creek corridors will impose new maintenance costs on landowners.*	• *Designate Project 2, West Reach Catalyst, has a high priority for the City's Capital Improvement Program to demonstrate the amenity of our downtown creeks to landowners further east, and to provide a model for potential creek improvements in other areas of the City.* • *Incorporate proposed downtown parks as priorities eligible for funding through the Parkland and Park Facilities Fee program.* • *Consider incorporating the paths from East Street to Lafayette Circle and from Moraga Road to Golden Gate Way in the Trails Master Plan.* • *Prioritize use of revenue from the Walkway Fee program for constructing creek overlooks at Lafayette Circle East, First Street, and Second Street.* • *Meet with the Flood Control District to determine specifications for the path and ornamental fencing along East Reaches 1 and 2 that would be allowed under existing easement, and maintenance costs. Meet with landowners to review path and fencing design details. Follow up with an encroachment permit from the Flood Control District and an agreement with Flood Control District and landowners.* • *Meet with East Bay Parks and the Flood Control District to determine requirements for a Cooperative Agreement to implement Project 8, East Reach 3 Creek Terrace, and other proposed creek enhancements.* • *Meet with East Bay Parks to discuss Measure WW funding to restore urban creeks.* • *Consider the need to adopt an ordinance for public areas of creek corridors, similar to the rules for trail use.* • *Design creek enhancements to minimize impacts of noise and lighting on adjacent landowners and impacts to the well-being of residential areas.* • *Investigate areawide strategies (e.g. community improvement districts) and infrastructure programs in other jurisdictions that could help landowners cost-effectively maintain amenities in creek corridors.* • *Where proposed access improvements reduce the number of available parking spaces in the downtown area, consider potential locations for additional parking facilities or structures, or additional parking strategies to reduce the impact of the loss.*
B. Install a creek icon where a creek is visible from the public right-of-way, or where access to a creek occurs from a public right-of-way to highlight the presence of the creek.	• *Select creek icon design and specify locations for installation.* • *Fund and schedule creek icon installation at specified locations.*
C. Identify areas where interpretive signage can educate the public about the Las Trampas Watershed, the downtown creeks, riparian vegetation, habitat, and LID techniques.	• *Consider use of interpretive signage in creek enhancement projects.*
D. Incorporate public art to enhance awareness of the downtown creeks, in the form of decorative railings, paving treatments, murals, sculptures, or other forms that celebrate the creeks.	• *Consult with the Public Art Committee on whether to organize a competition for design of icons, fencing, lighting, or interpretive panels used in creek enhancements.* • *Consult with Public Arts Committee on potential locations of public art in creek enhancement projects.*

Table 8-2: Desired Outcomes; Implementation Actions and Issues; and Proposed Policies, Programs or Other Measures (cont.)

Implementation Actions and Issues	*Proposed Policies, Programs or Other Measures*
E. Provide incentives for construction of public access, amenities and gathering areas along creek corridors. *Creek enhancements can be required from new development as conditions of development approval where nexus requirements are met. When nexus requirements are exceeded, incentives are often needed to obtain the desired creek enhancement from new development. Incentives to landowners may also be needed where there is little prospect for redevelopment that would allow the City to otherwise obtain creek enhancements in a timely manner.* *The current Creek Setback requirements allow landowners to obtain exceptions, but only permits the City to apply conditions for creekside erosion protection and on-site drainage purposes. It does not permit setback exceptions to be conditioned for public access purposes.*	• *Consider allowing additional building height, greater floor area ratio, reduced parking requirements, creek setback exceptions, or regulatory assistance to landowners as compensation for the public benefits of creek enhancements that exceed nexus requirements.* • *Consider enacting an ordinance allowing for reduction of property taxes on portions of a property where a landowner has granted an easement to the City for public access along the creek corridor.* • *Revise the ordinance for the City's Creek Setback requirement to expand the purposes for creek setback exceptions as described in Chapter 4.*
F. Mitigate for loss of parking from creek enhancements. *At full implementation, approximately 72 spaces would be removed to accommodate all proposed creek enhancements (25 on-street and 47 off-street spaces). This is a long term vision so this loss of parking would occur gradually over a number of years.* *Project 4, North Reach – Mt. Diablo Blvd. bulb-out, would require consolidating two parking lots north of Happy Valley Creek.* *Project 9, the North Reach-Shield Block Trail, would require consolidation of all the parking lots north of Happy Valley Creek.* *Project 10, South Reach - Daylight Lafayette Creek, would include mitigating for loss of parking, loss of parking revenue and loss of a storage facility to the landowner.* *The parking impacted by Project 11, South Reach – Moraga Road Education Garden, is required for the La Fiesta Square project.* *Phase III of Project 12, East Reaches 1 & 2-Visual and Physical Creek Connections, requires consolidation of parking lots pursuant to the City's Plaza Way Zoning Overlay.*	• *Consult with the Parking Ordinance Committee on potential parking losses and mitigation measures including: additional parking facilities to compensate for parking removed by creek enhancements; revisions to the parking ordinance for downtown properties; improved parking management strategies; and incentives for landowners to consolidate parking lots with adjacent landowners to allow more efficient parking layouts.* • *Seek ways to minimize parking losses during the design phase of creek enhancements.* • *Prior to implementation of a creek enhancement that impacts parking, consult with potentially affected landowners and businesses.*

Table 8-2: Desired Outcomes; Implementation Actions and Issues; and Proposed Policies, Programs or Other Measures (cont.)

Table 8-2: Desired Outcomes; Implementation Actions and Issues; and Proposed Policies, Programs or Other Measures (cont.)

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APPENDICES

Appendix-A:
Assessment Report - Existing Conditions, Land Uses and Enhancement Opportunities
Appendix-B:
Community Engagement Plan
Appendix-C:
Project Costs

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APPENDIX A: ASSESSMENT REPORT
EXISTING CONDITIONS, LAND USE AND ENHANCEMENT OPPORTUNITIES

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PLAN AREA REACHES

Figure 3-1: Overall Map

NOTE ON MAPPING SOURCES: Throughout this chapter, aerial base imagery is from ERSI, parcel boundaries and topographic information is from the Contra Costa County GIS website (2015), bank condition information provided by ENGEO, and biological survey was conducted by Environmental Collaborative in September, 2015. Biological Conditions maps were produced by www.digitalmappingsolutions.com on 2015-11-04. Additional mapping features were produced by Gates + Associates.

WEST REACH - LAFAYETTE CREEK

SUMMARY

Location

- Located in the West End District; western gateway to Lafayette.
- Along Mt. Diablo Blvd., across from the Veterans Memorial Center

Creek Conditions

- Several areas of large and moderate bank erosion were noted along this segment.
- The 100-year Flood Zone extends approximately 50 feet at its widest point from the north and south creek banks.
- Creek conditions are natural for most of this section; there is a culvert at the western end.
- Steeply incised creek banks characterize this reach.

Land Use Context

- The parcel that largely encompasses the West Reach is owned by the City of Lafayette.
- Mt. Diablo Blvd. is located immediately north of the creek.
- Residential units and one commercial building are located on the south side of the creek.

Biological Conditions

- Black walnut trees are the predominant tree species along this creek section.
- Non-native invasive plants are found along the entire length of this section.

Outdoor and Pedestrian Use Space

- No existing outdoor use areas are located in this area.

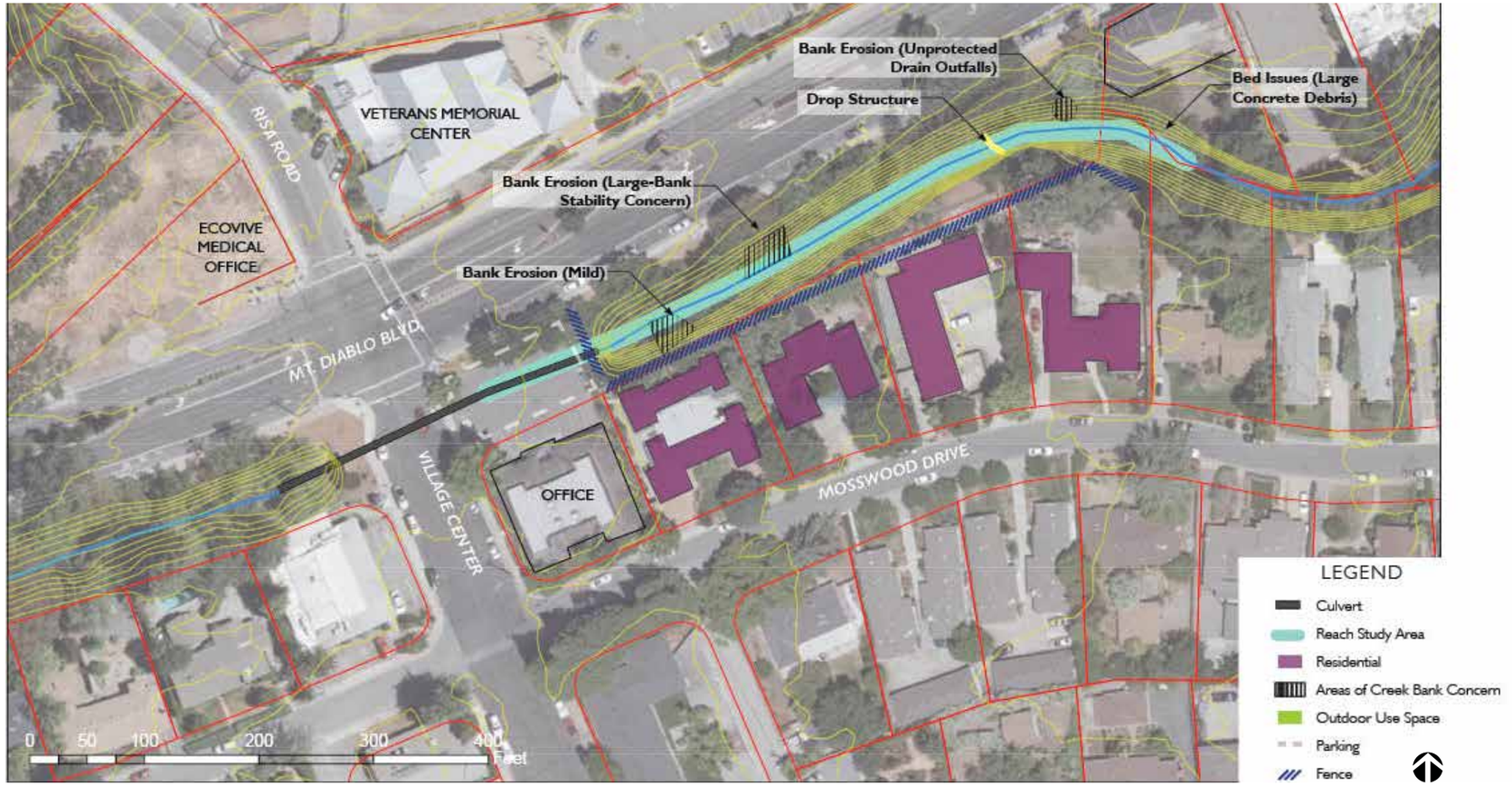


Figure 3-2: West Reach Existing Conditions.

Opportunities

- Address erosion issues that threaten Mt. Diablo Blvd.
- Create a riparian habitat restoration demonstration area
- Enhance the creek experience for pedestrians
- Create a bulb-out and bioretention area
- Create a gateway for Lafayette celebrating the creeks

KEY MAP

WEST REACH - LAFAYETTE CREEK

Creek Conditions

Of all the creek sections, this section of Lafayette Creek has the closest proximity to Mt. Diablo Blvd. and is easily visible to pedestrians walking along Mt. Diablo Blvd. It is the only reach in the Downtown Creeks Study area to be owned almost entirely by the City of Lafayette.

The West Reach has natural creek conditions except for the culvert that runs under the parking lot at the west end of this study area.

The banks of the creek are steeply sloped in the West Reach, and there is no floodplain.

Several areas of bank concern have been noted along this section of the creek. There are two areas of bank erosion, one unprotected storm drain outfall, and one area with bed issues where concrete debris has accumulated. The largest area of erosion and concern is located just opposite the Veterans Memorial Center. In this location, the bank is being severely undercut, exposing much of the root system of a large buckeye tree, and threatening to undermine the road stability of Mt. Diablo Blvd. Undercutting of the root zone is estimated to be between 50-70%. On the western end, there is an area of mild erosion. The drop structure is located approximately 200 feet east of the large stability concern area.

The 100-year Flood Zone extends approximately 50 feet from both creek banks at its widest points, and therefore is mostly contained within this segment.

Land Use Context

Located within walking distance of the Lafayette Reservoir, the pedestrian and bike pathways are heavily used along the West Reach. Many reservoir visitors use the streets in this area to park their cars and walk up to the reservoir. This area is easily accessible via BART and nearby commercial buildings, and does represent a transitional area between Lafayette's commercial downtown and the rural area surrounding Lafayette Reservoir. As such, natural landscaping and landscaping materials are preferred for this area.

Land use in the West End District is predominantly commercial and residential, and some civic buildings as represented by the Veterans Memorial Center. However, this section of the creek has no buildings immediately adjacent to the northern creek bank; the northern creek bank is bordered by pedestrian paths, bike paths, and Mt. Diablo Blvd. Residential buildings are located on the south side of the creek, however they are separated from the creek by solid wood fencing.

No buildings fall within the perimeter of the 100-year Flood Zone, although portions of the residential yards do sometimes extend into this zone.

Outdoor and Pedestrian Use Space

Outdoor use areas include the public sidewalk, pedestrian paths and bike paths along Mt. Diablo Blvd. Some informal footpaths lead to the creek banks.

Walking path near Lafayette Reservoir along Mt. Diablo Blvd.

Veterans Memorial Center

WEST REACH - LAFAYETTE CREEK

Biological Conditions and Features

Invasive non-native plant species are very prevalent along this section of the creek. The invasive plants include English ivy (*Hedera helix*), giant reed (*Arundo donax*), and bamboo. The ivy is most prevalent, and is smothering the trees in this area.

Trees in this section of the creek include black walnut (*Juglans hindsii*), white alder (*Alnus rhombifolia*), California buckeye (*Aesculus californica*), live oak (*Quercus agrifolia*), and valley oak (*Quercus lobata*).

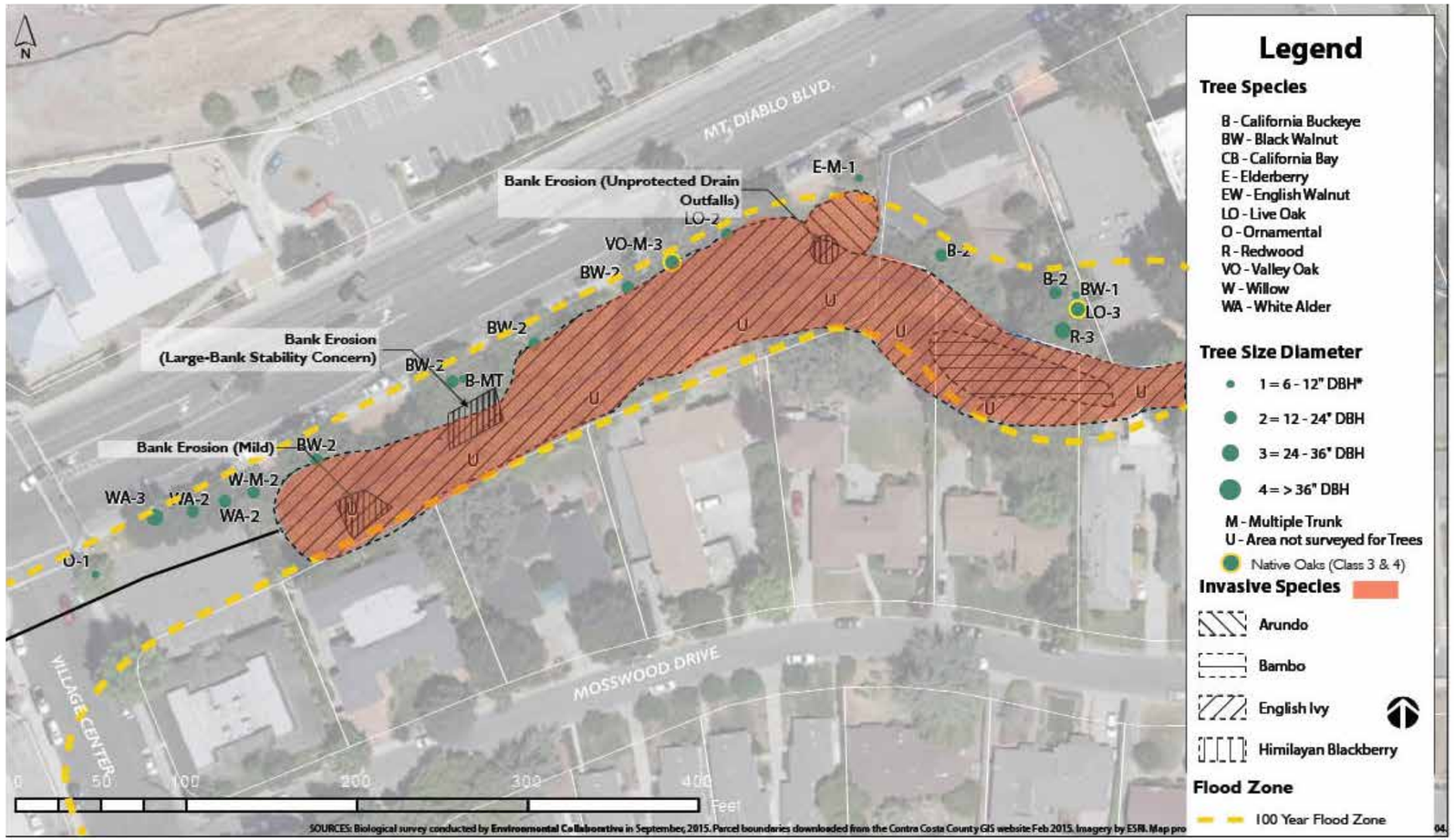


Figure 3-3: West Reach Biological Conditions

WEST REACH - LAFAYETTE CREEK OPPORTUNITIES

Public Access and Use

Public ownership of this segment of the creek creates a unique opportunity to develop a gateway for the downtown area, and to create a model for creek restoration. Creating a model of creek restoration along this reach would exemplify the benefits of creek restoration to the public, and provide a blueprint for how to restore other areas of Lafayette's creeks. Private land owners could leverage this information to restore segments of the creek which they own.

To improve pedestrian access to the creek from Mt. Diablo Blvd., the on-street parking on the east bound side of Mt. Diablo Blvd. could be eliminated and replaced with a wider sidewalk (pervious paving), overlook, and bioretention area. A bioretention area would serve a dual purpose of buffering pedestrians from busy Mt. Diablo Blvd., and cleansing stormwater runoff before it reaches the creek.

An overlook deck on the western end of this creek section could serve a dual purpose of increasing public access to the creek, as well as shoring up the area of high erosion concern. A second opportunity lies further east where the bank needs to be stabilized due to erosion issues. Bank stabilization in this area could also provide creek access.

Removal of invasive species would open views to the creek from this well-traveled sidewalk.

Habitat Restoration

The natural creek conditions that exist along the West Reach have suffered extensively from non-native invasive plant species. Removing the non-native vegetation, and re-vegetating with native riparian plants, would be an important component of restoring this area of the creek to more natural conditions. Removing the English ivy would also make the creek area and habitat much more open and visible to pedestrians.

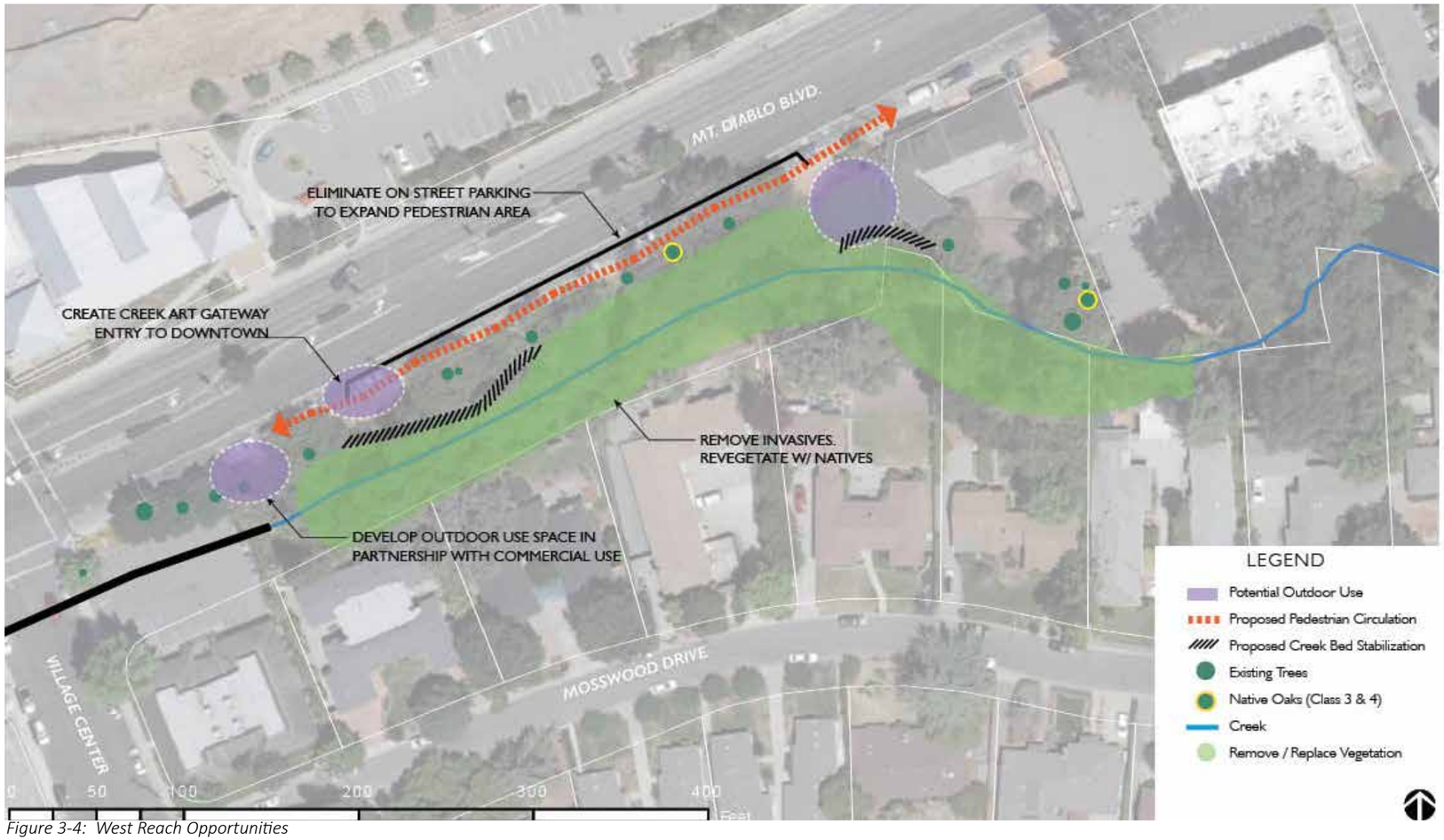


Figure 3-4: West Reach Opportunities

Current creek frontage along Mt. Diablo Blvd.

Possible enhancements include a wider sidewalk with overlook.

NORTH REACH - HAPPY VALLEY CREEK

SUMMARY

Location

- Located between the western and eastern segments of Lafayette Circle, south of Mt. Diablo Blvd.

Creek Conditions

- The area is relatively flat with a minimal elevation change of approximately 16 feet.
- The 100-year Flood Zone extends approximately 75-125 feet from the creek banks at its widest points.
- Natural stream conditions with some culverts.

Land Use Context

- The creek is located on the rear property lines, often behind commercial parking lots and with limited linear access along the creek.
- High pedestrian use area due to the proximity to businesses, apartments and restaurants
- The south side of the creek is mixed-use with residential and business uses; commercial and retail uses are located on the north side of the creek.

Biological Conditions

- Some of Lafayette's largest and most attractive valley oaks are located in this reach.
- Invasive non-native plant species extend almost the entire length of the creek banks.
- Redwoods and valley oaks are the most common trees in this area.

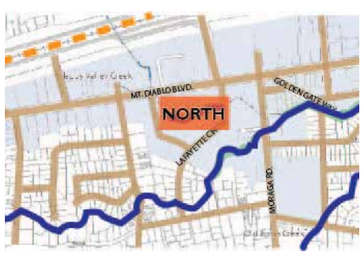
Outdoor and Pedestrian Use Space

- A short existing path along the northern edge of the creek is not connected to other pedestrian paths.
- The Downtown Specific Plan has identified a potential Town Green site adjacent to the creek and several large valley oaks, behind the Roundup Saloon which is located on Mt. Diablo Blvd.
- There is no public outdoor use space immediately adjacent to the creek on the south bank.

Figure 3-5: North Reach Existing Conditions

Opportunities

- Create bioretention areas to improve water quality and ameliorate flooding
- Restore riparian habitat
- Improve north-south and east-west pedestrian connectivity
- Increase awareness of the creek from public rights-of-way



KEY MAP

Existing path along a portion of parking lot does not connect to overall pedestrian network.

The Downtown Specific Plan identified the area near Lafayette Circle and the creek as a potential site for a Town Green.

NORTH REACH - HAPPY VALLEY CREEK

Creek Conditions

The North Reach is a section of Happy Valley Creek that runs through the "Shield Block," located in the central downtown area. At the western end of this reach, the creek emerges from a culvert under Mt. Diablo Blvd. and a parking lot. At the east end, the creek enters a culvert that extends eastward under Lafayette Circle and La Fiesta Square. Natural creek conditions exist in the area between the two culverts.

The conditions of the creek between the two culverts are characterized by a moderately sinuous creek shape, and steeply incised creek banks with no floodplain. (See Appendix A: Hydrologic and Geologic Assessment Summary.) However, the upland and top bank zones are relatively flat with gentle slopes. Under ordinary conditions, the water depth along this segment is approximately 2-3 feet. During rain events and high water conditions, the creek depth can increase to 8-10 feet.

Moderate levels of bank erosion are occurring on both sides of the creek at the eastern end of this reach, extending approximately 300 feet. Erosion and undercutting has occurred under a concrete walkway at the base of the concrete wall at The Cooperage American Grill building, but the extent has not been determined. Two other smaller areas (extending approximately 30-50 feet) of mild to moderate erosion have been noted further west along this reach. Most of the erosion in this area is directly related to ivy. A large rain event will likely increase erosion in this area.

The 100-year Flood Zone area extends approximately 75-125 feet from the both creek banks at its widest points (see Figure 2-4).

Land Use Context

The North Reach is bordered predominantly by offices and retail businesses, and the parcels along the creek are privately owned. Located in the Shield Block, the Downtown Specific Plan (DSP) has designated this area as a primary retail center for the City. The DSP has noted that Postino restaurant, the Roundup Saloon, and the Hen House buildings, as well as the redwood trees and creek, are intrinsic to creating the small town feel in this block of the city. Due to the historical significance of the Shield Block, the DSP proposes a Town Green to be located in the area between the Roundup Saloon and the creek.

Several buildings are located within the flood zone including The Cooperage which is located entirely within the 100-year Flood Zone. Several other offices and residences on the southern creek bank are also located within the Flood Zone. The northern creek bank is flanked predominantly by parking lots. Buildings on the north side are set back farther from the creek, and only portions of those buildings are within the Flood Zone. Many of the existing buildings along the southern creek bank do not conform to current setback requirements.

Outdoor and Pedestrian Use Space

An office building located at the western end of the reach has a balcony overlooking the creek where the creek is easily visible; this property does not meet the current creek setback standard.

There is a small pedestrian trail along the northern bank at the edge of the Clocktower and Postino's parking lot. Fences between properties prevent significant pedestrian movement along the creek as well as opportunities for shared parking and more efficient use of parking areas. North-south pedestrian connections across the creek are limited to the streets.

A small bioretention area and decomposed granite walking path is located across from The Cooperage and between two parking lot areas. Under a canopy of oak trees, a historical plaque denotes this area as the former home site of Elam Brown.

The creek experience is dominated by parking lots and dumpster areas.

The foundation wall of the Cooperage could be an opportunity for a creek mural.

Bioretention area located in the parking area across from The Cooperage American Grill.

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NORTH REACH - HAPPY VALLEY CREEK

Biological Conditions and Features

Some of Lafayette's largest and most attractive valley oak trees are located in the North Reach near the planned Town Green site.

Trees located along the North Reach include native as well as some non-native tree species. Planted coast redwoods (*Sequoia sempervirens*) are the most prevalent species and serve as the primary cover, followed by valley oaks (*Quercus lobata*) and the California buckeye (*Aesculus californica*). The largest and most established of the trees are the redwoods and the valley oaks.

Plant species that are located along the banks of the North Reach include both native riparian plant species as well as invasive non-natives. English ivy, a non-native invasive plant, is the primary understory plant, extending almost the entire length of the North Reach. Other invasive plant species along this segment include giant reed (*Arundo donax*).

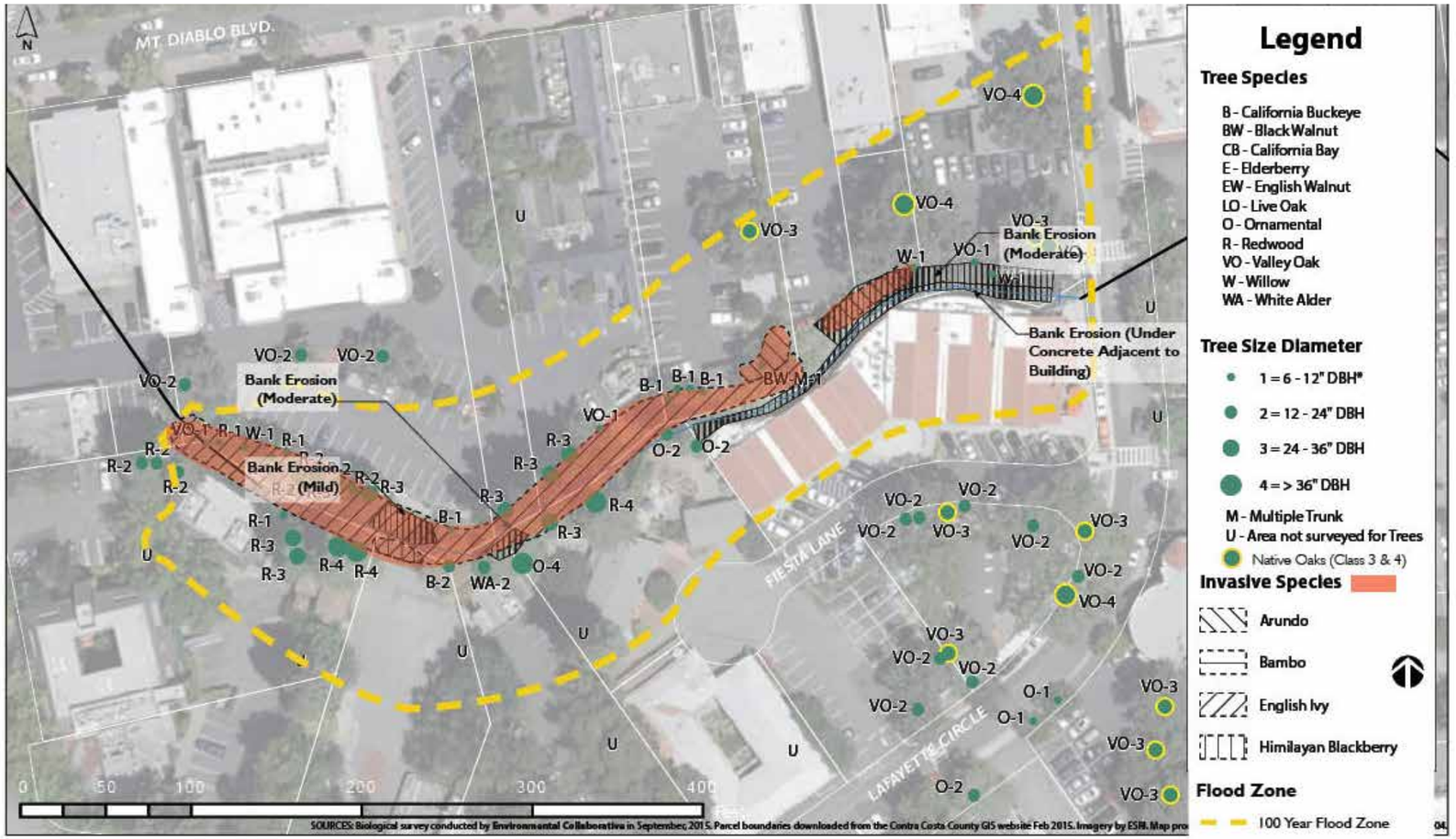

Figure 3-6: North Reach Biological Conditions

Future development should better integrate use of natural resources into site design.

NORTH REACH - HAPPY VALLEY CREEK OPPORTUNITIES

Public Access and Use

The North Reach is located in one of Lafayette's historic areas known as the 'Shield Block'; as noted in the Downtown Specific Plan, the architecture and passageways of this block provide some of the best examples of Lafayette's pioneering small-town character. This area is also the former home site of Elam and Margaret Brown; Elam Brown was one of the first Lafayette settlers and purchased Acalanes Rancho, which comprises most of modern day Lafayette. Since much of this segment of the creek has natural creek conditions, and it is located in one of Lafayette's most historically significant areas, restoring the riparian habitat and conditions along this reach would further solidify and unify the historic character of the Shield Block.

The North Reach has the potential to provide an area where people could gather under the large Valley Oaks and enjoy the ambience of the creek after coffee, lunch, or shopping. The Downtown Specific Plan and the Lafayette Trails Master Plan recommend creekside trails through the Shield Block. Such trails would provide an easily accessible environmental education opportunity for children and adults and an area where interpretive signs could be placed along pedestrian pathways and creek overlooks. The Town Green proposed adjacent to the creek on the north side should integrate the creek experience into its design.

Some of Lafayette's most mature Valley Oak trees are located in the Shield Block and visible from Lafayette Circle; these trees could be highlighted for their historical and ecological significance to the city. Making these trees a focal point in the landscape by adding seating or interpretive signage would emphasize their importance to Lafayette.

Improved pedestrian circulation will be paramount to increasing public access to the creek. To achieve this goal, it will be important to connect existing east-west oriented paths along the creek bank with

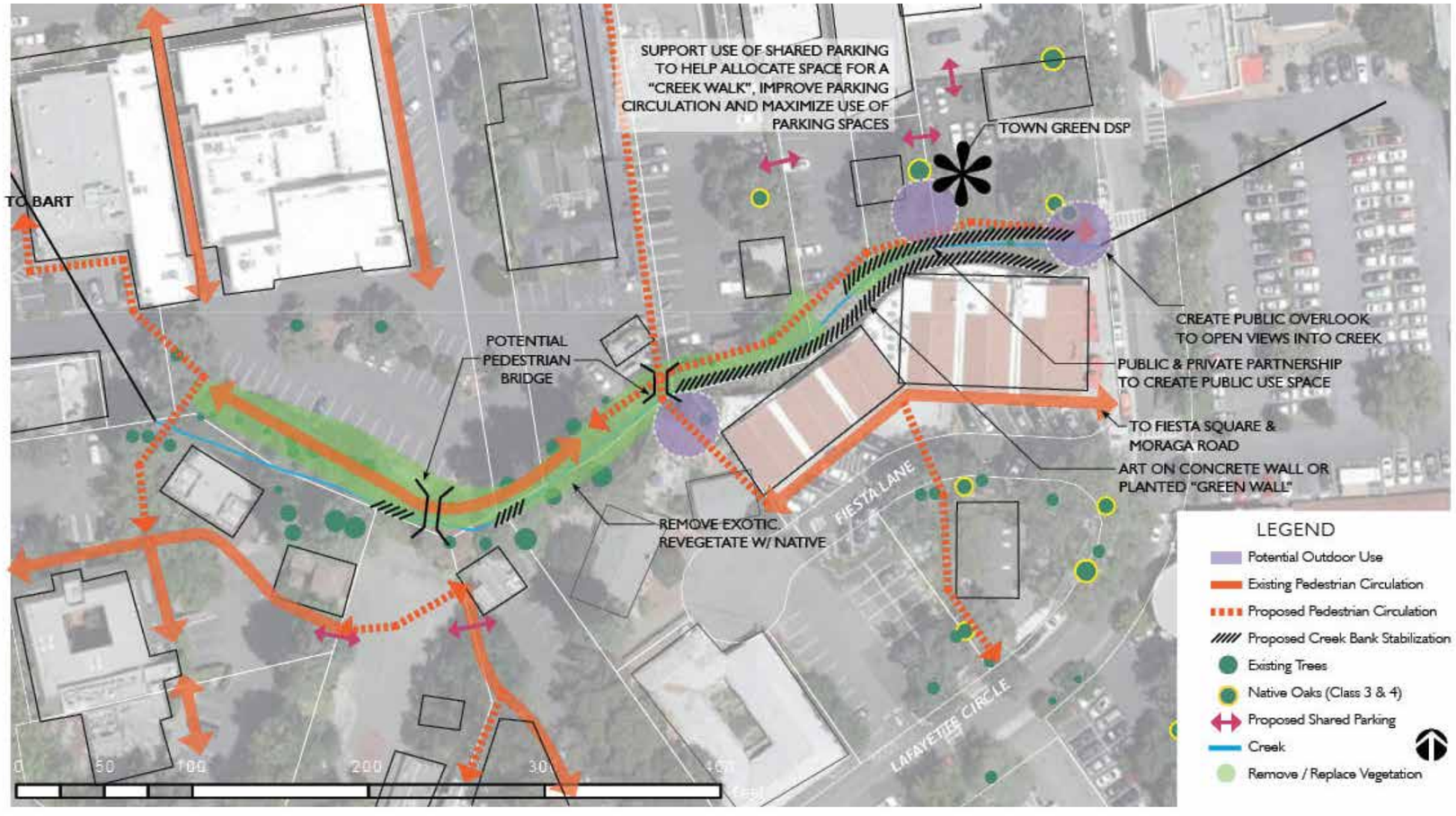

Figure 3-7: North Reach Opportunities.

new paths, enabling direct access between The Cooperage, Postino, and La Fiesta Square via the creek. Additionally, it will be important to expand north-south pedestrian access across the creek, and two approximate locations have been identified in the Downtown Specific Plan as potential sites for a future bridge. A bridge across the creek would link the pedestrian activity on Lafayette Circle and Mt. Diablo Blvd. The first proposed bridge site is located toward the end of Fiesta Lane, crossing to the Postino Restaurant property. Postino representatives are supportive of the bridge. The second site is located slightly further west from this site, and fewer trees would need to be removed during bridge construction. The second site has more open vantage points, and may provide a better view of the creek in both directions.

A parking garage included in the Downtown Specific Plan could provide the impetus for improving the creek experience with a trail through what are currently parking lot areas. Fewer parking stalls along the creek would increase the available land for pedestrian paths and bioretention areas. In

Retail uses can benefit from the special creekside ambiance.

addition to the ecological benefits of bioretention areas (described in the Habitat Restoration section), bioretention areas can beautify an area, further enhancing the pedestrian creek experience.

Views of a creek are a significant component of the creek experience that could be enjoyed by all. A universally accessible street level overlook deck located adjacent to the sidewalk along Lafayette Circle would have a variety of benefits. An overlook with seating adjacent to the street would provide a gathering spot for visitors, its visibility from the road would increase awareness of the creek, and interpretive signage could be installed to educate visitors on the riparian habitat.

Re-imagining the concrete wall along the creek under The Cooperage as an asset could re-vitalize commercial and retail businesses along the creek corridor. A mural on this wall could integrate images or concepts relevant to a riparian ecosystem, and could also be part of the visual experience from the overlook. Another option could be to install and irrigate plants on the wall face so it becomes a “living green wall.” Additionally, outdoor dining and display areas facing the creek could be created within the creek setbacks.

The majority of improvements proposed for this area would occur incrementally over time, and would be linked to the redevelopment and improvement activities on individual properties.

Habitat Restoration

Creek restoration along the North Reach will provide numerous benefits for the riparian ecosystem and the community. Replacing the ivy with native riparian vegetation would help stabilize the creek banks and help address erosion issues. In addition to the environmental benefits, habitat restoration can be a means of community engagement through volunteer efforts to remove the ivy.

Water quality is fundamental to a healthy creek ecosystem. Runoff from parking lots during rain events is a major source of pollutants, and whenever possible, water runoff from parking lots directly into creek systems should be prevented. Since there are numerous parking lots located immediately adjacent to the creek banks in this reach, direct runoff is likely reducing creek water quality. Reconfiguring and designing the parking lots and pedestrian access through these areas could provide an opportunity to develop bioretention areas at the rear of the parking lots above the creek banks. Bioretention areas would filter polluted runoff from the parking lots, improving the water quality entering the creek along this segment of the creek. Slowing water runoff into the creeks, and allowing more water to percolate into the soil via the bioretention areas, could also ameliorate flooding risks due to constrictions at the culvert locations and loss of floodplain within the creek banks.

Earlier pro-bono planning by Restoration Design Group for the Shield Block, subsequent to adoption of the Downtown Specific Plan, developed a more ambitious creek restoration concept. This concept, illustrated in the figure to the right (Figure 3-2), identified a 31’ setback requirement from the toe of slope on each side pursuant to the City’s existing setback ordinance. This setback area was allocated to the creek and permitted a wider and restored riparian channel for flood water storage, habitat restoration, and a “creek walk.”

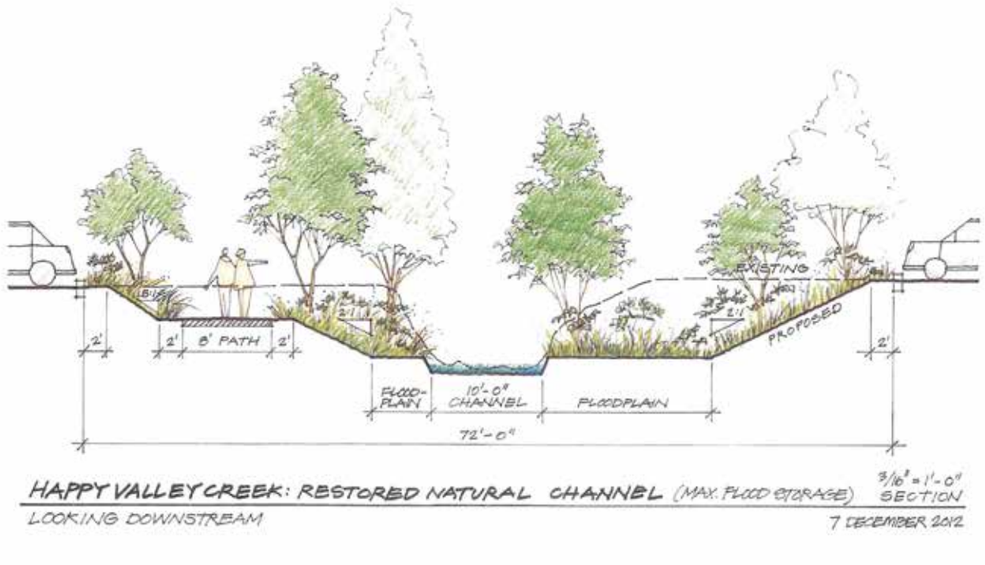

Figure 3-8: Restored riparian channel concept sketch

Source: Restoration Design Group

SOUTH REACH - LAFAYETTE CREEK

SUMMARY

Location

- Located in the Downtown Retail District between Lafayette Circle to the north and Moraga Road to the east

Creek Conditions

- Creek banks are relatively steep; some erosion and existing support structures are in need of repair.
- Natural creek conditions except for the culvert under the parking area and access drive, and the culvert under Moraga Road.
- Due to constrictions created by culverts, the 100-year Flood Zone is quite extensive on the north side of the creek. Creekside buildings opposite the Methodist Church and most of the area upstream from the parking lot culvert are located within the Flood Zone.

Land Use Context

- Multi-family and single family residential is located on the north and northwest side of the creek.
- La Fiesta Square is located on the north side of the creek.
- Lafayette United Methodist Church is the largest building complex on the south side of the creek.

Biological Conditions

- The predominant tree species are valley oaks and non-native ornamentals.
- Invasive non-native plant species extend the entire length of the non-culverted stream bank.

Outdoor And Pedestrian Use Space

- Creek-side garden and outdoor areas exist on multi-family, Futures Explored, and the church properties.
- Existing pedestrian paths connect Moraga Road to the parking areas west of the church.

Figure 3-9: South Reach Existing Conditions

Opportunities

- Replace the culvert under the parking lot with a bridge, and restore the natural creek channel.
- Restore riparian habitat.
- Expand public access to the creeks via expanded pedestrian pathways.
- Develop public use space adjacent to Moraga Road.

KEY MAP

Garden space near multi-family residences.

SOUTH REACH - LAFAYETTE CREEK

Creek Conditions

The banks of the South Reach are much steeper than those of the North Reach. The steeper banks required the construction of support walls and fencing toward the western end of this section; however, these structures are now in danger of collapsing into the creek. Toward the eastern portion of this section, a deck at the Cake Box is located within the creek high water mark.

Two culverts are located along this section of creek; one extends under Moraga Road, and the other extends under the access drive to the church parking lot. Between these culverts, wooden support wall structures are in danger of collapsing, and there is an area of mild bank erosion. The slopes are steep along this creek segment, and stabilization of the creek bank is recommended.

Despite the steep banks in several areas of the creek, just north of the creek where the slopes are nearly level, the 100-year Flood Zone extends approximately 300 feet at its widest points, crossing Moraga Road and Lafayette Circle. Inadequate culvert capacity is largely responsible for the expansive upstream flooding.

Land Use Context

The South Reach is located in the Downtown Retail District which includes the busy retail center of La Fiesta Square located north of the creek; the area also supports a wide variety of other land uses. Immediately adjacent to the creek banks, there are mixed-use areas that include privately owned residential, retail and church properties. There are no city-owned parcels.

On the eastern end of this Reach, Lafayette United Methodist Church is located along the south creek bank, and its parking lot straddles the creek. Several commercial and retail business are located opposite the church on the north creek bank along Wilkinson Lane, which connects to parking at La Fiesta Square.

The creek located behind these businesses is overgrown with non-native vegetation, and the creek banks are littered with trash. Before it passes through the culvert under Moraga Road, the creek is visible from the sidewalk; the traffic noise from Moraga Road limits the auditory benefits of the creek.

Residential buildings are located predominantly near the western end of the South Reach, and consist of both single family and multi-family units.

Several commercial and residential buildings fall within the 100-year Flood Zone on the north side of the creek, as can be seen in the map on the following page. Along the western end of this creek section, approximately seven residential buildings and two apartment buildings are located within the Flood Zone.

Outdoor and Pedestrian Use Space

There are eight existing outdoor use areas in the vicinity of the South Reach. The largest outdoor use area is located just outside the Cake Box and south of Sugi, on the north side of the creek, near Moraga Road; the creek area nearest Moraga Road has become overgrown and unused.

Several residential structures, Futures Explored, and the Methodist Church have created well-used creekside outdoor spaces. The multi-family residential space has a garden and children's play area located on the north side of the creek; a cyclone fence separates the garden and play area from the creek bank. The site is quiet, well removed from traffic noise, and the creek can be easily seen and heard from this garden setting. Futures Explored has also taken advantage of their creekside setting and has created a picnic area along the creek under the oaks; although this picnic area is also near the parking lot, it is quiet, and the sound of the creek can be easily heard at this site. Similarly, the Lafayette United Methodist Church garden, which has native riparian plantings and seating, also benefits from a quiet creekside setting on the south bank of the creek. At the western end of the church parking lot is a site where several shipping containers are located immediately adjacent to the creek; this site would be an ideal setting for picnic tables or other outdoor uses, and the shipping containers are not optimizing the outdoor use of the creekside setting. There is a pedestrian pathway from Moraga Road through the church lot to the parking lot that connects to Lafayette Circle. An informal pedestrian pathway connects the north end of East Street to the church parking lot. The church parking lot crosses the culvert, creating north-south access across the creek, and links to the parking lot near Futures Explored.

A number of other outdoor use spaces are located further away from the creek. A former private residence along Lafayette Circle which has been converted to commercial space, has a relatively large garden area located behind the building. This garden area has picnic tables and is shaded by the canopy of a large pine tree. There is also a large play area located adjacent to American Kitchen, north of the creek, which can be accessed via the church parking lot.

The steep banks along the South Reach make pedestrian access to the creek bed difficult.

Creek bank adjacent to the church is overgrown.

Attention is not drawn to the creek at Moraga Road.

Culvert beneath church parking lot .

SOUTH REACH - LAFAYETTE CREEK

Biological Conditions and Features

Invasive non-native plant species extend along the entire length of the banks of the non-culverted portion of the South Reach. English ivy (*Hedera helix*) and Himalayan blackberry (*Rubus armeniacus*) are the predominant invasive non-native species.

Trees located along the South Reach include native riparian as well as some non-native species. Unlike the North Reach which has an abundance of redwood trees, Redwoods are scarce along the South Reach. The predominant tree species is the valley oak, and a variety of non-native ornamental trees are the second most common tree type. A number of large native oak trees have been identified along this Reach.

Himalyan blackberry is forming dense thickets out-competing native vegetation, and English ivy is smothering existing trees in the South Reach. In addition to out-competing native riparian vegetation, the dense growing habit of the blackberry also limits creek access by larger animals, thereby impacting the creek flora and fauna.

A small stand of bamboo is another invasive species found on the south bank of this reach.

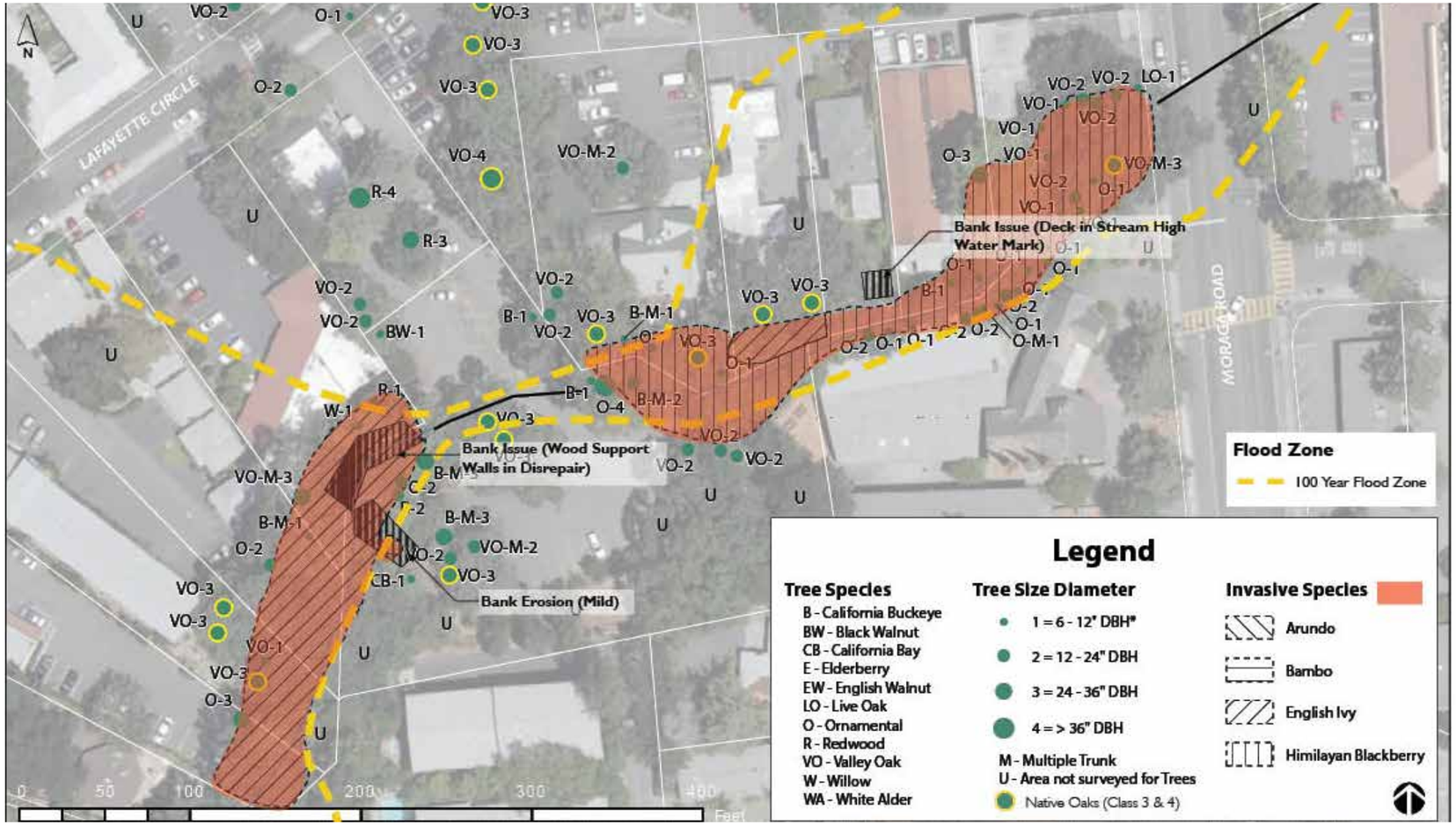

Figure 3-10: South Reach Biological Conditions

SOUTH REACH - LAFAYETTE CREEK OPPORTUNITIES

Public Access and Use

New pedestrian walkways in this segment could create a more cohesive sense of place. A network of pedestrian pathways would serve to connect the church, nearby residential sites, retail businesses and the creek area more directly, thereby integrating the riparian corridor into the everyday lives of Lafayette residents. Pathways located further away from busy streets such as Moraga Road, would allow pedestrians to enjoy not only views of the creek, but also the pleasant sound of the running waters of the creek.

The natural creek conditions of the South Reach could be optimized to expand the public's interaction with the creek. Orienting retail uses toward the creek through expanded outdoor seating or patio areas would create opportunities to achieve this goal. In particular, the outdoor space near the Cake Box provides an excellent creek-facing retail opportunity.

A big community impact could be made by converting the small parking lot off Moraga Road to a public outdoor space. The high visibility of this parking lot from Moraga Road, and its proximity to the Church and the Lafayette Elementary School, could be transformative for the community. At this site, the sidewalk could be widened, and a creek overlook could be created. Cleaning up the densely overgrown vegetation opposite Sugi's would create another public space area within a grove of valley oaks in an area highly visible from Moraga Road.

These public access areas could also be locations for raingardens or other bioretention, along with interpretive signage.

Habitat Restoration

The natural creek conditions along the South Reach make it possible to restore and enhance the habitat area and address bank stablization needs. A significant enhancement to biological conditions could be achieved by replacing the culverted creek section through the parking lot with a bridge. The hydrological impacts of removing the culvert would need to be carefully studied to ensure existing flooding problems are not worsened.

The creek banks are densely overgrown along this segment, and as a result, there is limited visibility of the creek below. English ivy and Himalayan blackberry will need to be removed to restore the area. After removal of the invasive plant species, the banks should be re-vegetated with deep rooted native plants to facilitate creek bank stabilization and to provide habitat for migration of native animals.

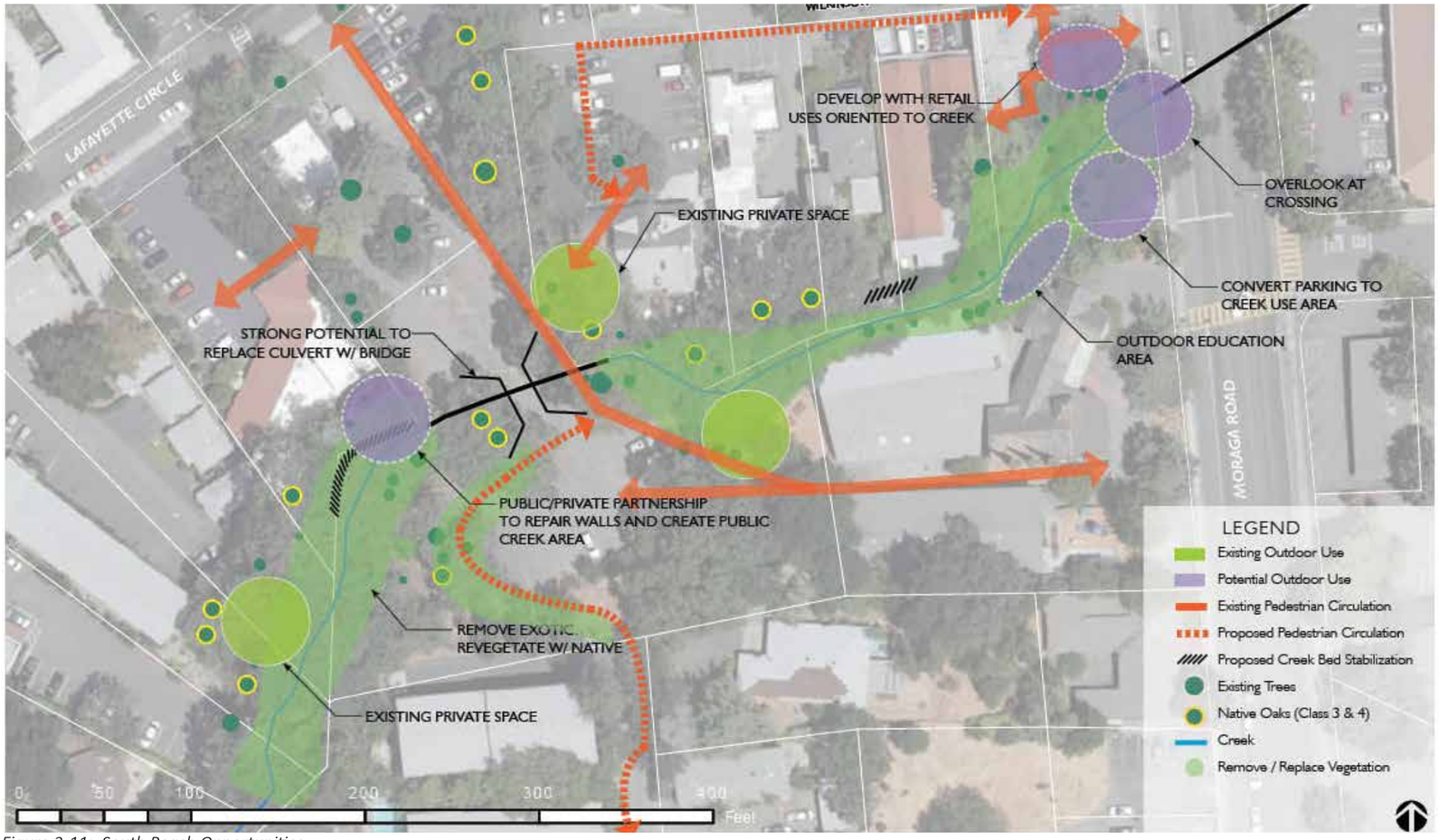

Figure 3-11: South Reach Opportunities

Signage can interpret creek features

Overlooks can provide visual access

Photosim of potential overlook area

EAST REACH 1 - LAFAYETTE CREEK (CHANNELIZED)

SUMMARY

Location

- Located in the Plaza District of the Downtown Specific Plan and the Plaza Way Character Area.
- South of Golden Gate Way (one block south of Mt. Diablo Blvd.), near 1st Street

Creek Conditions

- Fenced concrete U-channel; no natural creek areas.
- The 100-year Flood Zone extends approximately 100 feet at its widest from the north and south creek banks.

Land Use Context

- A variety of mixed-use and commercial buildings are located on the northern side of the creek.
- Single-family residences, multi-family residential units and parking areas are located on the south side of the creek.
- The Lafayette Library, a major community destination, is located in this area.
- The Downtown Specific Plan has a park proposed in a portion the parking lot opposite the Library.
- Public parking and pedestrian enhancements have been developed along Golden Gate Way.
- The Plaza Way Overlay District provides an opportunity for outdoor use space and pedestrian access.

Biological Conditions

- Several significant oak trees and a redwood grove are located in this area.
- Outdoor and pedestrian use spaces are located along Golden Gate Way.
- A circular bench seating area is located along Golden Gate Way near the Theater.

Opportunities

- Modify / enhance the surface of the concrete channel to more closely mimic a natural creek channel and/or create more natural creek bed conditions
- Obscure the view of the barbed wire fence with taller native riparian vegetation
- Develop pocket parks along Golden Gate Way to link Lafayette Plaza Park to the library and future public park
- Create a pedestrian connection between Moraga Road and the Library
- Place utilities underground to provide unobstructed views of mature creekside trees

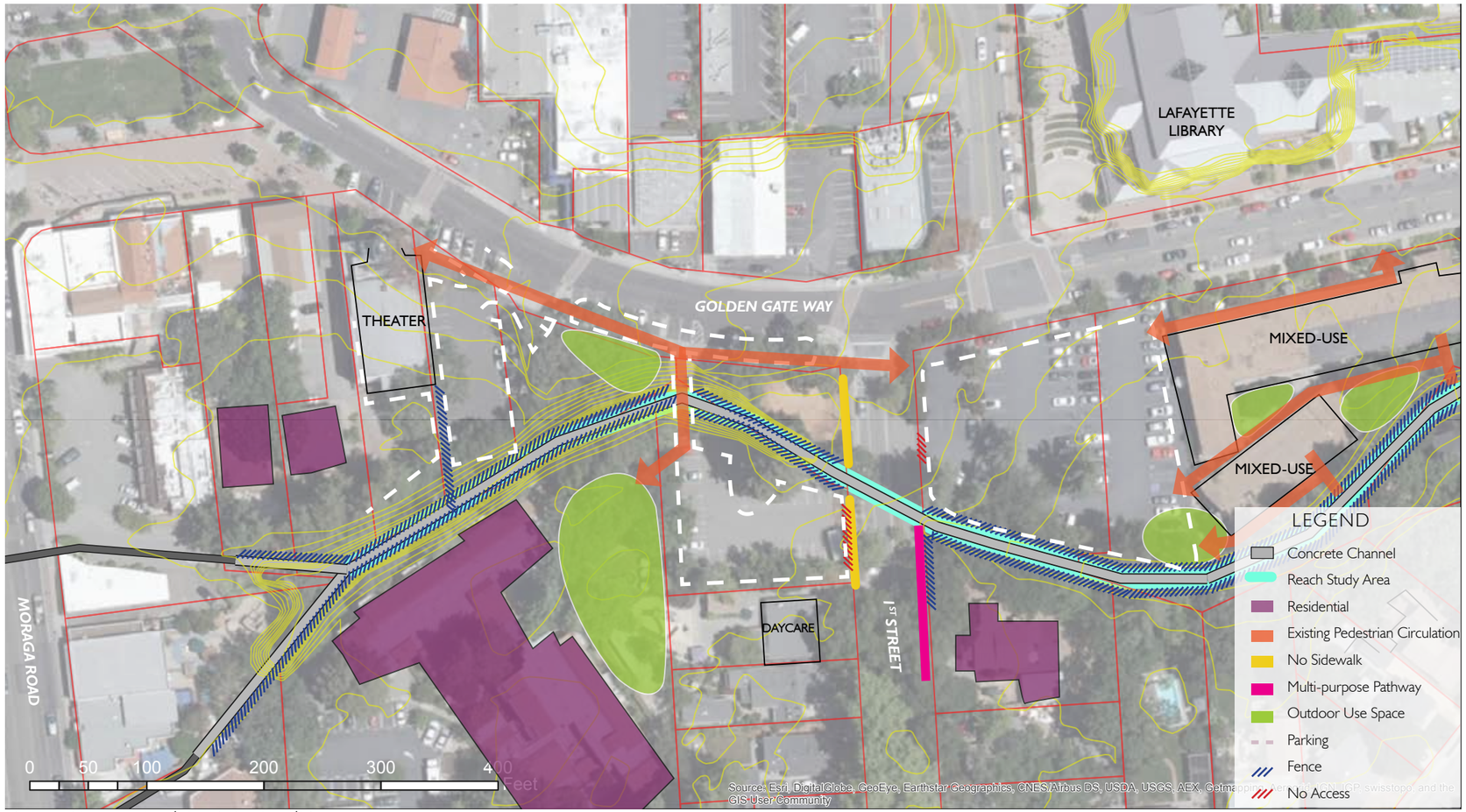

Figure 3-12: East Reach 1 Existing Conditions

KEY MAP

Parking access and pedestrian link to senior residence garden

EAST REACH 1 - LAFAYETTE CREEK (CHANNELIZED)

Creek Conditions

A deep concrete U-channel, surrounded by a cyclone metal fence topped with barbed wire, extends the entire length of East Reach 1 segment. The concrete U-channel often results in dangerously high creek velocities within this segment during rain events. Additionally, the height and depth of the channel pose a public safety risk, requiring the channel to be secured with the fence. Steep creek bank slopes are found along an approximately 400-foot section at the west end of this reach, which leads to the edge of the concrete creek channel.

The cyclone fence topped with barbed wire creates a harsh and unwelcoming visual of the creek, although the tall trees along the creek bank mitigate this effect somewhat. In contrast, since this is a relatively quiet area of the city, the creek and the sound of moving water can be easily heard, creating a pleasant auditory experience.

At its widest points, the 100-year Flood Zone extends approximately 50-100 feet from both creek banks along this section. Parking lots and limited portions of some structures are located within the Flood Zone. Overall, the U-channel is effective for flood control.

The Contra Costa County Flood Control and Water Conservation District (Flood Control District) holds an easement, and maintains, the channelized segments of the creek.

Land Use Context

Some of Lafayette's oldest buildings are located in this district and include the Pioneer Store Buildings, and Wayside Inn. The Downtown Specific Plan (DSP) identifies this area as the Plaza District, which is characterized by an eclectic mix of civic, retail, commercial and residential uses anchored by Lafayette Plaza, and the Lafayette Library and Learning Center. Elam Brown donated the Lafayette Plaza site, to the city of Lafayette in 1852; this site was the City's first public space. The plaza is used for public events such as outdoor concerts and wine tasting events. Historic buildings, some of the oldest in Lafayette, front the Plaza.

In the DSP there is a park proposed across from the Library in what is now a parking lot for mixed-use buildings near the intersection of Golden Gate Way and 1st Street.

Pedestrian paths are currently limited to the sidewalks along Golden Gate Way, and the north and south sides of the creek can be accessed via a parking lot located adjacent to the senior community of Chateau Lafayette. Improved pedestrian and bicycle connectivity is one of the primary goals of the DSP for East Reach 1, 2 and 3.

Outdoor and Pedestrian Use Space

On the east side of the theater, just above the creek, a small outdoor space is located near the parking spaces for the former Lafayette Pet Shoppe, which has a circular bench around a ginkgo tree. The ginkgo tree is not thriving because of the shady conditions created by the mature oak trees. The planting beds along the fence line have been neglected, and are predominantly compacted bare dirt with exposed drip irrigation lines. Furthermore, dumpsters are also located in this area, making the area uninviting for relaxing outdoor use.

Near the mixed use area, at the south edge of the parking lot, is a picnic table located above the creek. An outdoor use site adjacent the channel can be reached via a walkway, through an interior courtyard in the mixed use buildings.

The senior apartment complex, Chateau Lafayette, has developed a garden area adjacent to the creek. A bridge crossing the creek from Golden Gate Way provides access to a private parking lot and pedestrian access to the Chateau Lafayette garden area.

The pedestrian creek experience is limited to the sidewalk area along Golden Gate Way.

Pioneer buildings.

Parking off Golden Gate Way

Park Theater.

Lafayette Library and Learning Center.

Creek channel velocity is dangerous during rain events.

Pedestrian walk adjacent to creek is unused.

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EAST REACH 1 - LAFAYETTE CREEK (CHANNELIZED)

Biological Conditions and Features

Mature tall trees, which demarcate the location of the creek, and which can be seen over the rooftops of buildings along Mt. Diablo Blvd. and Golden Gate Way, are integral to the character of East Reach 1 and its neighborhoods.

Trees located along this section of the creek include native as well as some non-native tree species. Similar to the North Reach which has an abundance of redwood trees, redwoods are fairly common along East Reach 1. There are also several significant valley oaks and live oaks in this segment.

Invasive non-native plant species are more limited along this section of the creek. The predominant invasive plant is English ivy (*Hedera helix*), located primarily along the north side of the creek.

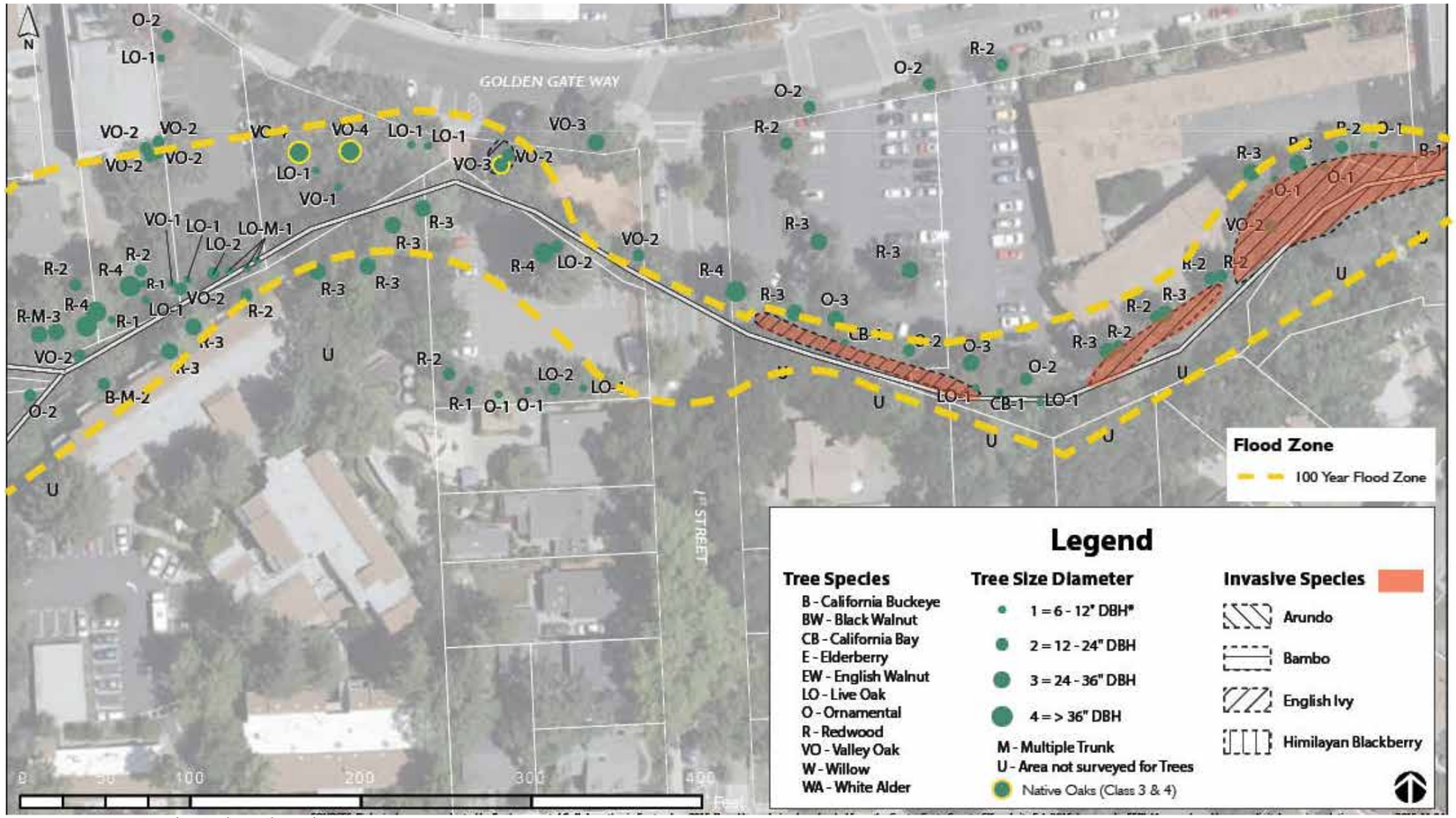


Figure 3-13: East Reach 1 Biological Conditions

Mature trees highlight presence of the creek

Treetops indicate creek corridor behind building

EAST REACH 1 - LAFAYETTE CREEK (CHANNELIZED)

OPPORTUNITIES

Public Access and Use

The Plaza Way Overlay District encompasses nine parcels between Lafayette Creek and Lafayette Plaza. This district encourages shared parking to improve parking circulation, make more efficient use of parking spaces, and provide opportunities for public access and outdoor use.

To align with the DSP pedestrian goals for East Reach 1, wayfinding elements could be incorporated along the sidewalks of Golden Gate Way to direct pedestrians to areas of historical, cultural or ecological significance. For example, wayfinding elements could direct pedestrians to a new park site proposed in the DSP in a portion of the existing parking lot south of Golden Gate Way, east of 1st Street, across from the Library. Wayfinding elements could also be used to direct pedestrians to a terrace overlooking a visually modified U-channel with walls that mimic natural rock walls of a creek. Interpretive signage at the terrace could provide natural history and ecosystem information about the creek. The Contra Costa County Flood Control and Water Conservation District would support a pedestrian path along the north side of their channel.

The senior community of Chateau Lafayette is located along this segment of the creek, and enhancing access to Golden Gate Way and the site of the proposed future park from Chateau Lafayette could enhance the outdoor and pedestrian experience for senior citizens. Improved pedestrian access could also improve access to the library for the senior citizen community. Specifically, east-west pedestrian pathways could be added along the north side of the creek to link Chateau Lafayette to both Moraga Road and Golden Gate Way. Linking Chateau Lafayette to the site of the future park and to the library via a creekside pathway would facilitate community involvement with the residents of Chateau Lafayette.

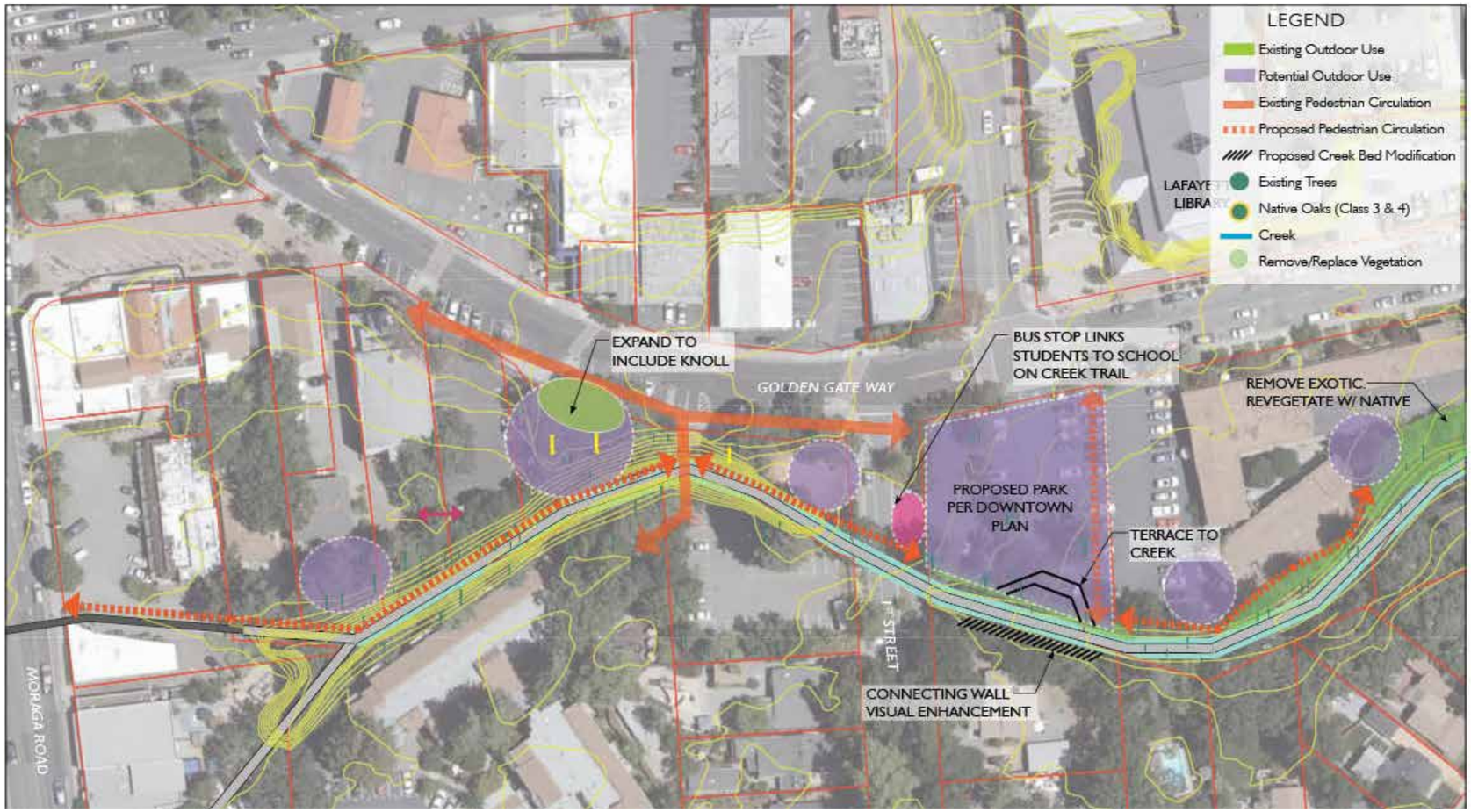


Figure 3-14: East Reach 1 Opportunities

In addition to the proposed park, there are two other outdoor use opportunities located along the north side of the creek where mini pocket parks could be created. The first opportunity is located along the creek in what is currently an empty lot along Golden Gate Way. The second site is where the circular bench and the Ginkgo Tree are located; this area could be expanded to include the knoll above the creek into a small pocket park. This potential knoll site has several significant valley oaks which could be integrated into a pocket park where people could meet either before or after visiting the downtown.

The concrete channel wall could be enhanced as shown here.

Unused space could be improved as a creek amenity

Two additional outdoor use areas exist near the mixed use buildings which could be expanded. At the end of the parking lot, and adjacent to the mixed used retail / housing buildings, a picnic table has been placed along the upper bank of the creek. This area could be enhanced by creating a larger green buffer zone between the picnic table and the parking lot, to provide a more serene outdoor experience; it is very easy to hear the creek from this location since the area is relatively quiet. There is an existing pedestrian path that extends along the backside of the buildings which could potentially be expanded to connect with an unused outdoor space beyond the inner courtyard of the mixed use buildings. Connecting the existing picnic area to the unused outdoor space could create a short greenery-filled walking loop which could be used by business customers and residents.

To align creek restoration activities with the DSP goal of creating a pedestrian and bicycle friendly area along Plaza Way and Golden Gate Way, raised crosswalks and intersections that were recently incorporated along Plaza Way could be extended into this area.

Habitat Restoration

The Flood Control District adopted “The 50-Year Plan” to convert its first generation infrastructure, such as the concrete flood control channel located in East Reach 1 and East Reach 2, to second generation facilities consisting of more natural creek conditions. The remaining service life of these first generation facilities is 30 to 50 years, and the objective of the Flood Control District is to begin the planning process to replace this essential infrastructure. Implementation of The 50-Year Plan is contingent on support of the affected jurisdictions and funding.

In 2014 the Flood Control District completed a Condition Assessment Report for their channelized section of Lafayette Creek, and assigned a condition rating of “3” (Good). Recommended actions included removing trees and debris away from the fencing and establishing an ongoing maintenance program for the fencing.

The 50-Year Plan supports the concept of replacing the channel with a more natural flood protection facility integrated into a redeveloped urban landscape. Such an enhancement plan for the East Reach could involve constructing a bypass pipe, an upstream detention basin, or increased upstream infiltration of storm runoff. Implementation would require an extremely long planning horizon.

A more near term opportunity could be converting the concrete channel bottom to a natural creek bed to support a more natural riparian environment. Such concepts have been implemented elsewhere and are supported by some of the regulatory agencies. A natural creek bed has a varied bottom, and typically contains pools of varying depth that support aquatic life, provide foraging opportunities, and allow for movement by fish, amphibians and other wildlife. It allows for establishment of native emergent vegetation and rooting of larger riparian trees and shrubs such as willow, that provide some level of stability to the natural creek system. A concrete channel bottom contributes to higher flow velocities during runoff periods, preventing establishment of any native vegetation, stripping and flushing native material that would otherwise move along and contribute to the complexity of the bottom of a natural creek channel, and leaving no pools or other refuge areas for fish and aquatic species to remain within the channelized reach. Complete removal of the concrete channel bottom may, however, create conditions leading to undercutting of the channel walls and de-stabilizing the channel in this area.

The quality of water inflows into the creek along East Reach 1 could be improved by creating bioretention areas along the upper banks near the parking lot areas closest to the creek banks. The bioretention areas could also serve as a visual buffer and screen of the barbed wire fence located along this segment of the creek, and possibly even a learning opportunity if interpretive signs were used to describe the vegetation used in the bioretention area, and the cleansing value a bioretention area provides.

In conjunction with development of paths on the north side of the channel, it may be possible to explore options to create terraces along the banks of the channel, and modify the channel walls or bottom to create more visually appealing conditions. Terraces would allow people better visual access, and potentially, physical access to the creek, and would enable riparian plants to be planted along the banks, thereby restoring some habitat conditions. Similar proposals, endorsed by the Army Corps of Engineers, have been made as part of the master plan for the channelized Los Angeles River. This undertaking would require additional hydrology studies to evaluate the impact of any proposed changes.

The English ivy should be removed from this section of the creek, and the area subsequently should be replanted with native plants.

EAST REACH 2 - LAFAYETTE CREEK (CHANNELIZED)

SUMMARY

Location

- The area between the creek and Golden Gate Way is located in the Plaza District.
- South of Golden Gate Way, near 2nd Street.

Creek Conditions

- The 100-year Flood Zone extends approximately 150 feet at its widest from the creek bank.
- Fenced concrete channel conditions; natural creek areas begin at the east end of this segment.

Land Use Context

- Retail, office and mixed-use buildings are located on the north side of the creek.
- Single-family residential is located on the south side of the creek.

Biological Conditions

- There is a significant oak tree at the 2nd Street intersection with the creek.
- Non-native ornamentals are the predominant tree species along this segment of creek, and redwood trees are the second most common tree.
- Non-native invasive plants are found predominantly on the north bank.

Outdoor And Pedestrian Use Space

- Existing outdoor public use space is located only along the north side of the creek.
- Backyard fences of homes are located along the south side of the creek.

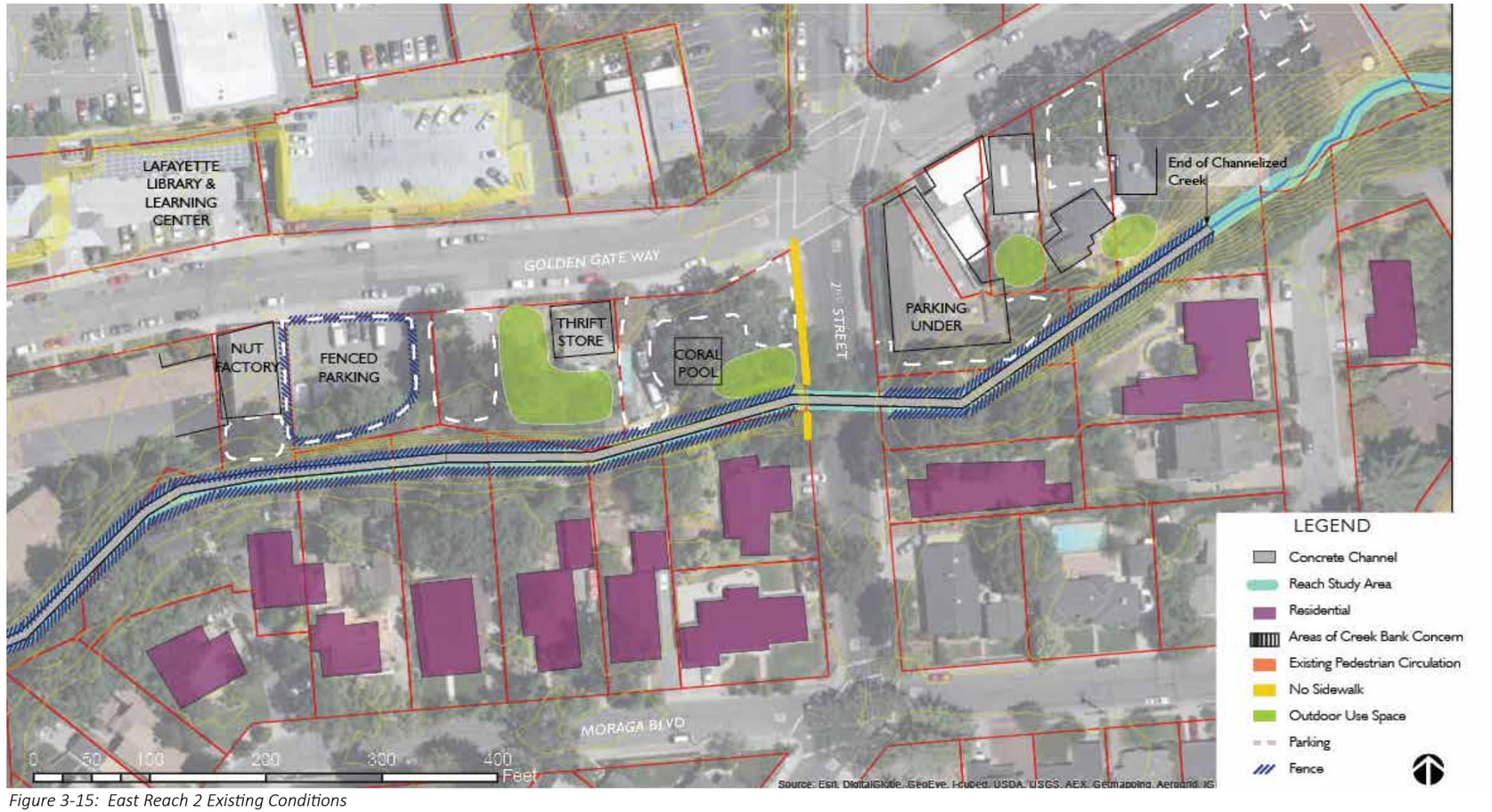


Figure 3-15: East Reach 2 Existing Conditions

Opportunities

- Create new pedestrian access on the north side of the channel and connect to the creek via 2nd Street
- Create an overlook at 2nd Street
- Remove non-native vegetation
- Modify / enhance the surface of the concrete channel to more closely mimic a natural creek channel and/or create more natural creek bed conditions
- Celebrate the majestic oak located on the Coral Pool property

KEY MAP

EAST REACH 2 - LAFAYETTE CREEK (CHANNELIZED)

Creek Conditions

East Reach 2 is a section of Lafayette Creek that is a little more than two blocks from Mt. Diablo Blvd., between Golden Gate Way and Moraga Blvd. and runs parallel to these streets.

Continuing from East Reach 1, the majority of East Reach 2 is fenced off with a barbed wire-topped cyclone fence, and is contained in a concrete channel. At the east end, as it transitions to East Reach 3, the concrete channel ends and natural creek conditions begin. Commercial buildings block almost all visual access to the creek along East Reach 2.

The banks of the creek are quite steep, and mostly densely vegetated.

The 100-year Flood Zone extends approximately 100-150 feet from both creek banks at its widest points.

Land Use Context

The Contra Costa County Flood Control and Water Conservation District (Flood Control District), has an easement over the channelized section of East Reach 2, and maintains this section.

East Reach 2 is contiguous with East Reach 1, and creating pedestrian and bicycle friendly streets continues to be a DSP goal in this area. Although contiguous with East Reach 1, no single-family residential buildings are located along Golden Gate Way on the north side of the creek; only commercial, retail, mixed-use buildings and parking are located north of the creek, whereas the south side of the creek has residential properties.

Near the east end of East Reach 2, the creek transitions from channelized to natural creek conditions behind the parking lot of a multi-family building. There is an informal path to the creek bank at this location.

The public interface with the creek is primarily at the creek crossing under 2nd Street, and there is no sidewalk along the west side of 2nd Street, limiting creek views at this site.

Several residential structures and commercial buildings are located within the 100-year Flood Zone.

Outdoor Use and Pedestrian Use Space

The largest potential outdoor use spaces in East Reach 2 are located in parking lots. The Thrift Store parking lot is the only area that provides public access to the creek, however the creek is still inaccessible because of the flood control fence. The Thrift Store site has several large Redwood and pine trees which provide a nice canopy. Coral Pool, located at the corner of 2nd Street, uses its creekside location for parking, and the parking area is fenced off and not accessible by the public. There is some public interface with the creek where 2nd Street crosses the creek, but there is no sidewalk along the west side of 2nd Street.

This is a quiet area of downtown, and the sound of the creek moving through the channel can be easily heard.

Tree cover at creek corridor near the Thrift Store parking lot.

Thrift Store outdoor sales area adjacent to the creek.

Fences block views and interaction with the creek.

2nd Street lacks a sidewalk.

EAST REACH 2 - LAFAYETTE CREEK (CHANNELIZED)

Biological Conditions and Features

There is ample tree cover along this segment of the creek, however non-native ornamental trees are the predominant tree type, comprising approximately 40% of the tree total. Redwoods are the second most prevalent tree type.

There are large valley oak trees located on the Coral Pool property, which are remnants of the riparian woodland, and a significant natural resource.

Invasive non-native plant species are not as prevalent along this section of the creek, and the predominant invasive plant is English ivy.

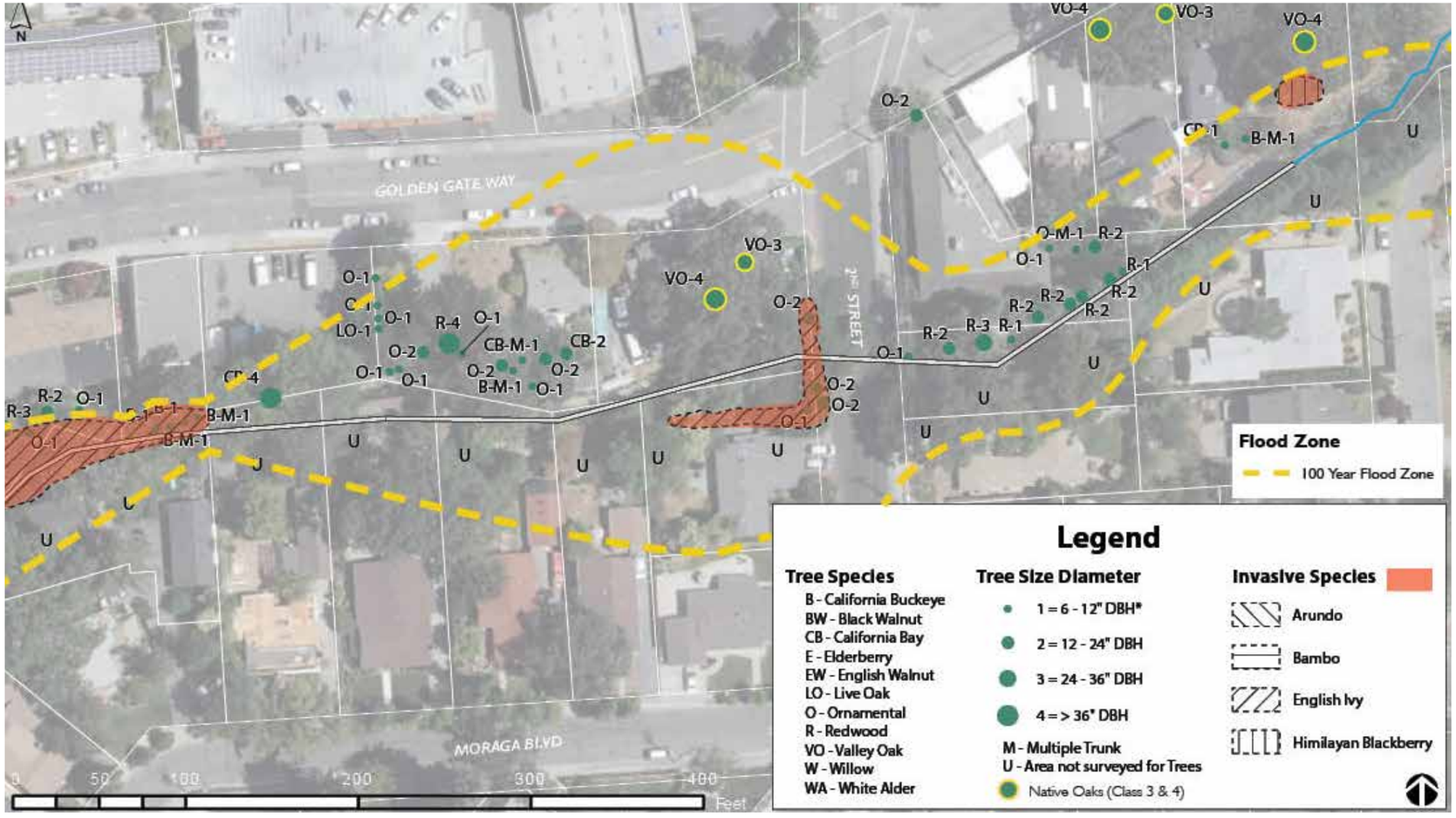


Figure 3-16: East Reach 2 Biological Conditions

Majestic valley oak along the creek on the Coral Pool property.

EAST REACH 2 - LAFAYETTE CREEK (CHANNELIZED)

OPPORTUNITIES

Public Access and Use

East Reach 2 is an important area that connects Lafayette's eastern creek gateway, beginning with East Reach 3, to East Reach 1 which includes the historic Plaza Overlay District.

Adding a sidewalk along the west side of 2nd Street would help improve pedestrian circulation and access to the creek in this area. Improved pedestrian circulation with the addition of another sidewalk along 2nd Street could lead to an opportunity to create a pocket park near the southwest corner of 2nd Street and Golden Gate Way. The magnificent large oak tree located at this site would provide shade for a seating or picnic area. Additionally, this location might be ideal for a creek overlook with interpretive signage. Since the property is privately owned by Coral Pool, a public-private partnership would likely be necessary to develop this site for public use.

Modifying the surface of the concrete channel at the Golden Gate Way and 2nd Street intersection in some manner would improve the visual appeal of the creek, and maximize the creek experience for the community. Some type of visual barrier would also be important to minimize the visual impact of the barbed wire-topped cyclone fence, and to maximize the visual experience of the creek for the community.

The Flood Control District would support development of a pedestrian path along the north side of their channel as parcels are redeveloped. Opportunities should also be explored to create public use area near the Valley Oak trees when redevelopment occurs.

Habitat Restoration

The majority of this section of the creek is within a concrete channel or culvert, which presents a near-term habitat restoration challenge for the creek. Nonetheless, habitat restoration is possible along the tops of creek banks; removal of the English Ivy and replacing it with native riparian plants would improve habitat and also increase visibility of the creek.

SF Bay Regional Water Quality Control Board and California Department of Fish and Wildlife support modifying the bottoms of flood control channels to expose the natural creek bed, as discussed in the previous section on East Reach 1.

Because the parcels along this segment of the creek are privately-owned, habitat restoration along the upper banks of this section of the creek would require the cooperation of private land owners.

Figure3-17: East Reach 2 Opportunities

EAST REACH 3 - LAFAYETTE CREEK & LAS TRAMPAS CREEK

SUMMARY

Location

- Located at the eastern end of the Plaza District
- Eastern gateway into Lafayette; South of the Mt. Diablo Blvd. and Golden Gate Way intersection and Gazebo Park.

Creek Conditions

- Confluence of Lafayette and Las Trampas creeks
- The 100-year Flood Zone extends approximately 100 feet at its widest point from Lafayette Creek.
- Natural creek conditions exist along the entire length of this section except for the drop structure at the eastern end.

Land Use Context

- The City of Lafayette, Contra Costa County Flood Control District, and East Bay Regional Park District own several parcels along East Reach 3.
- Commercial, office, multi-family residential buildings and parking lots are located on the north side of the creek.
- Single-family residential parcels are located on the south side of the creek.

Biological Conditions

- Willows (*Salix lasiolepis*) are the most common species along this segment of creek.
- Non-native invasive plants are not very prevalent along this segment of the creek.

Outdoor And Pedestrian Use Space

- The Briones Las Trampas Trail crosses the creek south of Golden Gate Way.
- Leigh Creekside Park is located east of Las Trampas Creek, with no direct access from the trail.

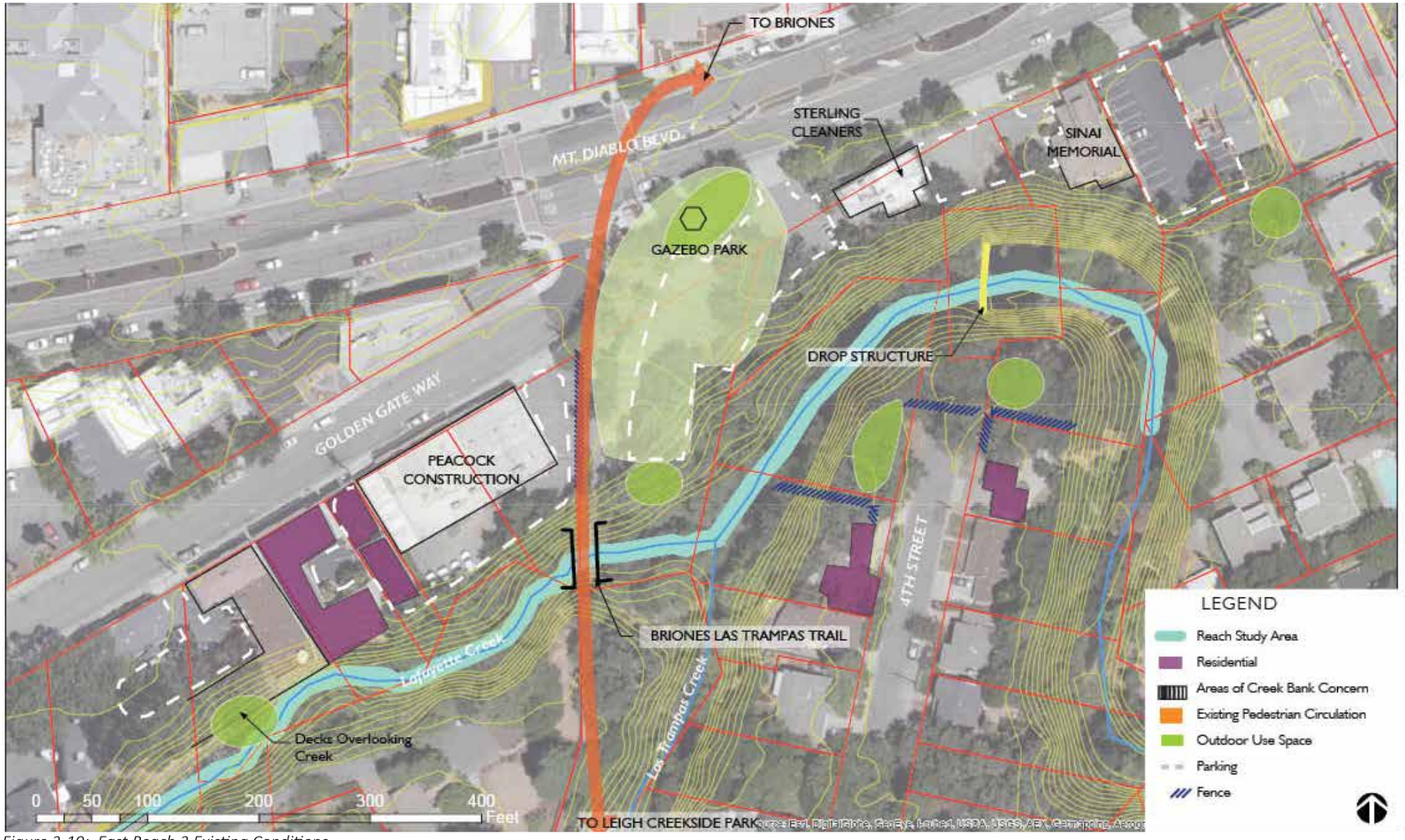
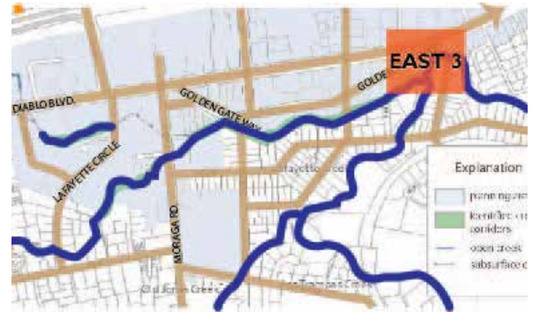


Figure 3-19: East Reach 3 Existing Conditions

Opportunities

- Create thematic wayfinding elements linking the gazebo to the creek
- Improve pedestrian access to the creek via stairs
- Connect pedestrians to the existing Briones/ Las Trampas Trail, and expand the trail network along the creek bank
- Reintroduce native species



KEY MAP

EAST REACH 3 - LAFAYETTE CREEK & LAS TRAMPAS CREEK

Creek Conditions

The confluence of Lafayette Creek and Las Trampas Creek is located in East Reach 3. East Reach 3 is the farthest east of the creek study areas, and is located near the intersection of Mt. Diablo Blvd. and Golden Gate Way.

East Reach 3 has natural creek conditions, and is highly vegetated with great tree overstory. It is also the only area along the creek that has a fairly flat floodplain area immediately adjacent to the creek. Above this floodplain, and leading from the parking lot behind Gazebo Park, the slope is relatively gentle, whereas in other areas further downstream, and above the Drop Structure, the slope is much steeper.

The 100-year Flood Zone extends approximately 100 feet from Lafayette Creek at its widest point.

Land Use Context

Commercial, office, apartment buildings and parking lots are located on the north side of the creek, whereas the south side of the creek is predominantly residential. At the confluence of Lafayette Creek and Las Trampas Creek, and along the west side of 4th Street, all the homes are within the 100-year Flood Zone. None of the businesses or apartments on the north side of the creek are within the Flood Zone, although some parking lots do fall within this zone.

Sinai Memorial Chapel is located on the north side of the creek near the drop structure. The sound of water running over the drop structure can be heard from the back of the Sinai Memorial parking lot.

The back area of the parking lot at Sterling Cleaners is close enough to the creek, and high enough, to provide nice views.

There is an undeveloped property owned by the Contra Costa County Flood Control District at end of 4th Street.

Leigh Creekside Park is directly south of this reach.

Outdoor and Pedestrian Use Space

Along Mt. Diablo Blvd. at the intersection of Golden Gate Way, the Gazebo Park includes a small public use area, with a bike trail connecting to the East Bay Regional Park District bridge and the Las Trampas / Briones Trail.

The gazebo is a landmark along Mt. Diablo Blvd. The Lafayette Garden Club maintains the landscaping in this garden area, bringing members of the community together. A small creekside garden and seating area has been created adjacent to the parking lot near the Gazebo.

EAST REACH 3 - LAFAYETTE CREEK & LAS TRAMPAS CREEK

Biological Conditions and Features

Only one type of invasive plant was observed in this area, Himalayan blackberry (*Rubus armeniacus*), and it is concentrated near the bridge.

Several significant oak trees are located in this area; trees in this segment of the creek include willow (*Salix lasiolepis*), valley oak (*Quercus lobata*), live oak (*Quercus agrifolia*), and English walnut (*Juglans regia*).

Figure 3-20: East Reach 3 Biological Conditions.

EAST REACH 3 - LAFAYETTE CREEK & LAS TRAMPAS CREEK

OPPORTUNITIES

Public Access and Use

The parking lot area adjacent to the Gazebo is proposed as a future park site with picnic tables and other park facilities, as part of the Downtown Specific Plan. Thematic wayfinding elements and public art could be used to align the park entry to the creek area and trails from Golden Gate Way and Mt. Diablo Blvd.

The flat floodplain areas in East Reach 3 make it ideal for public use. This feature, combined with natural creek conditions, make it an ideal area to highlight local flora and fauna via interpretive signage and an extended network of pathways along the creek. A controlled access path could be created to allow the public to safely access the water near the confluence of Lafayette and Las Trampas Creeks.

Stairs could be created leading to a lower terrace adjacent to the bridge to expand access to the creek in this area. Views from the bridge could be enhanced by selectively pruning to open views to the creek.

At the back of the Sinai Memorial Chapel parking lot, the sound of the creek running over the drop structure is soothing, and perhaps a small garden area could be developed at this location, buffered from the parking lot with vegetation, which could allow the community to enjoy the sound of the water cascading over the drop structure from an easily accessible site.

Habitat Restoration

There are few non-native invasive plant species located along East Reach 3. As such, only limited restoration is required in this area, with the exception of the removal of a small area of Himalayan blackberry and selective pruning to improve views. It may be an ideal area for restoring habitat for the western pond turtle and other native wildlife, and reintroducing wildlife species to the area.

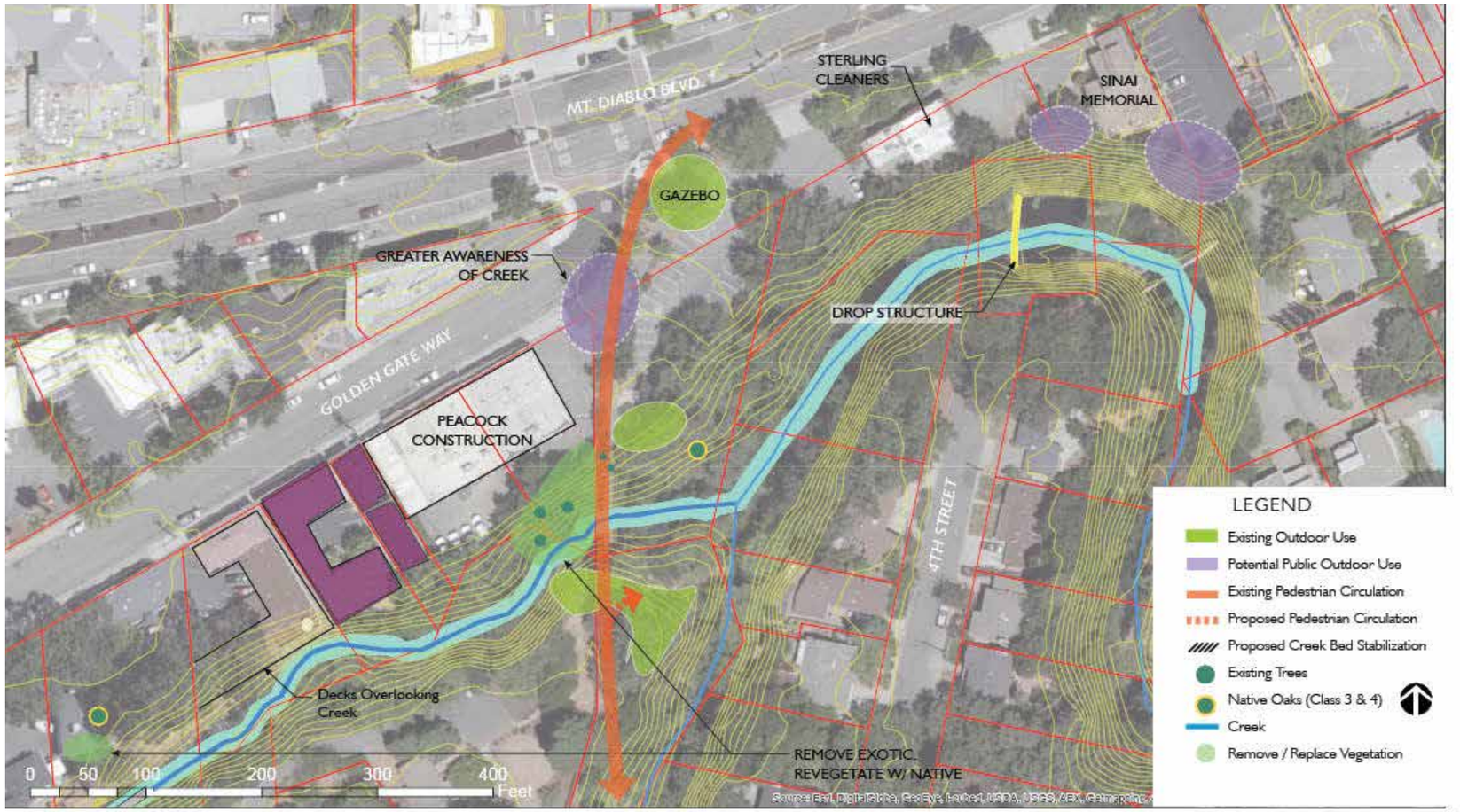


Figure 3-21: East Reach 3 Opportunities

Art can highlight presence of the creek

Possible creek access near EBRPD bridge.

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APPENDIX B: COMMUNITY ENGAGEMENT PLAN

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APPENDIX B:

COMMUNITY ENGAGEMENT PLAN

PURPOSE:
The purpose of the Engagement plan is to describe a strategy to maximize community awareness of and participation in the Lafayette Downtown Creeks Preservation, Restoration and Development Plan, and guidance to implement this strategy. Various sections of the Plan will be revisited as the planning process progresses.

Project Goals:
The purpose of the Lafayette Downtown Creeks Preservation, Restoration and Development Plan ("Downtown Creeks Plan") is to further the goal of protecting and enhancing Lafayette's downtown creeks. This goal was established by the City of Lafayette in 2012 when it adopted the Downtown Specific Plan (DSP). The DSP articulates a vision to preserve and enhance its small town character while guiding change that will occur over the next 20 years. In addition, the City adopted the Downtown Design Guidelines in 2014 to provide more detailed guidance to direct development in the downtown area and to more fully develop the visions and goals for the downtown creeks. Thus, the Downtown Creeks Plan will establish a long-term strategy for achieving the vision set forth in the Downtown Specific Plan and Design Guidelines for downtown creeks

Engagement Goals:
1. Increase community awareness of the planning project
2. Offer a range of communication and engagement tools to facilitate input;
3. Obtain community buy-in and consensus to support the plan;
4. Build upon and respect previous outreach efforts to date (Downtown Specific Plan, Downtown Design Guidelines, etc.);
5. Build partnerships for implementation and stewardship of improvements; and
6. Partner with the Lafayette Creeks Committee to play an active role in community engagement, as they advise the City Council on creek issues.

Objective of Plan Document
- Identify key opportunities for enhancing creek amenities and habitats and estimate their cost;
- Document the outreach process for future grant applications;
- Maximize ability of the plan to be utilized opportunistically;
- Provide clear direction on priority areas;
- Create a document which will be useful in securing funding for creek improvements;
- Create a document which is easily used and implemented by City staff;
- Identify projects and actions that can be incrementally implemented from public and private efforts; and
- Identify maintenance, stewardship and funding responsibilities.

TARGET AUDIENCES:
Focus should be on members of the local community. List of potential targeted audiences might include:

Community at Large:
- Local residents
- Adjacent and nearby businesses and commercial site owners along the creek corridors
- Youth, tweens, and teens
- Seniors and older adults
- Schools (Happy Valley Elementary, Lafayette Elementary School, Stanley Middle School, Acalanes High School, Campolindo High School)
- Church (United Methodist Church)
- Potential donors/partners (Lafayette Community Foundation, Historical Society, Sustainable Lafayette, others)
- Environmental Groups (Walnut Creek Watershed Council)

Key Stakeholders:
- Development Community
- Regulatory Agencies

  o Contra Costa County Flood Control District, (Paul Detjens, Senior Civil Engineer, pdetj@pw.cccounty.us, 925.313.2394)

  o East Bay Regional Parks District, (Brian Holt, Advanced Planning Principal Planner, bholt@ebparks.org, (510) 544-2623)

  o San Francisco Bay Regional Water Quality Control Board (Bruce Wolf, bwolf@waterboards.ca.gov, (510) 622-2300; Kathryn (Katie) Hart, Kathryn.Hart@waterboards.ca.gov, (510) 622-2356)

  o California Department of Fish and Wildlife, (Robert Stanley, Robert.stanley@wildlife.ca.gov, (707) 944-5573)

  o Army Corps of Engineers, San Francisco District, (Katerina Galacatos, South Branch Chief, Katerina.Galacatos@usace.army.mil, (415) 503-6778)

- City Parks, Trails and Recreation Department as potential joint development partner and maintenance entity, (Jennifer Russell, Parks Trails & Recreation Director, jrussell@ci.lafayette.ca.us)

METHODS FOR INCREASING AWARENESS:

Print and Online Media Outlets:
The City will distribute project information through the following outlets:
- City to host "Downtown Creeks Plan" (Project) Webpage. (Link and QR code to be included on printed materials)
- City to put link to Project Webpage on City Creeks Webpage (http://www.ci.lafayette.ca.us/city-hall/city-departments/public-works/creeks)
- City to put link to Project Webpage on Creeks Committee Webpage (http://www.ci.lafayette.ca.us/city-hall/commissions-committees/creeks-committee)
- City to replace "Development of Downtown Creeks RFP" link with the Project Webpage link on the Quick Links for Public Works & Construction (http://www.ci.lafayette.ca.us/city-hall/quick-links/public-works-construction)
- The City generally provides public notice to all property owners within 300-feet of a property a minimum of 10-days in advance of a public hearing. The notification area is expanded to 500-feet for properties within the LR-5 and LR-10 zoning districts (not applicable in this circumstance). When more than 1,000 properties are impacted then individual public notice is not required. Based on the large area that this plan covers, we will rely on providing notices to property owners that abut a creek, but not a larger distance at this time, as the 300-foot distance will often result in notifying property owners from the other side of Mt. Diablo Blvd. These notices will be provided prior to each Community Meeting. After the plan is drafted and it is reviewed by the Planning Commission and City Council, we will have additional notification requirements to publish legal advertisements in the newspaper. These requirements will be revisited closer to that time period.
- The Weekly Roundup (Steven Falk, City Manager, sfalk@ci.lafayette.ca.us). Deadline is generally by noon on Friday the day you want the message included; however, the Weekly Roundup is not

published when the City Manager is out of the office, so plan to submit it the week before.

- City Facebook Page (Tracy Robinson, trobinson@ci.lafayette.ca.us)
- Flyers to be distributed to Chamber of Commerce, City offices and Creek Committee members

Email Blast Lists:
The City will distribute project information using the city-maintained Downtown Creeks Plan email list (Populated by sign in sheets and Downtown Creeks Plan webpage). The City will distribute project information to the sponsors of the following electronic media outlets and request that they distribute this information to their readership or membership:

- Lafayette Chamber of Commerce email list (Jay Lifson, Executive Director, jay@lafayettechamber.org)
- Lafayette Community Foundation (info@lafayettecf.org)
- Lafayette Historical Society, they have a blog that is active (http://lafayettehistory.org/contact-us/)
- Sustainable Lafayette email list (social media contact: Pam Palitz, pampalitz@gmail.com)
- Lafayette Homeowners Council (info@lafayettehomeownerscouncil.org)
- Lafayette Environmental Task Force (Megan Canales, Assistance Planner, mcanales@ci.lafayette.ca.us)
- Lafayette Parks, Trails and Recreation Commission (Jennifer Russell, Parks Trails & Recreation Director, jrussell@ci.lafayette.ca.us)
- Walnut Creek Watershed Council, (Heidi Petty, Watershed Coordinator, Contra Costa Resource Conservation District rodeocreek@comcast.net)

Online and Print Media Outlets for Cross-Posting Articles and Events:
The City will distribute project information to the sponsors of the following electronic media outlets and request that they distribute this information to their readership.

- Bay Nature (http://baynature.org/submissions/)
- East Bay Times (http://www.eastbaytimes.com/contact-us, srichards@bayareanewsgroup, jmodenessi@bayareanewsgroup, dcurr@bayareanewsgroup)
- Lamorinda Patch (http://patch.com/california/lamorinda)
- Sustainable Lafayette (http://www.sustainablelafayette.org/) (website contact: Gailene Nelson, gailene@sustainablelafayette.org)
- Lafayette Library and Learning Center (http://www.lafayettelib.org/foundation/)
- Nextdoor Lafayette – USN sgoetz@ci.lafayette.ca.us, PW 916Gl17522 (https://nextdoor.com/events/calendar/ca/lafayette/?utm_medium=events_public_page&utm_source=events_public_page)
- Lamorinda Sun (http://www.contracostatimes.com/lafayette), srichards@bayareanewsgroup.com
- Lamorinda Weekly (http://www.lamorindaweekly.com)
- Lafayette Today (Alisa Corstorphine, Editor/Publisher, editor@yourmonthlypaper.com
- Lamorinda Web (http://lamorindaweb.com/submit-an-event)
- Beyond the Creek (questions@beyondthecreek.com)
- Walnut Creek Watershed Council, (Heidi Petty, Contra Costa Resource Conservation District, rodeocreek@comcast.net)
- Contra Costa Watershed Forum (http://www.cocowaterweb.org/) contact Linda Zimmerman, 925-313-2000
- School Websites/Newsletters/PTA
- Happy Valley Elementary (no contact currently available)
- Lafayette Elementary (no contact currently available)
- Stanley Intermediate (Please email submissions for the newsletter to wildcatweeklyeditor@gmail.com by Thursday at 5:00 PM.)
- Acalanes High School (Acalanes Blueprint, no contact currently available)
- Campolindo High School (La Puma, Submit Letter button)

Potential Links at Events:
Include: Informational Project Flyers/Community Meeting Flyers, sign-in sheets for those interested in being added to email blast lists.

- Janet Thomas Water Series at Lafayette Library and Learning Center (August 16, 2015)
- reek Day Event (September 27, 2015)
- Art & Wine Festival – City Booth and Sustainable Living Booth (September 19, 2015)
- Contra Costa Watershed – Quadrennial Creek and Watershed Symposium (December 3, 2015)
- Earth Day - with creek tours (April 2016)
- Other local events (flyers with branding, messaging, logo)

Lower Priority Items to Consider:

- Survey (Online/Mailers) – Reserve for a later date if needed
- (Low Priority) Social Media “Parks and Recreation” Facebook

PROJECT BRANDING / IDENTITY:
QR Code to be created for all printed materials linking to project webpage. Prepare project logo for use in all projects documents and noticing (online and print)

Incorporate:

- Creeks
- Lafayette - Small Town Character
- Sustainability

COMMUNITY MEETINGS:
Three (3) Community Meetings to be held midweek (Tuesday or Wednesday) in the evenings. Preferred locations: Lafayette Library and Learning Center or Lafayette Veterans Memorial Center. If a deeper dive is needed regarding one or more creek reaches, option to meet on site or hold focus group and/ or staff meeting. Members of the City of Lafayette, Creeks Committee and Gates + Associates will attend. All Community Meetings will be noticed as Creeks Committee meetings.

All Meetings Should Include:
- Project Branding Elements for project recognition
- Sign in sheets/Email list sign ups and attendance record
- Agenda and Purpose of Meeting
- Clear ways to Participate / Variety of Input Options
- Summary of Input
- Next Steps/Ways to stay involved (Webpage links, upcoming event flyers, Commission and Council, etc.)

Community Meeting #1:
- What (The Event Title): Community Meeting #1 – Help us identify opportunities to protect and celebrate downtown creeks.
- When (Date/Time): October 6th, 7 pm
- Where (Location): Veterans Memorial Center
- Why (Purpose of meeting): Solicit community input on the opportunities and constraints associated with creek corridor plan.

Agenda:

1. Introduction	City Staff
2. Project Overview a. History b. Goals c. Schedule	City Staff/Creeks Committee
3. Purpose of Meeting	Gates
4. Presentation a. Opportunities and Constraints b. Summary of Reach characteristics	Gates
5. Station Breakout a. Discussion of Reaches	Community
6. Report Out/Summary of Input	Gates, Creeks Committee, City Staff
7. Next Steps	Gates

Meeting Materials:
Setup
- Tables and chairs – plan for 50 attendees (venue to provide)
- Room/AV Setup (Gates to provide layout)
- AV cart with power strip and extension cords, Screen, 2 podiums with mikes, 2 wireless mikes, one lapel mike, 2 easels, plug-in and wireless internet access (venue to provide)
- Snacks/Water/Cups (City Staff to provide)

Overall Materials (provided by Gates + Associates)
- Sign-in sheets
- Agenda
- Powerpoint for presentation
- Boards as appropriate
- Reference materials (Downtown Specific Plan, Downtown Design Guidelines, etc.)
- Comment box
- Name tags
- Flyers for next meeting

Individual Creek Reach Stations (provided by Gates + Associates)
- Graphics/boards for each station
- Sticky Notes/markers

Community Meeting #2:
When (Date/Time): February 2, 2016, 7:00 pm
Where (Location): Library
Why (Purpose of meeting): Identify preferred options and priorities

Community Meeting #3:
In lieu of Community Meeting #3, the Creek Committee will present the draft plan to the City Commissions and Committees that will be affected by the draft plan's recommendations. The presentations will include a staff report and questions for the commission/committee to answer. Commission/ Committee meetings will be announced through the methods described in the Community Engagement Plan. These meetings are scheduled as follows:

- Parks Trails & Recreation Commission, August 10, 2016, 7:00 pm
- Design Review Commission, August 22, 2016, 7:00 pm
- Downtown Street Improvement Master Plan Implementation Committee, September 15, 4:30 pm
- Parking Ordinance Committee, September 28, 2016, 5:00 pm

Stakeholder Meetings:
The City will take the lead in coordinating meetings with key stakeholder groups prior to first community meeting (mid-September). Additional meetings will be held as needed throughout the process. Stakeholder groups include property owners, development community, Chamber of Commerce and regulatory agencies.

Planning Commission/City Council
When (Date/Time): TBD
Where (Location): TBD
Why (Purpose of meeting): approve environmental document and adopt Downtown Creeks Plan

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APPENDIX C: PROJECT COSTS

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APPENDIX C

PROJECT COSTS

The projects described in this plan will be implemented incrementally over a long time horizon. The costs below are order-of-magnitude planning level cost estimates, based on recently completed projects of similar scope. Actual costs for specific reaches may vary widely, depending on a multiplicity of factors including:

- specific geological / hydrological / structural conditions of the sites
- necessity of additional hydrologic studies
- extent of permitting required, and requirements and potential competing interests of permitting agencies
- the extent of improvements included in the project - economies of scale - whether incremental, or undertaken as a whole or in conjunction with other construction
- project timing (costs over the time horizon of this plan will increase over time)
- bidding climate
- material choices and refined design elements.

Public Projects	**Cost**
West Reach	
Catalyst Project	$600,000
North Reach	
Rain gardens	$50,000 ea
South Reach	
Bulb-out / decorative crosswalk / fencing / rain garden	$300,000
East Reaches 1 & 2	
Sidewalks /bulb-outs / fencing /rain garden	$300,000
East Reach 3	
Bridge railing renovation, improvements from Golden Gate Way, creek terrace access	$450,000
Private Projects	**Cost**
North Reach	
Parking consolidation, pedestrian circulation including bridge, top of bank pathways and planting	$1,500,000
South Reach	
Removal of culvert and installation of bridge, restoration of creek channel, reconfigured parking & pedestrian pathway	$3,000,000
East Reaches 1 & 2	
Creekside pathway, pocket park, decorative fencing on channel	$600,000

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