Southport Setback Levee Recreation Trail Report

West Sacramento, CA
September 12, 2017

CITY OF WEST SACRAMENTO

HDR

DOUGLAS ENVIRONMENTAL

DESIGNWORKSHOP

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Contents

Acronyms and Abbreviations iii

1 Introduction 1
- 1.1 Project Setting 1
- 1.2 Project Description and Background 3
- 1.3 Purpose and Scope 3
- 1.4 Stakeholder Engagement 4

2 Constraints and Opportunities 5
- 2.1 Physical Trail Constraints 5
- 2.2 Regulatory and Policy Constraints 6
- 2.3 Trail Alignment and Connection Opportunities 7
- 2.4 Other Recreational Facility Opportunities 8
- 2.5 Alternatives Development 8

3 Approach and Recommendations 10
- 3.1 Approach 10
- 3.2 Recommendations 13
  - 3.2.1 Southport Sacramento River Early Implementation Project Levee 13
  - 3.2.2 Trail Access and Connections 13
  - 3.2.3 Trailhead Amenities 14

4 Implementation 21
- 4.1 Additional Engineering 21
- 4.2 Real Estate 21
- 4.3 O&M 22
- 4.4 Environmental Documentation and Permitting 22
  - 4.4.1 California Environmental Quality Act (CEQA) Compliance 22
  - 4.4.2 Required Permitting and Approvals 22
- 4.5 Cost Estimate 23
- 4.6 Financing Options 23
  - 4.6.1 Capital Costs 23
  - 4.6.2 Long Term Operations and Maintenance 25

5 References 26

Figures

Figure 1. Project Location Map 2
Figure 2. Class 1 Bike Path 11
Figure 3. Trailhead, Linden Road, and Real Estate Boundaries 12
Figure 4. Overall Trail Map 16
Figure 5. Trailhead Concept 17
Figure 6. Roadway Class I Bike Trail Concepts 18
Figure 7. Roadway Class I Bike Trail Concepts 19
Figure 8. Trailhead Conceptual Plan 20

Tables

Table 1. Real Estate 21
Table 2. State Funding Programs 24

Appendices

Appendix A. Preliminary Cost Estimate A-1

Acronyms and Abbreviations

AB	Aggregate Base
ADA	Americans with Disabilities Act
BPTMP	Bicycle, Pedestrian and Trails Master Plan
Branchline Trail	Clarksburg Branchline Trail
Caltrans	State of California Department of Transportation
City	City of West Sacramento
CVFPB	Central Valley Flood Protection Board
DWR	California Department of Water Resources
EIR	Environmental Impact Report
FEMA	Federal Emergency Management Agency
Levee Trail	Southport Setback Levee Recreation Trail
LMA	Local Maintaining Agency
O&M	Operations and Maintenance
RD	Reclamation District
RFMP	Regional Flood Management Plan
SEIP	Southport Sacramento River Early Implementation Project
State	State of California
SPFC	State Plan of Flood Control
SSJDD	Sacramento San Joaquin Drainage District
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U. S. Geological Survey
WSAFCA	West Sacramento Area Flood Control Agency
WSE	water surface elevation

1 Introduction

The City of West Sacramento (City) and West Sacramento Area Flood Control Agency (WSAFCA) recently initiated construction of the Southport Sacramento River Early Implementation Project (SEIP), which implements flood reduction measures along the Sacramento River South Levee in the southeastern portion of the City. In initiating the planning for the SEIP, the City and WSAFCA identified an opportunity to provide local and regional residents with a unique riverfront recreation experience, similar to the American River Parkway located in Sacramento County. This opportunity was described in the Southport Sacramento River Corridor Recreation Program, which was included in Appendix A of the SEIP Environmental Impact Report (EIR). The City and WSAFCA wanted to implement the Southport Sacramento River Corridor Recreation Program in conjunction with the SEIP levee improvements; however, the SEIP program budget only included sufficient funding to identify general recreation concepts.

The California Department of Water Resources (DWR) recently provided funding through the Lower Sacramento River/Delta North Regional Flood Management Plan process to prepare a more detailed assessment of the recreation opportunities within the SEIP area. This funding was used to prepare a feasible recommendation for the Southport Setback Levee Recreation Trail (levee trail), which encompasses the recreational enhancements that are the subject of this report.

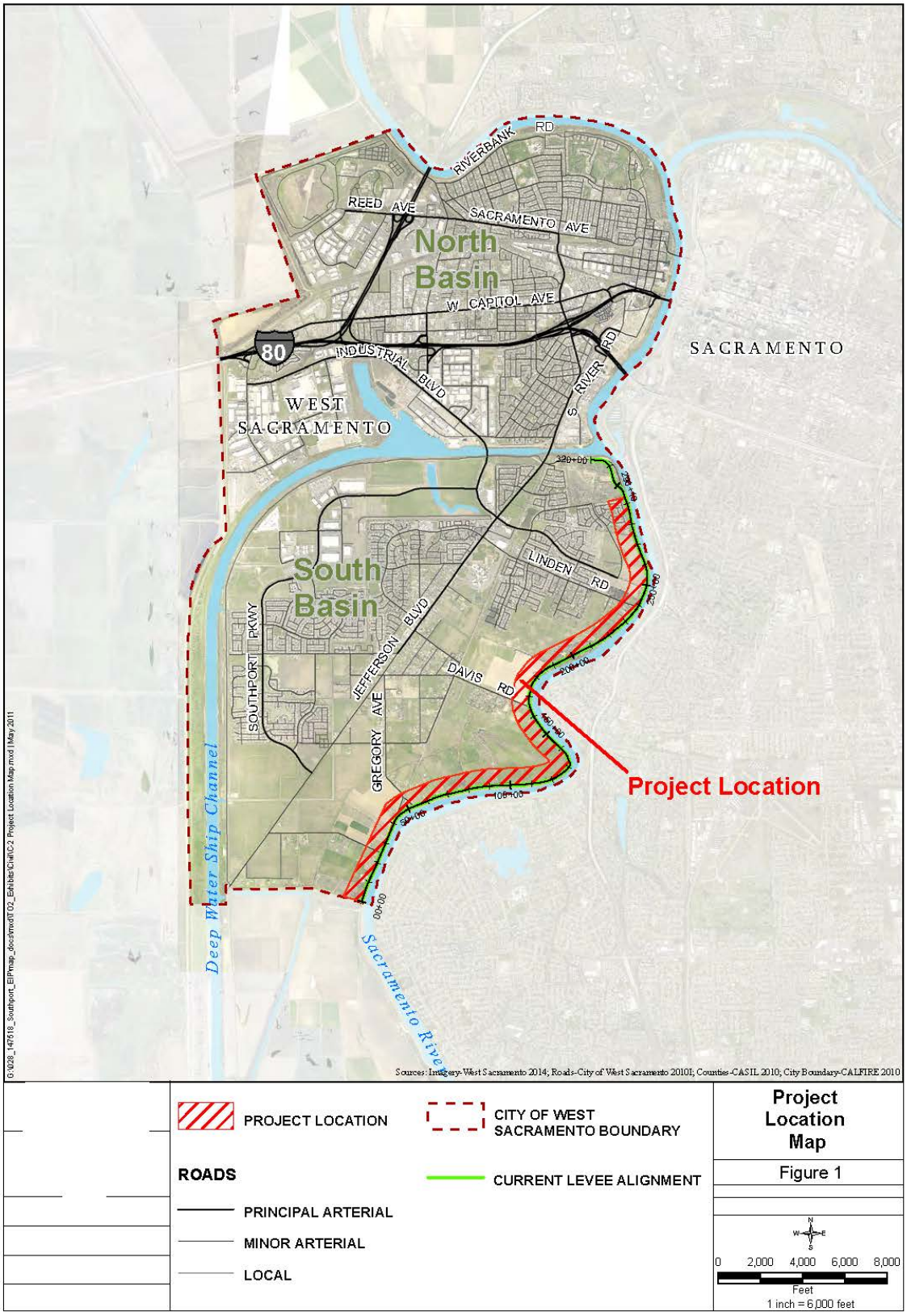
This section introduces the report with a description of the project setting, project description and background, purpose and scope, and stakeholder engagement process.

1.1 Project Setting

The SEIP implements flood-risk reduction measures along the Sacramento River South Levee in the City of West Sacramento. The SEIP area extends along the right (west) bank of the Sacramento River south of the Barge Canal downstream for 5.6 miles to the South Cross Levee, adjacent to the Southport community of West Sacramento (See **Figure 1**– Project Location Map). In its pre-SEIP project condition, South River Road ran along the top of the levee for the majority of the reach of the river. The landside of the levee is bordered primarily by private agricultural lands containing rural residences. Two small bodies of water referred to as Bees Lake are located adjacent to the levee landside toe near the middle of the levee setback construction area.

To accommodate the SEIP construction activities, the portion of South River Road within the SEIP boundaries has been closed, with the exception of the stretch between Sherwood Harbor Marina and the Sacramento Yacht Club. This segment of South River Road will remain following construction of the levee setback.

The study area also includes the length of the Clarksburg Branch Line Trail (Branchline Trail) extending south from the intersection of Jefferson Boulevard/Locks Drive to just south of the intersection of Gregory Avenue/South River Road, and the area between South River Road and the Branchline Trail. These areas were included within the study area to identify how recreation improvements within the SEIP could be integrated into the City's existing and planned trails system.


RIVERBANK RD
REED AVE
SACRAMENTO AVE
North Basin
W CAPITOL AVE
80
INDUSTRIAL BLVD
S RIVER RD
SACRAMENTO
WEST SACRAMENTO
South Basin
LINDEN RD
JEFFERSON BLVD
SOUTHPORT PKWY
DAVIS RD
GREGORY AVE
Project Location
Deep Water Ship Channel
Sacramento River
Sources: Imagery-West Sacramento 2014; Roads-City of West Sacramento 20101; Counties-CASIL 2010; City Boundary-CALFIRE 2010
PROJECT LOCATION
CITY OF WEST SACRAMENTO BOUNDARY
ROADS
CURRENT LEVEE ALIGNMENT
PRINCIPAL ARTERIAL
MINOR ARTERIAL
LOCAL
Project Location Map
Figure 1
0 2,000 4,000 6,000 8,000
Feet
1 inch = 6,000 feet

1.2 Project Description and Background

The SEIP area being considered in this report makes up a large portion of the City's Parks Master Plan Recreation Corridor 1. Recreation corridors are proposed throughout the city and are intended to serve as recreation and alternative transportation routes as well as providing trail users an opportunity to connect with, and learn about nature. South River Road, which ran along the top of the Sacramento River levee prior to implementation of the SEIP project, was used by bicyclists, pedestrians, equestrians, fishermen and others seeking open space values of the river, despite narrow traffic lanes and the absence of any bike lanes, sidewalks, trails, designated parking areas, or access locations. The levee trail recreation enhancements being considered for Recreation Corridor 1, which are described in detail in Section 3 of this report, would provide a much safer corridor for connecting recreational users to natural areas. They would also provide an alternative transportation route for bicycle commuters in the Southport community. The levee trail would form an overall 10-mile loop when connected at its northern and southern ends with the Branchline Trail, which would also connect it to the larger Great California Delta Trail, of which the Branchline Trail is a component. Additionally, the levee trail would form portions of multiple shorter interior loops when connected with trails at the future extended Stonegate Drive, Washington Boulevard and Linden Road, Davis Road, and future trails in the planned Liberty and Riverpark developments.

1.3 Purpose and Scope

One of the stated objectives of the SEIP is to, "provide improved or new public outdoor recreation and open space opportunities, where compatible with construction, operation, and maintenance of flood risk–reduction infrastructure, and consistent with the Parks Master Plan and the Bicycle, Pedestrian and Trails Master Plan."

The purpose of this report is to recommend a bicycle and pedestrian trail and support amenities for the levee trail project that:

- Is compatible with the final design of the SEIP, and is consistent with the Parks Master Plan and the Bicycle, Pedestrian and Trails Master Plan (BPTMP); (the BPTMP and Parks Master Plan Updates are currently underway and the recommendations in this report will be integrated into them);
- Is compliant with all state and federal regulations and guidelines regarding trails on levees;
- Maximizes the length of Class I Bike Path, to include an overall 10-mile loop, and multiple interior loops, when connected to and combined with the Branchline Trail;
- Provides the best possible public access to and viewing of the Sacramento River and the ecosystem within the levee setback area; and
- Enables additional passive, public recreation opportunities that connect users with natural areas.

The scope of this study included reviewing the SEIP final design and ensuring the recommended recreation components, including a trail alignment, can fit within it. This study also included reviewing the SEIP EIR/EIS and all state and federal regulations and

guidelines pertaining to trails on levees. The stakeholder outreach for this report is built on the efforts conducted for the SEIP process, as described in further detail below. The report development included preparing a baseline assessment of the recreation opportunities within the SEIP area, identifying potential constraints to recreation facility construction, and recommending specific trail system improvements and associated recreation enhancements that can be feasibly implemented.

1.4 Stakeholder Engagement

Extensive community engagement was conducted throughout the planning, design and construction process for the SEIP. This included engagement with the community regarding the City's Southport Sacramento River Corridor Recreation Program. Because extensive community engagement had already been conducted, the stakeholder engagement effort for this study focused on soliciting input from key city staff, WSAFCA staff, and representatives of Reclamation District (RD) 900 regarding the feasibility of implementing the levee trail. This included holding planning meetings to discuss potential recreation opportunities and constraints, identifying how recreation components could be integrated with residential and infrastructure developments that are anticipated in the Southport area, and discussing preliminary trail alignment concepts. During these working meetings, adjustments were made to the recreation components in response to stakeholder comments. A draft report was prepared for stakeholder review and the final report reflects stakeholder input.

2 Constraints and Opportunities

In addition to the identification of Recreation Corridor 1 in the City's Parks Master Plan, the City's BPTMP calls for a future trail network throughout the Southport area. Segments of the trail network are complete, but the majority of the trails, to include critical connections between trails, have yet to be implemented. The BPTMP shows a future Class I Bike Path along the Sacramento River levee from the Mike McGowan Bridge in the north to where the levee meets the Branchline Trail in the south. The BPTMP was written prior to the design and construction of the SEIP, but the SEIP also foresaw a recreational element. In addition to the Southport Sacramento River Corridor Recreation Program mentioned above, the SEIP's Final EIR/EIS specifically states, "the primary purpose of the Southport project is to reduce flood risk for the entire city of West Sacramento by addressing known levee deficiencies along the Southport reach. Secondary purposes of the Southport project are to provide ecosystem restoration and public recreation opportunities that are compatible with flood-risk reduction measures."

In addition to integrating a Class I Bike Path into the SEIP, there are also opportunities to connect the levee trail to other existing and planned trails in the BPTMP. Connections of the levee trail at both its northern and southern ends to the Branchline Trail are desirable and possible. Currently, only the northern third of the Branchline Trail has been improved to a Class I Bike Path, but the City has plans to upgrade the southern two thirds to a Class I Bike Path. Once complete, and connected to the levee trail, a Class I Bike Path 10-mile loop would be formed.

While the new Village Parkway contains Class II Bike Lanes for most of its length, there are no bicycle-friendly east-west connections between the Branchline Trail and Village Parkway. Additionally, the Sacramento River itself, and the dense riparian vegetation along the river's west bank, provide tremendous recreational viewing and education opportunities if public access is provided, and the levee trail would provide the recreational infrastructure backbone to which future recreational amenities could be connected. The specific opportunities and constraints considered in developing the recommended bicycle and pedestrian trail alignment and associated amenities are described in further detail below.

2.1 Physical Trail Constraints

The primary purpose of the SEIP is to ensure public safety through the implementation of flood-risk reduction measures along the Sacramento River South Levee. To ensure the public safety benefits of the SEIP are maintained over the long-term, RD 900, as the Local Maintaining Agency (LMA), is required to consistently implement their levee maintenance procedures. These procedures would at times require the closure of any trails that physically occupy the levee footprint, including the waterside and landside slopes and the levee crown, to accommodate maintenance activities. Also, during high-water events on the Sacramento River, RD 900 would restrict recreational access to accommodate levee inspection patrols and flood fighting activities, if necessary. The SEIP setback area between the Sacramento River and the new levee also represents a recreational constraint because the setback area is an advanced mitigation site reserved for environmental restoration, and while there will be public access within this area, it will

be limited to ensure the planted vegetation is not disturbed or damaged. Additionally, because the waterside toe of the levee will be inundated during high-water events on the Sacramento River, access along the waterside toe will be seasonally restricted.

The SEIP includes an O&M road on the levee crown, and waterside and landside access ramps that can be used for recreational access purposes; however, the road and the ramps cannot be modified in any way without U.S. Army Corps of Engineers (USACE) and Central Valley Flood Protection Board (CVFPB) permission, and support from the LMA. A USACE Section 408 permit is required to make any alteration within the real estate boundaries of a federal project, and the SEIP is a federal project. Any alteration includes any action that builds upon, alters, improves, moves, occupies, or otherwise physically affects the project, except if the action is specifically for O&M. Paving the O&M road with asphalt and modifying the landside ramps (which are relatively steep and not compliant with Americans with Disabilities Act (ADA) requirements) would be fairly simple actions, and locally-approved 408s could be requested since the levee's crown and landside are outside the floodway and these alterations would not affect levee performance. But altering the levee's waterside ramps would require a much more detailed 408 review including a hydraulic analysis. Historically such 408 reviews have been expensive and time-consuming, and therefore making modifications to the waterside ramps was assumed to be infeasible in this study.

Additionally, because access to the Sherwood Harbor Marina and the Sacramento Yacht Club will be maintained with implementation of the SEIP, the design of the levee trail will have to ensure vehicle access is not restricted with implementation of any recreational components.

2.2 Regulatory and Policy Constraints

Title 23 of the California Code of Regulations identifies the CVFPB's policy regarding the construction of paved and unpaved bicycle trails by public agencies on levees and within floodways under the Board's jurisdiction. The Board supports the construction of these bicycle trails provided that the flood control purpose of the floodway facilities remains primary.

Bicycle trails must meet the following general conditions:

- Where feasible, the bicycle trail should be located off of the levee.
- Repair or replacement of the bicycle trail that is damaged during an emergency flood fight procedure, routine maintenance, or any required improvement activity within an adopted plan of flood control must be made by, and at the sole expense of, the permittee or in accordance with an agreement for maintenance between the permittee and a public agency.
- The board and the local flood control maintaining agency retain the right to temporarily close the bicycle trail for improvement, maintenance, or during emergency flood fight activities.
- Bicycle trails within an adopted plan of flood control must be maintained to a level safe for bicycle traffic and acceptable to the LMA and DWR.

Although the first general condition in Title 23 would seem to indicate that bicycle trails are not allowed to be installed on levees, this restriction only applies when other feasible options are available. Because no feasible, non-levee alignments extending along the length of the western bank of the Sacramento River are available, this restriction would not apply.

Title 23 also includes more specific conditions regarding bicycle trail design and maintenance on a levee or within a leveed floodway. These conditions include a prohibition on equestrian and motorized vehicle traffic, with limited exceptions, and a required minimum pavement width of twelve (12) feet. The trail must also be designed and paved to withstand a maximum load of 68,000 pounds.

2.3 Trail Alignment and Connection Opportunities

Because the SEIP extends across such a long riverine landscape, it provides a unique opportunity to integrate a linear trail alignment adjacent to an aesthetically-pleasing riparian corridor. Aligning the trail along the crown of the levee would provide recreational users with direct views of the river and restored habitat and a unique connection to nature, which will enhance the overall recreational experience. In addition, aligning the trail along the length of the SEIP levee provides the backbone trail infrastructure necessary to create an integrated trail network by connecting the levee trail with existing and planned trails in the Southport area.

In the north, the planned trail north of Locks Drive (which will connect to the Branchline Trail) provides a logical connection point for the levee trail. From this point, the levee trail could travel east and then south along the existing South River Road until it reaches the northern end of the new SEIP levee. The northern portion of the South River Road is proposed to remain intact and undisturbed after the SEIP is built. Though it will be closed to public vehicle traffic, South River Road will be usable for emergency and maintenance vehicles, as well as bicycles and pedestrians, and there is intent in the future to make this part of South River Road a Class I Bike Path, which will then connect to the start of the new setback levee.

The SEIP levee alignment extends south to its connection with the southern end of the Branchline Trail. The levee trail could extend along the entire length of the SEIP levee until it reconnects with the Branchline Trail in the south. Along the length of the SEIP levee, multiple opportunities are available to connect with other trails in the City's overall BPTMP network.

The first opportunity is provided at the eastern end of the planned future extension of Stonegate Drive; and just south of this opportunity is another at Lake Washington Boulevard and Linden Road. A trail extending east from Lake Washington Boulevard to the levee and then heading south along the levee toe to Linden Road could enable one joint connection for these two roads. At both of these locations there are great opportunities to form interior loops and provide trail access to those residing in the Stonegate neighborhood and the future Liberty development. Additionally, residents of the future Liberty development will also be able to access the levee trail at a connection at the eastern end of Davis Road.

The Davis Road connection will be constructed as part of the Liberty Specific Plan development, utilizing the planned Class I Bike Path that will run along the north side of Davis Road between the Branchline Trail and Village Parkway.

The future Riverpark development offers an opportunity for a trailhead connection at the eastern end of the planned green space that meanders from west to east down the center of the planned neighborhood.

2.4 Other Recreational Facility Opportunities

Integrating the levee trail with the SEIP and existing and planned trails in the City's BPTMP would open up opportunities to enhance access to, and use of, recreation amenities.

One particular enhancement is trail heads. The SEIP is being constructed to meet the state's 200-year level of flood protection standards, and while the leveed line of flood protection will pose a considerable boundary to river access, the Sacramento River itself will remain a major attraction, and many pedestrians and cyclists will be drawn east to view the water, the restored habitat, and the wildlife the habitat attracts. Providing trail heads for recreational users accessing the area would be important because the trail head locations could be the sites for other amenities to provide for public safety and comfort. Potential trail head locations at major trail connections were evaluated and specific locations at the future extension of Stonegate Drive, Lake Washington Boulevard/Linden Road, Davis Road, and within the new Riverpark development are recommended in Section 3 of this report.

These trail heads could provide the opportunity for trail amenities at each location supporting education, rest and recovery, and equestrian features as appropriate. The trail heads could consist of signage and information boards describing the levee trail, the SEIP and its restoration area, the fish and wildlife species observable in the area, and the characteristics of the Sacramento River. Also, if desired, the trail heads could be ideal locations for parking areas, restrooms, bicycle racks, and shade structures with benches to service the levee trail recreational users.

The Bees Lake area, located on the levee's waterside between the Sherwood Harbor Marina and the Sacramento Yacht Club, provides an ideal area for the public to connect with nature. Bees Lake contains dense riparian vegetation and two ponds in an area located outside of the SEIP footprint. RD 900 does not conduct any maintenance within the Bees Lake area, which minimizes the potential for conflict with recreational users. In addition, the area's size and topography provide ample opportunities to develop additional passive recreation activity centers such as hiking, and bird and other wildlife watching.

2.5 Alternatives Development

Alternatives development is a process in which all possible alternatives are initially considered and the planning team goes through a screening exercise to narrow the array of possible alternatives so that a detailed evaluation and comparison is only conducted for the most feasible alternatives.

The process of developing alternatives for the levee trail started with satisfying the intent of the SEIP to integrate recreation into the flood control project. Based on document and data review and research, it was understood that it was physically possible to have a recreational trail built into the levee. To satisfy the intent of the City's BPTMP, the planning team analyzed how to make the levee trail a Class I Bike Path and to enhance the recreational experience and connection to nature by putting the bike path as close to the Sacramento River as possible. The desire was to replicate the American River Jedediah Smith Memorial Trail and put the Bike Path on the crown and/or the water side of the SEIP's new setback levee. Also, the City's BPTMP calls for connecting the levee trail to other trails, so the team identified the Locks Drive connection to the Branchline Trail, as well as the connection to the Branchline Trail at the southern end of the SEIP which enabled the formation of a 10-mile loop of Class I Bike Path.

The screening criteria used to initially evaluate alternative trail alignments consisted of the physical constraints, previously discussed in Section 2.1, and the regulatory and policy constraints, discussed in Section 2.2. Applying these screening criteria resulted in the conclusion that the Class I Bike Path could only physically occupy the levee's crown and landside slope. No modifications could be made to the levee's waterside. However, the offset bench being constructed along the SEIP levee's waterside toe was identified as providing an opportunity for passive recreational use when it is not inundated by the Sacramento River or being used for operations and maintenance purposes. This dirt trail would be aligned adjacent to 5.6 miles of naturally vegetated areas planned within the SEIP setback area. This trail, and potentially the maintenance corridors connected to it, would provide opportunities for passive recreational activities including wildlife viewing, hiking, mountain bike riding, and connecting with nature.

The next step of the alternatives development process was stakeholder engagement; and, as mentioned previously in Section 1.4, the team met with WSAFCA and RD 900. In those meetings, the planning team understood the SEIP's long-term permit requirements and the levee and advanced mitigation area O&M requirements. This resulted in the conclusion that it would not be feasible to recommend any new recreation amenities on the levee's waterside because public access would be limited to 20 feet beyond the levee's waterside toe, which is RD 900's O&M corridor for inspection and maintenance purposes.

Therefore, the closest the levee trail can be to the Sacramento River is the crown of the setback levee. There is an existing O&M road on the levee's crown, and while its primary purpose is to support traffic from O&M and emergency response vehicles and equipment, the O&M road can also support a Class I Bike Path.

In meetings with the City, the planning team discussed future planned development in the project area; specifically the Stone Lock, Liberty and Riverpark developments. Understanding the development plans led to identifying opportunities to connect the levee trail to other trails in the BPTMP network. This is specifically where trail connections at Stonegate Drive, Lake Washington Boulevard/Linden Road, Davis Road, and the Riverpark development were identified. Defining these connections enabled the development of multiple, shorter interior loops that would provide cyclists and pedestrians with access to a variety of loop segment lengths and locations.

3 Approach and Recommendations

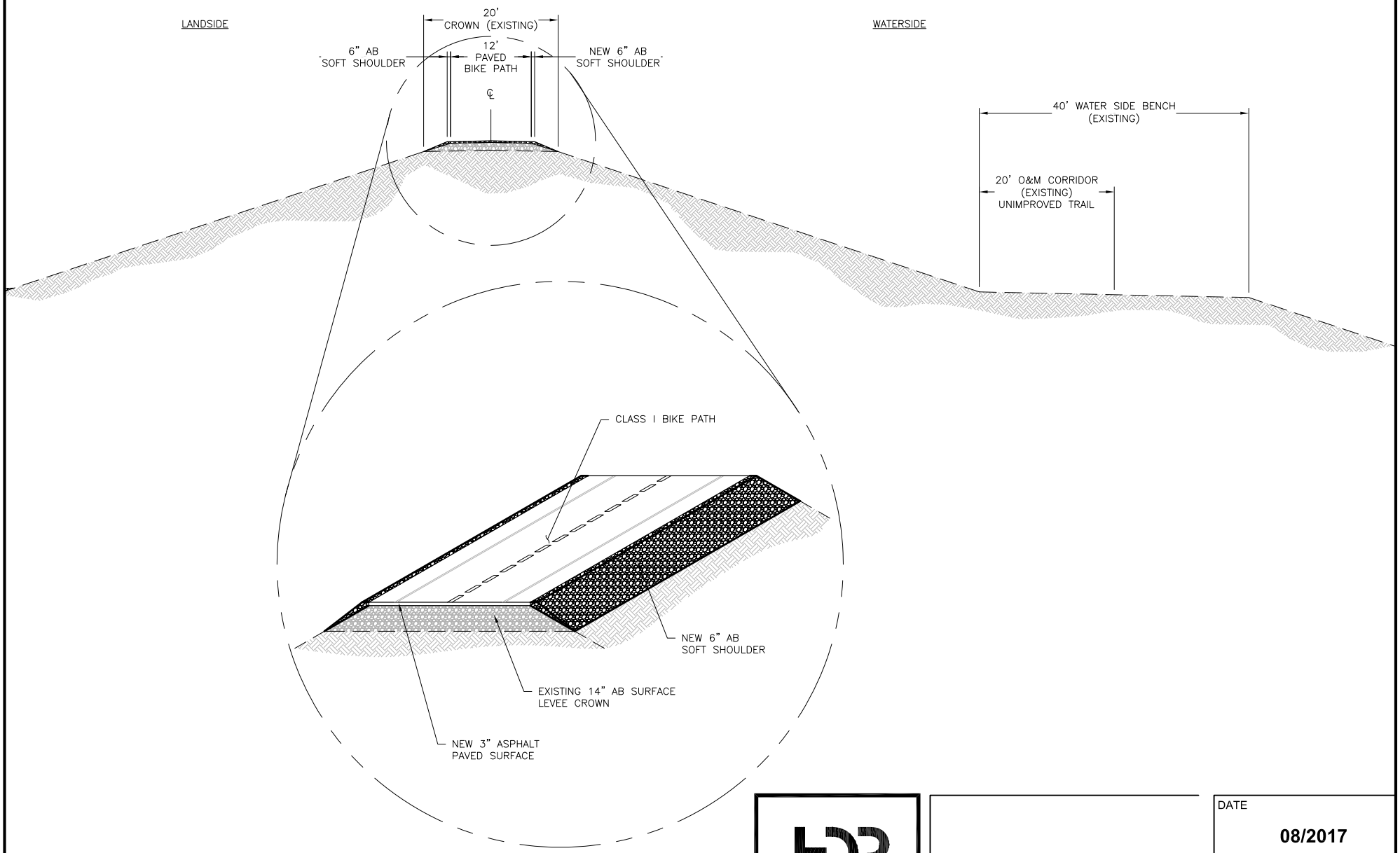
3.1 Approach

This section describes the report approach, which was to review the SEIP's final design and to recommend a recreational trail that in no way increases the risk of levee failure. This planning process in preparing this report was intended to ensure the recommended trail:

- Does not in any way increase flood risk;
- Complies with all state and federal regulations and guidelines for trails on levees;
- Complies with the Caltrans Design guide for a Class I Bike Path;
- Complies with all permits acquired for the SEIP; and
- Abides by all stipulations of real estate transactions for the SEIP.

To ensure the levee trail does not increase flood risk, the planning team did not recommend any modifications on the waterside of the levee. The team verified that adding a Class I Bike Path to the surface of the levee crown did not affect levee performance (see **Figure 2,** Class 1 Bike Path). The 14 inches of Aggregate Base (AB), which is specifically constructed for the SEIP O&M road on the levee crown, provides a structurally stable base for the Class I Bike Path. The only modifications that would need to be made include adding three inches of asphalt to the 14 inches of AB, and adding a six inch wide AB shoulder on each side of the asphalt path. These modifications would be entirely located on the crown of the levee and are therefore out of the floodway. These modifications to the levee crown would in no way impact levee performance.

The team also confirmed that it could add or modify landside levee access ramps without decreasing levee performance (see **Figure 3,** Trailhead, Linden Road, and Real Estate Boundaries), and the team ensured the levee trail would not affect any of RD 900's levee maintenance practices.

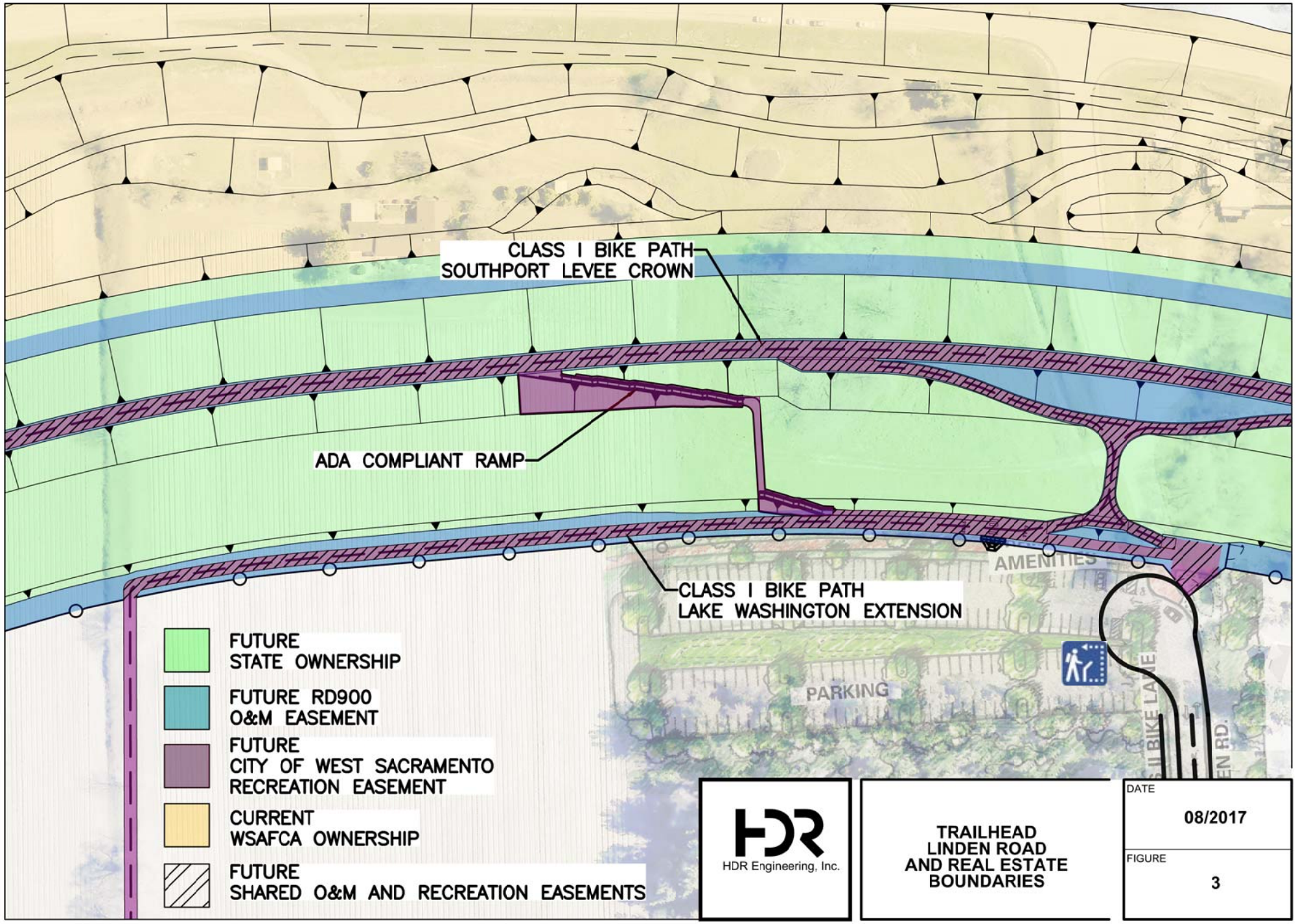


HDR Engineering, Inc.

CLASS I BIKE PATH

DATE
08/2017

FIGURE
2



HDR Engineering, Inc.

**TRAILHEAD
LINDEN ROAD
AND REAL ESTATE
BOUNDARIES**

DATE
08/2017

FIGURE
3

The planning team made sure the levee trail would comply with the California Code of Regulations, Title 23, Article 8, Section 132, Bicycle Trails. The team also made sure the levee trail would comply with all USACE levee regulations and policies.

The planning team developed the levee trail consistent with all requirements for a Class I Bike Path in the Caltrans Highway Design Manual, Chapter 1000, Bicycle Transportation Design.

The planning team's meeting with WSAFCA and RD 900 clarified the SEIP's permit requirements and the team ensured the levee trail would not violate any permit requirements, and would abide by all RE stipulations resulting from transactions made for the SEIP (**Figure 3** also delineates the different real estate interests, further described in Section 4.2) .

3.2 Recommendations

3.2.1 Southport Sacramento River Early Implementation Project Levee

The SEIP levee crown is the recommended location for the levee trail. A path along the SEIP levee crown would not be shaded anywhere along its length due to the requirement that flood protection levees only be covered with short grass, but the location on top of the levee would provide clear views in all directions for cyclists and pedestrians. The levee's O&M road on its crown provides a perfect base for an asphalt Class I Bike Path. Additionally, the width of the O&M road satisfies Caltrans Bike Path width requirements.

The levee has ramps on both the land and watersides so that O&M and emergency vehicles can traverse both sides of the levee and the crown. As discussed in Section 2.1, it is recommended that the waterside ramps not be modified. Since changes to the levee's landside can be made without changing the floodway or impacting levee performance, the landside ramps can be physically modified to accommodate cyclists and pedestrians, and they can be modified to be made ADA compliant (see **Figure 3**).

Although no improvements are recommended along the waterside of the levee, an offset bench is being constructed along the SEIP levee's waterside toe that could be accessed by trail users. This offset bench would have a dirt base, would be inundated by the Sacramento River for parts of the year, and would not be accessible during RD 900's O&M activities, but it would provide an accessible linear trail that would parallel much of the Bike Path along the levee crown. Access would be available from the waterside ramps that are being installed as part of the SEIP project. This dirt trail would be aligned adjacent to the naturally vegetated areas planned within the SEIP setback area. This trail, which would also be connected to planned RD 900 maintenance corridors, would provide opportunities for passive recreational activities including wildlife viewing, hiking, mountain bike riding, and connecting with nature.

3.2.2 Trail Access and Connections

Providing multiple access points to the levee trail is recommended because providing a bike path along the Sacramento River could be a major attraction, and cyclists and pedestrians would be expected to come from many locations. Having multiple points of entry to and exit from the levee trail will provide cyclists and pedestrians a more

enjoyable experience and some variety in the routes they take (see **Figure 4**, Overall Trail Map). Acquisition of real property rights (described further in Section 4.2) for the trail access points should be discussed and negotiated with WSAFCA and the Sacramento San Joaquin Drainage District (SSJDD - the property-owning entity of the CVFPB) prior to close-out of the SEIP.

Signage would be necessary at access points for both wayfinding along the levee trail, and notification of which areas are open to the public and which are off-limits. Additionally, notification would be needed when the trail is closed.

Access to both the north and south ends of the levee trail is ready made since the South River Road connection in the north will remain, allowing at-grade entry onto the levee trail. Also the SEIP's intersection with the Branchline Trail in the south will remain, similarly enabling at-grade transition from the levee trail onto the Branchline Trail.

3.2.3 Trailhead Amenities

If the portion of the South River Road constructed on the crown of the levee as part of USACE's RM 57.2 Project is converted to a bike/pedestrian trail, a vehicle parking area along this stretch is needed to replace the lost shoulder-parking. Therefore, at the northern end of the levee trail, and at the eastern terminus of the future extension of Stonegate Drive, a trailhead and vehicle parking area are recommended. This feature would be placed at the western boundary of the existing flood protection established by the USACE's RM 57.2 Project. This would enable the public to carry bikes in vehicles to the start of the trail; park there for a prolonged period while unloading their bike and starting their ride.

A trailhead is recommended at the eastern end of Lake Washington Boulevard and Linden Road (see **Figure 5**, Trailhead Concept; and **Figure 6**, Roadway Class I Bike Trail Concepts). The City owns a wide right-of-way along the south side of Lake Washington Boulevard from the Branchline Trail to Marlin Street. The City is looking into the possibility of building a Class I Bike Path on this right-of-way. Once complete, it would not require significant further investment to extend that Class I Bike Path east to the landside toe of the SEIP setback levee. Also, the City is exploring the possibility of widening Linden Road (on its north side) from Village Parkway east to the landside toe of the SEIP setback levee and putting in either a Class II Bike Lane or building a Class IV Separated Bike Lane. A trailhead and parking area, located at the landside toe of the setback levee and directly between the Lake Washington Boulevard and Linden Road bike routes, would enable direct access onto the levee crown via the existing SEIP landside access ramp.

With the future Liberty development, the north side of Davis Road, which is currently a drainage canal, will become a side-by-side, separated equestrian trail and Class I Bike Path (see **Figure 7**, Roadway Class I Bike Trail Concepts). This trail/Bike Path will extend from the Branchline Trail to Village Parkway. At Davis Road, east of Village Parkway, a widened turn-around area, trailhead and parking area are recommended directly adjacent to an existing SEIP landside access ramp.

And finally, a fourth trailhead and parking area are recommended in the Riverpark development. The planned road network within this development enables construction of a parking area that would also intersect an existing SEIP landside access ramp.

The trailheads and vehicle parking areas provide the opportunity for other recreational amenities such as bicycle racks and restrooms. Also, shade structures are recommended to provide relief from the summer heat, particularly due to the lack of vegetative cover on the levee. The installation of benches under the shade structures is also recommended. Information boards describing the levee trail and educational, interpretive signage regarding the ecosystem in the setback area are recommended to enhance the user experience (see **Figure 8**, Trailhead Conceptual Plan).

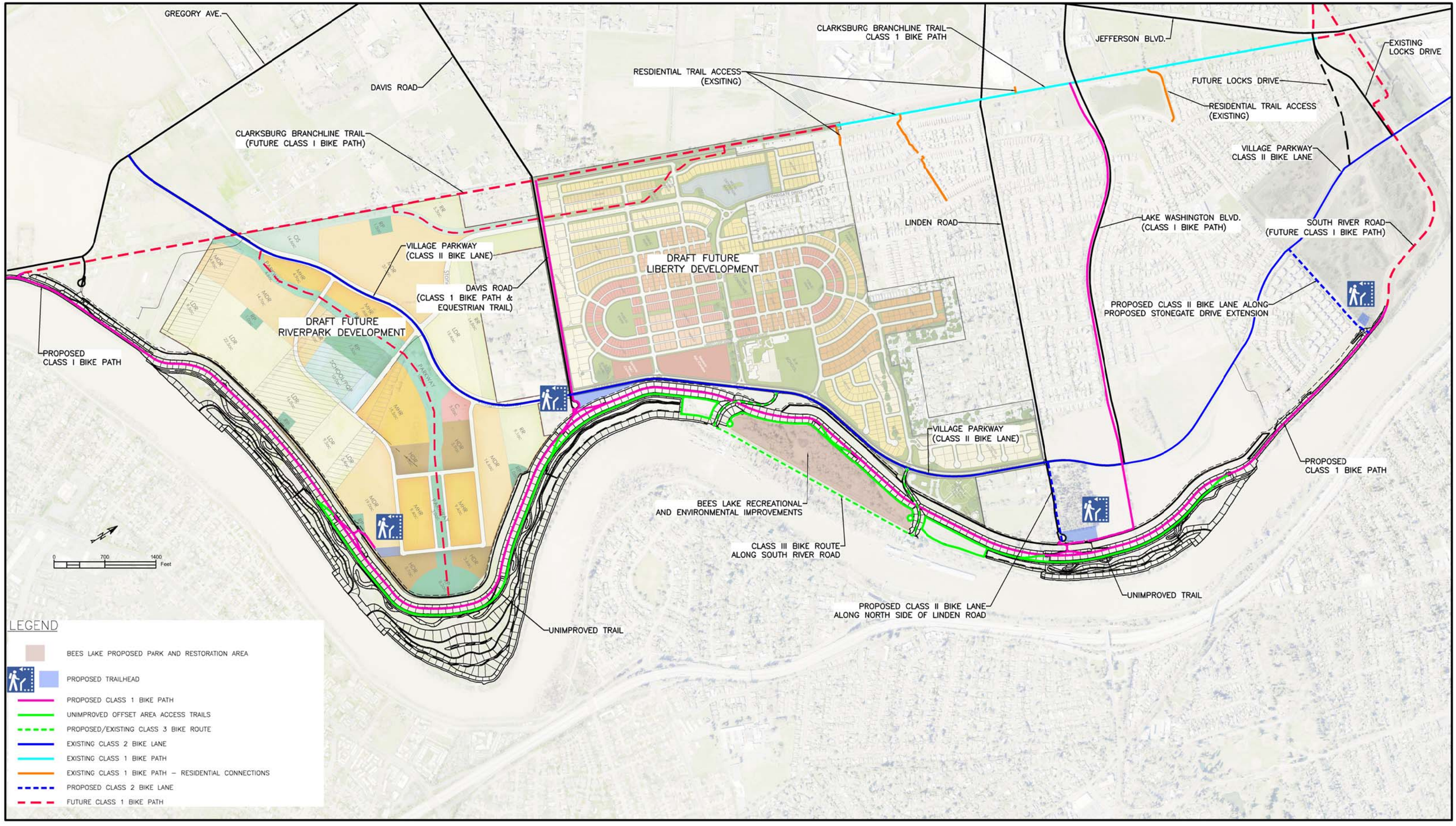


Figure 4. Overall Trail Map

Figure 5. Trailhead Concept

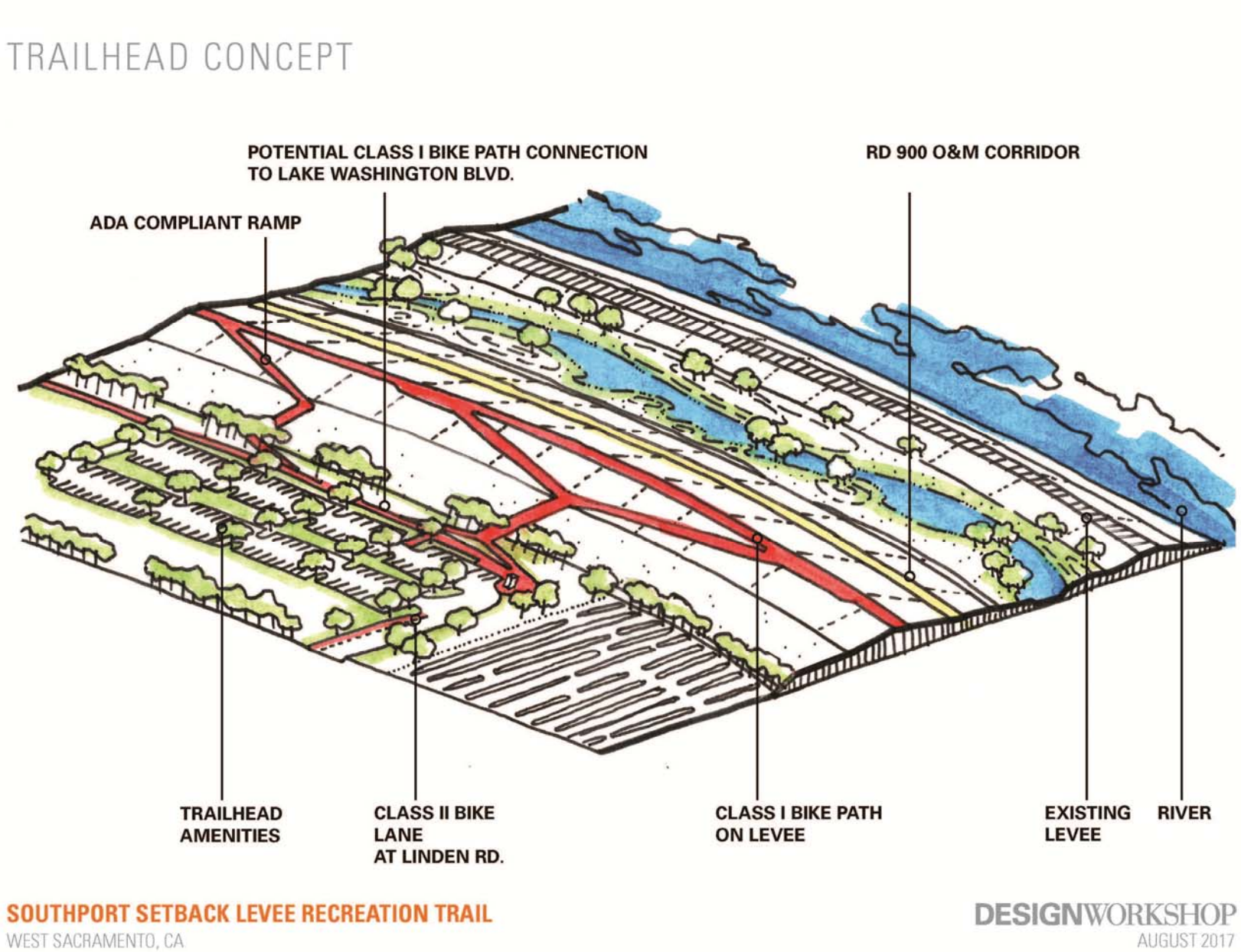


Figure 6. Roadway Class I Bike Trail Concepts



Figure 7. Roadway Class I Bike Trail Concepts

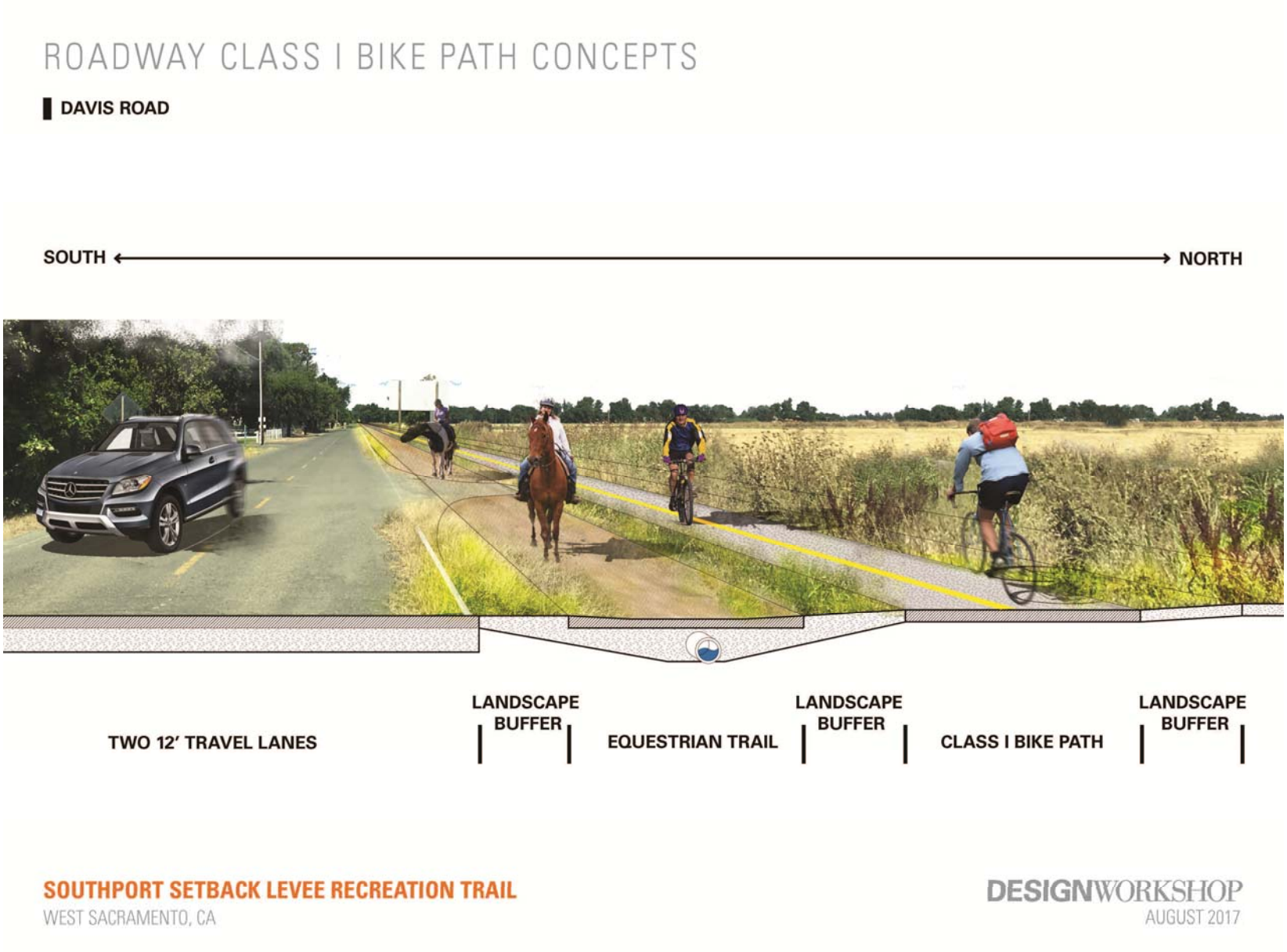
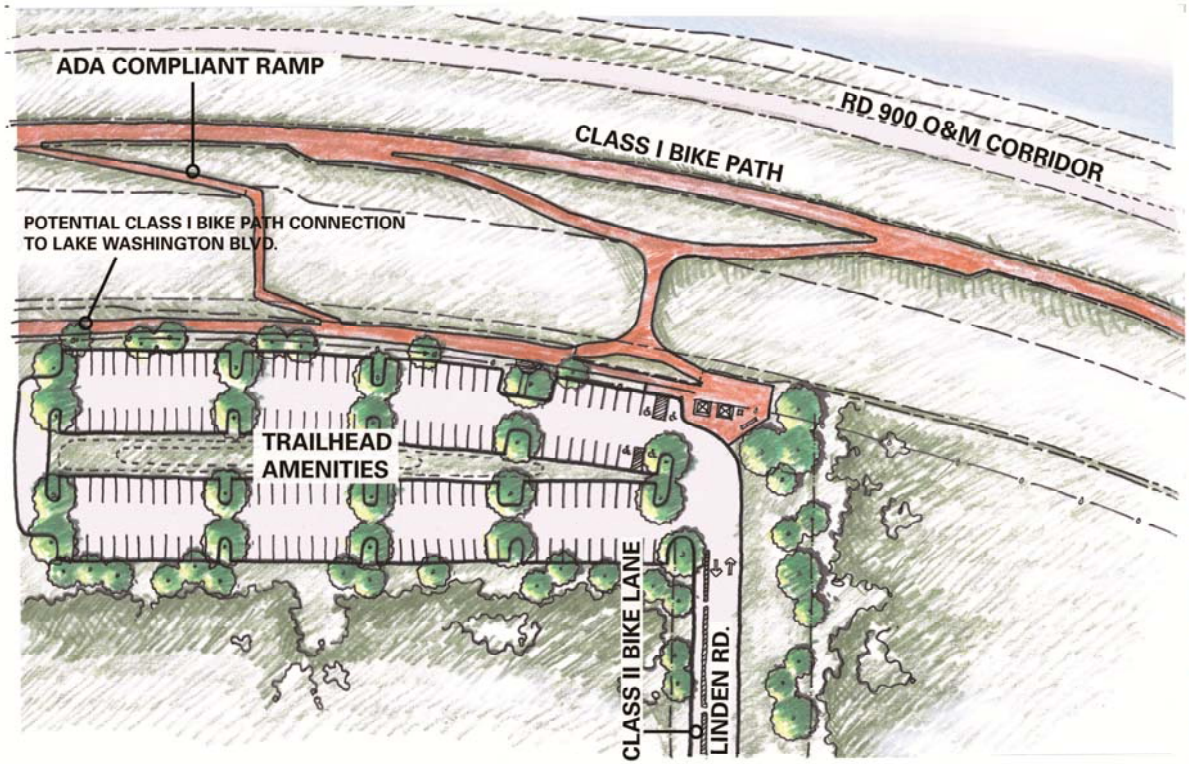


Figure 8. Trailhead Conceptual Plan

TRAILHEAD CONCEPT



TRAIL HEAD CONCEPTUAL PLAN



BIKE TRAIL ON LEVEE AND
TRAILHEAD AMENITIES

SOUTHPORT SETBACK LEVEE RECREATION TRAIL
WEST SACRAMENTO, CA

DESIGNWORKSHOP
AUGUST 2017

4 Implementation

The implementation of the recommendations of this feasibility study requires additional steps, as outlined below.

4.1 Additional Engineering

Geotechnical explorations, laboratory testing and analyses should be performed where the SEIP landside access ramps are to be modified and where ADA compliant ramps are to be constructed.

4.2 Real Estate

Real estate ownership and responsibilities in the project area are complicated because multiple agencies are involved. The table below outlines the likely apportionment of the real estate for the levee trail and amenities between the different stakeholder entities, and the potential types of real estate interests to be maintained. **Figure 3** depicts these areas.

Table 1. Real Estate

	Levee Trail	Levee Trail Landside Access Ramps	ADA compliant Pedestrian Access Ramps	Trailhead Area (Locks Drive, Linden and Davis Roads)	Trailhead Area (Riverpark)
State of CA	Fee Ownership	Fee Ownership	Fee Ownership	N/A	N/A
City of West Sacramento	Recreation Easement	Recreation Easement	Recreation Easement	Fee Ownership	Possible Fee Ownership (dependent on future development)
RD 900	O&M Easement	O&M Easement	N/A	N/A	N/A

Currently WSAFCA owns all of the real estate for the SEIP. Once the SEIP is complete, property ownership for the levee itself will likely transition from WSAFCA to the State of California. In that case, the state would own the levee from the western edge of the landside O&M corridor to the eastern edge of the waterside O&M corridor and planting berm, while RD 900 would have an O&M easement in this same area. WSAFCA may possibly maintain ownership of all property from the eastern edge of the planting berm to the river for project mitigation.

WSAFCA intends to identify “layered” rights/easements when conveying the property to the state. Therefore, to implement the levee trail it is recommended that the City commence negotiations with WSAFCA in order that WSAFCA could grant a recreation easement (coincidentally to the O&M corridor) to the City prior to WSAFCA’s transfer of fee title to the SSJDD. With this recreation easement, the City would effectively reserve

limited rights to pursue the levee trail improvements as well as all access ramps (both bicycle and ADA compliant pedestrian) on the levee's landside, as well as for any recreation access desired on the waterside, such as pedestrian hiking along the unimproved O&M corridor.

For additional real estate needed for trailheads, it is recommended that the City purchase the real estate in fee.

4.3 O&M

O&M for the levee trail and the SEIP must remain separate. RD 900 will perform the O&M for the SEIP, which will also ensure that no weeds, shrubs, or trees grow up around the Class I Bike Path or access ramps since they are on the levee. The City will retain the O&M mission for the levee trail, which would consist of maintaining the pavement, restrooms, and other trail amenities. It is recommended that the City, in collaboration with RD 900, develop an O&M Plan detailing specific, regular maintenance actions to be taken and assign responsibilities for those actions. It may be possible to get Southport community involvement through a voluntary trail maintenance program that could be organized around neighborhoods (Stonegate, Liberty, Riverpark) to have regular (at least on a monthly basis) weekend gatherings to walk a particular segment of the trail and collect trash, remove graffiti, repair easy to fix items, and take note of larger repairs needed which could be reported back to the City's Parks and Recreation Department for future repairs.

4.4 Environmental Documentation and Permitting

4.4.1 California Environmental Quality Act (CEQA) Compliance

Implementation of the recreation components would be subject to CEQA compliance. Because an EIR was prepared for the SEIP and components of the levee trail project were contemplated in the EIR, the preparation of an Addendum to the prior EIR may be the appropriate level of environmental review. The preparation of an Addendum is appropriate when only minor technical changes are necessary to the EIR. Because the levee trail may include recreation components that were not contemplated in the EIR, a Supplemental EIR may be necessary. A detailed assessment of the appropriate level of CEQA compliance will be necessary once the levee trail components have been finalized.

4.4.2 Required Permitting and Approvals

The City would be responsible for complying with the California Environmental Quality Act and for approving and implementing the levee trail. However, the City would need to secure several additional project approvals and permits from other agencies prior to project implementation. For any project components located on lands owned by WSAFCA, approval of those components would be required by that agency. In addition, to accommodate recreational activities within the SEIP footprint, the establishment of a recreational easement by the City would be required.

Construction of the levee trail components located within the footprint of the SEIP would require an Encroachment Permit from the CVFPB and a Section 408 permit from the

USACE, and support from the LMA. The Section 408 permit would require compliance with the National Environmental Policy Act (NEPA), Section 7 of the Endangered Species Act, and Section 106 of the National Historic Preservation Act. Because a Delta Plan Consistency Determination was required for the SEIP, preparing a new Consistency Determination may not be necessary. However, consultation with the Delta Stewardship Council would be warranted. If any of the levee trail components result in the filling of waters of the U.S., a Clean Water Act (CWA) Section 404 permit from the USACE and a CWA Section 401 Water Quality Certification from the State Water Resources Control Board would be necessary. Similar to the Section 408 requirements, the Section 404 permit would require compliance with the National Environmental Policy Act (NEPA), Section 7 of the Endangered Species Act, and Section 106 of the National Historic Preservation Act. Also, if any lands affected by the levee trail are within the jurisdiction of the State Lands Commission, approval by that agency would be necessary.

4.5 Cost Estimate

A preliminary cost estimate was developed for project first costs (see **Appendix A**). The cost estimate is broken into: levee trail and access ramps, and individual trailhead areas. The estimated project first costs are for construction only and do not include estimates for real estate, design, or permitting. Additionally, the construction costs do not include the trailhead amenities (restrooms, shade structures, etc.).

4.6 Financing Options

Since the levee trail is tied to flood protection and environmental benefits due to its integration with the SEIP, and since it also will become an integral part of the City's BPTMP with its focus on active transportation, potential financing options for the capital costs of trail construction could come from a variety of sources and from multiple levels of government. Potential funding could be available from both transportation-focused as well as recreation and environment-focused grant programs, and there are very applicable programs at the federal, state, and regional levels.

4.6.1 Capital Costs

Federal Funding

Potential federal funding programs for the levee trail project include the Surface Transportation Block Grant (STBG) program and the Congestion Mitigation and Air Quality Improvement (CMAQ) program, which are allocated to Sacramento Area Council of Governments (SACOG) and distributed regionally; funding is awarded either competitively or proportionally according to jurisdiction population. Grants are awarded annually and deadlines for funding cycles are usually around June of each year. In addition, policies at the federal level have resulted in a series of programs that promise to provide increased funding in the coming years for bicycle projects. The HUD-DOT-EPA Interagency Partnership for Sustainable Communities has generated a series of new grant programs to-date, including Urban Circulator grants, TIGER grants, and Sustainable Communities Planning grants.

State Funding

There are an even greater amount of potential state funding programs for the levee trail (see **Table 2**). These grant opportunities cross multiple state agencies and the vast majority of them have funding available within the next year. Of the potential state program options, the California River Parkways program could be the most promising source of state funding as a portion of the proposed Class I Bike Path is located adjacent to the Sacramento River along the SEIP. Securing funding from the California River Parkways grant program represents an opportunity for the state to provide funding to a multi-benefit flood project. This represents a unique opportunity to implement a multi-benefit project that is consistent with state policy goals and objectives in the Sacramento Capital Region.

Table 2. State Funding Programs

Funding Source	Timing for Expected Call for Projects
State Programs	
Local Transportation Fund	Undisclosed
California Bicycle Transportation Account	Expected in 2018
State Active Transportation Program	Expected in 2018
Urban Greening Program	Funding cycles are contingent upon the number of competitive applications.
California River Parkways Program	Potentially Expected in 2018
California State Parks and Recreational Trails Program	Expected in 2018 at the earliest
Caltrans Transporting Planning Grants	The next grant applications for Fiscal Year 2018-19 are due by February 23, 2018
Highway Safety Improvement Program	The timing and magnitude of the request for proposals is determined by the funding appropriations.
Land and Water Conservation Program	Expected in 2018
Delta Conservancy Prop 1 Grant	The concept proposal for the Fiscal Year 2017-2018 grant was due August 31, 2017. The next call for projects is expected in 2018.
Conservation Fund Grant Program	The final funding deadline for the upcoming 2018-19 funding cycle is October 2, 2017
2018 Parks Bond	Is being targeted for the 2018 ballot.

Regional Funding

Potential regional funding programs include the Regional ATP, Air Quality, Regional Bicycle & Pedestrian Funding Program (BPFP), Community Design, Transportation Demand Management (TDM) and Regional/Local Funding Programs. The funding cycles for these programs occur approximately every two years, and these programs all anticipate issuing their next request for projects in 2018.

Other Potential Funding

Locally, the City is initiating a new Measure E sales tax which will be used to leverage trail construction and O&M, among other things. This is a new funding source that was approved by West Sacramento voters and the City is currently developing a policy for prioritizing use of the Measure E funds, but it is a potential funding source to leverage outside resources to implement the levee trail recommendations included in this report. Other private/local available funding for pedestrian projects could come from development projects, either in the form of improvements constructed directly by developers or through development fee programs.

4.6.2 Long Term Operations and Maintenance

The cost of long term operations and maintenance could be funded locally by the City, by capitalizing the long-term maintenance costs as part of the overall project construction, or through a volunteer Adopt-a-Trail program, or a combination of methods. An Adopt-a-Trail program would work to identify volunteer stewards along portions of the trail that would provide time and or donations to offset long-term O&M costs. This type of program would allow individuals, businesses, and organizations to have a stake in the well-being of the trail system.

5 References

Caltrans. (2015). “Highway Design Manual”. December 30, 2015.

City of West Sacramento. (2013). “Bicycle, Pedestrian and Trails Master Plan”. May 2013.

City of West Sacramento. (2016). “General Plan 2035”. November 2016.

City of West Sacramento. (2003). “Parks Master Plan”. September 2003.

California Department of Water Resources. (2014). “Guidance for Development of a State-Led Feasibility Study”. December 2014.

State of California. California Code of Regulations, Title 23, Article 8, Section 132, Bicycle Trails.

U.S. Army Corps of Engineers. (2015). “Policy and Procedural Guidance for Processing Requests to Alter US Army Corps of Engineers Civil Works Projects Pursuant to 33 USC 408.” Engineer Circular 1165-2-216, Washington, DC. September 30, 2015.

WSAFCA. 2014. Southport Sacramento River Early Implementation Project Environmental Impact Report. August 2014.

Appendix A. Preliminary Cost Estimate

HDR Engineering, Inc.

Project	West Sacramento Bike Trail	Computed	VFR	Date	08/14/17
Subject	Engineer's Construction Cost Estimate	Checked	HL	Date	08/15/17
Task	Southport Bike Trail Loop - Cost Estimate				

Construction Cost Summary

Item No	Item	Item Cost*
1	Main Trail - Southport Levee Crown - Class 1	$1,526,100
2	Lake Washington Trail - Class 1	$1,797,900
3	Parking A - Future Locks Drive Parking at Levee	$323,800
4	Parking B - Linden at Levee	$853,300
5	Parking C - Davis & Village Parkway/Levee	$923,900
6	Parking D - Future Riverpark Parking	$529,900
	* *Rounded to nearest hundred*	**Total =** **$5,954,900**

Main Trail - Southport Levee Crown - Class 1

Item No	Item	Quantity	Units	Unit Cost	Total Item Cost
1	Mobilization (10% of items 4-12)	1	LS	$105,000	$105,000
2	Traffic Control	1	LS	$10,000	$10,000
3	SWPPP	1	LS	$5,000	$5,000
4	Surveying	1	LS	$15,000	$15,000
5	Intersection Safety Treatment	2	Each	$15,000	$30,000
6	Aggregate Base - Class 2 (6 inch Soft Shoulder)	1,600	CY	$68.00	$108,800
7	HMA (Type A) (3 inch thick)	5,400	TN	$153.00	$826,200
8	Pavement Striping (4" Centerline)	26,700	LF	$1.00	$26,700
9	Remove Thermoplastic Striping (SRR RM57.2 - Center & Edge Lines)	6,800	LF	$2.00	$13,600
10	Stop Bar & XING AHEAD Bike Pavement Markings	7	Each	$300	$2,100
11	Bollards	27	Each	$1,000	$27,000
12	Stop Signs	7	Each	$244	$1,708
13	Trail informational Signage (assumed 2 per Stop Sign)	14	Each	$200	$2,800
				Subtotal	**$1,173,908**
				30% Contingency	**$352,172**
				Total	**$1,526,080**

Lake Washington Trail - Class 1

Item No	Item	Quantity	Units	Unit Cost	Total Item Cost
1	Mobilization (10% of items 4-24)	1	LS	$124,000	$124,000
2	Traffic Control	1	LS	$10,000	$10,000
3	SWPPP	1	LS	$5,000	$5,000
4	Surveying	1	LS	$15,000	$15,000
5	Clearing and Grubbing	1	LS	$15,000	$15,000
6	Misc. Signage Relocations	1	LS	$1,500	$1,500
7	Road Barrier Demo	8	Each	$1,000	$8,000
8	Tree Removal (Large)	1	Each	$5,000	$5,000
9	Tree Removal (Small)	10	Each	$2,500	$25,000
10	Plantings (Assumed Total of 15' Wide Planting Area)	67,200	SF	$5.00	$336,000
11	Irrigation - Planting areas (pop-up spray heads)	67,200	SF	$2.00	$134,400
12	Intersection Safety Treatment	4	Each	$15,000.00	$60,000
13	Bike Trail - AC Path Header Board and Stakes	14,340	LF	$3.00	$43,020
14	Aggregate Base - Class 2 (10 inch thick base)	2,655	CY	$68.00	$180,527
15	HMA (Type A) (3 inch thick)	1,600	TN	$153.00	$244,800
16	Imported Engineered Fill	1,300	CY	$15.00	$19,500
17	Rough Grading Excavation	1,300	CY	$5.00	$6,500
18	Drainage Swale/Ditch Excavation	332	CY	$150.00	$49,789
19	Concrete - Roadway Curb (6 inch)	4,481	LF	$15.00	$67,215
20	Pavement Striping (4" Centerline)	7,170	LF	$1.00	$7,170
21	Stop Bar & XING AHEAD Bike Pavement Markings	8	Each	$300	$2,400
22	Bollards	18	Each	$1,000	$18,000
23	Stop Signs	8	Each	$244	$1,952
24	Trail informational Signage (assumed 2 per Stop Sign)	16	Each	$200	$3,200
				Subtotal	**$1,382,973**
				30% Contingency	**$414,892**
				Total	**$1,797,865**

HDR Engineering, Inc.

Project	West Sacramento Bike Trail	Computed	VFR	Date	08/14/17
Subject	Engineer's Construction Cost Estimate	Checked	HL	Date	08/15/17
Task	Southport Bike Trail Loop - Cost Estimate				

Parking A - Future Locks Drive Parking at Levee

Item No	Item	Quantity	Units	Unit Cost	Total Item Cost
1	Mobilization (10% of items 4-17)	1	LS	$21,000	$21,000.00
2	Traffic Control	1	LS	$10,000	$10,000.00
3	SWPPP	1	LS	$5,000	$5,000.00
4	Surveying	1	LS	$5,000	$5,000.00
5	Clearing and Grubbing	0.4	AC	$7,300	$2,959.05
6	Planted Drainage Bioswales (15% of Parking area)	2,649	SF	$5.00	$13,242.75
7	Irrigation - Planting areas (pop-up spray heads)	2,649	SF	$2.00	$5,297.10
8	Concrete - Parking Curb (6 inch)	577	LF	$15.00	$8,648.55
9	Aggregate Base - Class 2 (10 inch thick base)	545	CY	$68.00	$37,057.90
10	HMA (Type A) - Parking (3 inch thick 85% of Parking area)	278	TN	$153.00	$42,523.94
11	ADA Pedestrian Access Ramp to Levee Crown	1	LS	$91,900.00	$91,900.00
12	Pavement Striping (Parking Stalls)	800	LF	$1.00	$800.00
13	Parking Stall Wheel Stops (Recycled Rubber)	40	Each	$44.50	$1,780.00
14	Stop Bar & XING AHEAD Bike Pavement Markings	2	Each	$300.00	$600.00
15	Bollards	2	Each	$1,000.00	$2,000.00
16	Stop Signs Bike and Vehicle	2	Each	$244.00	$488.00
17	Signage	4	Each	$200.00	$800.00
				Subtotal	**$249,097**
				30% Contingency	**$74,729**
				Total	**$323,826**

Parking B - Linden at Levee

Item No	Item	Quantity	Units	Unit Cost	Total Item Cost
1	Mobilization (10% of items 4-16)	1	LS	$58,000	$58,000.00
2	Traffic Control	1	LS	$10,000	$10,000.00
3	SWPPP	1	LS	$5,000	$5,000.00
4	Surveying	1	LS	$5,000	$5,000.00
5	Clearing and Grubbing	1.75	AC	$7,300	$12,792.60
6	Planted Drainage Bioswales (15% of Parking area)	11,450	SF	$5.00	$57,251.25
7	Irrigation - Planting areas (pop-up spray heads)	11,450	SF	$2.00	$22,900.50
8	Concrete - Parking Curb (6 inch)	2,363	LF	$15.00	$35,450.25
9	Aggregate Base - Class 2 (10 inch thick base)	2,356	CY	$68.00	$160,209.26
10	HMA (Type A) - Parking (3 inch thick 85% of Parking area)	1,202	TN	$153.00	$183,840.13
11	ADA Pedestrian Access Ramp to Levee Crown	1	LS	$91,900	$91,900.00
12	Pavement Striping (Parking Stalls)	3,200	LF	$1.00	$3,200.00
13	Parking Stall Wheel Stops (Recycled Rubber)	160	Each	$44.50	$7,120.00
14	Stop Bar - Vehicle	1	Each	$300.00	$300.00
15	Stop Signs Vehicle	1	Each	$244.00	$244.00
16	Signage	16	Each	$200.00	$3,200.00
				Subtotal	**$656,408**
				30% Contingency	**$196,922**
				Total	**$853,330**

HDR Engineering, Inc.

Project	West Sacramento Bike Trail	Computed	VFR	Date	08/14/17
Subject	Engineer's Construction Cost Estimate	Checked	HL	Date	08/15/17
Task	Southport Bike Trail Loop - Cost Estimate				

Parking C - Davis & Village Parkway/Levee

Item No	Item	Quantity	Units	Unit Cost	Total Item Cost
1	Mobilization (10% of items 4-17)	1	LS	$63,000	$63,000.00
2	Traffic Control	1	LS	$10,000	$10,000.00
3	SWPPP	1	LS	$5,000	$5,000.00
4	Surveying	1	LS	$5,000	$5,000.00
5	Clearing and Grubbing	1.9	AC	$7,300	$14,037.92
6	Planted Drainage Bioswales (15% of Parking area)	12,565	SF	$5.00	$62,824.50
7	Irrigation - Planting areas (pop-up spray heads)	12,565	SF	$2.00	$25,129.80
8	Concrete - Parking Curb (6 inch)	2,638	LF	$15.00	$39,564.90
9	ADA Pedestrian Access Ramp to Levee Crown	1	LS	$91,900	$91,900.00
10	Aggregate Base - Class 2 (10 inch thick base)	2,585	CY	$68.00	$175,805.19
11	HMA (Type A) - Parking (3 inch thick 85% of Parking area)	1,319	TN	$153.00	$201,736.45
12	Pavement Striping (Parking Stalls)	3,600	LF	$1.00	$3,600.00
13	Parking Stall Wheel Stops (Recycled Rubber)	180	Each	$44.50	$8,010.00
14	Stop Bar - Bike Pavement Markings and Vehicle	2	Each	$300.00	$600.00
15	Stop Signs - Bike and Vehicle	2	Each	$244.00	$488.00
16	Trail informational Signage (assumed 2 per Stop Sign Bike)	2	Each	$200.00	$400.00
17	Signage	18	Each	$200.00	$3,600.00
				Subtotal	**$710,697**
				30% Contingency	**$213,209**
				Total	**$923,906**

Parking D - Future Riverpark Parking

Item No	Item	Quantity	Units	Unit Cost	Total Item Cost
1	Mobilization (10% of items 4-16)	1	LS	$36,000	$36,000.00
2	Traffic Control	1	LS	$10,000	$10,000.00
3	SWPPP	1	LS	$5,000	$5,000.00
4	Surveying	1	LS	$5,000	$5,000.00
5	Clearing and Grubbing	0.9	AC	$7,300	$6,792.22
6	Planted Drainage Bioswales (15% of Parking area)	6,080	SF	$5.00	$30,397.50
7	Irrigation - Planting areas (pop-up spray heads)	6,080	SF	$2.00	$12,159.00
8	Concrete - Parking Curb (6 inch)	1,305	LF	$15.00	$19,579.50
9	ADA Pedestrian Access Ramp to Levee Crown	1	LS	$91,900	$91,900.00
10	Aggregate Base - Class 2 (10 inch thick base)	1,251	CY	$68.00	$85,062.96
11	HMA (Type A) - Parking (3 inch thick 85% of Parking area)	638	TN	$153.00	$97,609.75
12	Pavement Striping (Parking Stalls)	1,800	LF	$1.00	$1,800.00
13	Parking Stall Wheel Stops (Recycled Rubber)	90	Each	$44.50	$4,005.00
14	Stop Bar - Vehicle	1	Each	$300.00	$300.00
15	Stop Signs Vehicle	1	Each	$244.00	$244.00
16	Signage	9	Each	$200.00	$1,800.00
				Subtotal	**$407,650**
				30% Contingency	**$122,295**
				Total	**$529,945**