City of Visalia

Waterways and Trails Master Plan

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Visalia Waterways and Trails Master Plan

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City of Visalia

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Creating Environments People Enjoy

In Association With:
City of Visalia
Waterways and Trails Committee

Acknowledgements

City of Visalila

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1.0 EXECUTIVE SUMMARY

Why a Trail Master Plan:

The Visalia Waterways and Trails Master Plan is a long range planning tool for the development of a multi-purpose trail system along the significant community waterways. It establishes a network of trails that link neighborhoods to parks, schools, and the downtown. The plan recommends policies that encourage the development of the creek as an amenity to the residential and commercial areas. It envisions "daylighting" Mill Creek in the downtown, and creating natural green spaces and urban parks. These riparian corridors will provide habitat for local fauna, and restore native plants to the developed area. It is a proven fact that trails and greenways increase property values, enhance livability, and expand recreational opportunities.

The Visalia Waterways and Trails Master Plan establishes the preferred alignment and design of a multi-purpose trail system networking Class I and Class II trails within the City of Visalia. The trails and multi-use pathways for bicycling, walking, and roller-blading are intended to promote and expand alternative forms of transportation and provide new recreational opportunities along the waterways consistent with the goals set forth in the City's Bikeway Plan. The Master Plan will also identify open space opportunities for riparian landscaping and identify development strategies that will minimize potential conflict with adjacent development.

Protection for Landowners:

It has been the practice of the City of Visalia to work in cooperation with landowners, water districts, developers, and all other interested parties when acquiring or developing waterway setbacks. It has been, and will continue to be, the practice of the City of Visalia to acquire setbacks at the time of development by fee title. It is not the intent of this plan to develop trails prior to the development of adjacent properties unless there is support from adjacent property owners.

Progress being Made:

The following is a summary of projects undertaken during the past few years which demonstrate progress in acquiring and developing trails along waterways:

* Transportation Enhancements (TE) Mitigation Grant - In June 2004 the City received notice that a project was recommended to receive $656,000 from TE funds. The Packwood Creek Trail project consists of the acquisition of one acre of riparian setback, and the construction of one mile of trail from east of Mooney Blvd. to County Center Drive.

* Waterway Setback Impact Fee Increase - In November 2003, City Council approved an increase to the Waterway Setback Impact Fee to fund the acquisition of additional setback area.

* Shannon Ranch Subdivision - Centex Homes developed a section of the Modoc Ditch within the Shannon Ranch Subdivision that will serve as a model for the development of the riparian areas in the subdivisions. The developer provided additional setback area, and developed a trail with riparian landscaping.

* Mill Creek, Chinowth to Demaree - Acquisition of approximately 3 acres on the south side of Mill Creek. Area is landscaped, and 1,000 L.F. of trail was built.

* Mill Creek, Demaree to Tulare County Administration Complex - The City has received grant funding and built approximately .6 mile of trail along Mill Creek and has received a donation of 1,100 L.F. of trail right-of-way.

* Mill Creek, Hobo Jungle Conservation Area - City was successful in obtaining habitat grant funding to purchase approximately 4 acres of oak riparian woodland.

* St. Johns River Trail from Mc Auliff to Road 148 alignment - City received a grant to construct .5 miles of trail along the St. Johns River. The trail was completed in the Spring of 2009.

* Tiffany Ranch subdivision development adjacent to Mill Creek includes single loaded streets with landscaping and a path along the creek.

* Mill Creek Trail from Mill Creek Park to McAuliff - City received a grant to contract .5 miles of trail along Mill Creek.

* Mill Creek Trail – several sections of trails and landscaping have been constructed along Mill Creek in adjacent subdivisions.

* St. John's River – City received $817,000 grant to improve 12 acres along the river at Ben Maddox Way.

* Santa Fe Trail – City will use TE and Measure R funds to construct this trail section from Tulare Avenue to Avenue 272.

* St. John's River Trail from Road 148 alignment to Cutler Park – City will use TE and Measure R funds to purchase right-of-way and construct .6 miles of trail along the St. John's River.

* Will use CMAQ, TE and Measure R funds to construct additional trails along Packwood Creek (Cedar to RR crossing), Packwood Creek (Caldwell to Cameron), Packwood Creek (County Center to Visalia Parkway), Packwood Creek (Crumel to College) and Modoc Ditch (Dinuba Blvd. to Giddings).

Focus of the Trail System:

The Master Plan focuses on three of Visalia's major waterways flowing East to West as part of the Kaweah Delta system. Packwood Creek, Cameron Creek, and Mill Creek currently serve as water conveyance, flood control, and species habitat. The proposed network of waterway trails is designed to link with the existing St. John's River Parkway trail and the city's system of bike laws and paths.

The City of Visalia has an adopted bikeway plan, which formally established the framework of goals, policies, procedures, and standards for the development of a citywide bicycle transportation network. That document is the impetus behind the preparation of these Preliminary Alignment Plans.

The planning effort for these Preliminary Alignment Plans has been conducted within the context of a public outreach program designed to involve all those interested and affected by the proposed trail. Interviews with key City staff, public agencies, advisory committees, adjacent property owners, and public workshops were used to fully engage and explore issues important to interest groups and the public at large. This process is further described in Section 3.0.

Section 4.0 presents the project vision statement and goals as developed by the Waterways Trails Advisory Committee. This section further describes a long-range plan to enhance the city's bike and recreation trail system to provide a citywide network using the subject waterways as strategic links.
Sections 5.0, 6.0, and 7.0 describe the preferred trail alignment design and provides detailed direction concerning the standards for trail construction and the amenities to support trail uses such as signs, fencing, rest stop facilities, etc.

Section 8.0 discusses the special issues associated with the various waterways in this study ranging from protection to adjoining landowners, coordination with irrigation district, trail operations, and maintenance and liability.

Section 9.0 contains suggested guidelines for new development adjacent to the watering system covering both residential and non-residential. Section 11.0 contains information concerning implementation of this trail system.

Section 10.0 contains implementation details and recommendations. This section includes a cost estimate and list of funding sources, as well as concepts for securing funding. Trail maintenance, liability issues and private property protection are discussed in this section.

Packwood and Cameron Creeks:
Packwood Creek traverses approximately 5.8 miles between Road 148 and Avenue 272, while Cameron Creek consists of approximately 5.0 miles of mostly rural undeveloped creekway stretching between Mooney Grove Park to Road 156. This study presents a comprehensive analysis of existing conditions, opportunities and constraints as the basis for selecting a preferred waterway trail alignment. This information is presented in Appendix A.

Mill Creek:
The inclusive portion of Mill Creek for the purposes of this study is the 8.4 Mile reach from Road 156 East to Plaza Park near Hwy. 198. Of the three waterways in this study, Mill Creek offers a direct connection to and traverses the downtown area. Therefore, this document explores opportunities to expose Mill Creek at key locations in the downtown. This target is further described in Appendix B Redevelopment Opportunities.

2.0 PROJECT BACKGROUND

The idea of enhancing the waterways began in the 1970's with the goal of establishing a multi-purpose trail along the St. Johns River. This led to the adoption of the St. Johns River Master Plan in 1988, and soon after the development of the Waterway Setback Policy in the 1989 Conservation, Open Space, Park and Recreation Element of the General Plan. This policy provided for the dedication of setbacks along principle waterways for the purpose of preserving and enhancing selected waterways and adjacent corridors. These corridors have become a valuable community resource to serve as plant and wildlife habitats, flood control and irrigation components, connections between open spaces, and recreational uses. These policies were eventually incorporated in the 1993 update of the Land Use Update.

Since 1989, the City of Visalia has been planning and installing bikeways. To date, the City has created over 25 miles of Class II bike lanes extending along both sides of most arterial streets, 11 miles of Class I trails, and 5 miles of Class III facilities. The City of Visalia recognizes the importance of an effective bike transportation system and also recognizes the unique value of the many waterways traversing the city. This Master Plan was commissioned to study the opportunities of linking the waterways with the bike land system to create a comprehensive recreational trail program citywide.

This plan presents goals, policies, standards, and maps that direct the installation of Class I trails along three (3) principle waterways: Mill Creek, Cameron and Packwood Creeks. These specific bikeway segments are consistent with the adopted Bicycle Transportation Plan. Their installation is also supported by the General Plan Circulation Element.

In June 2001, the City of Visalia hired RRM Design Group, to identify opportunities and constraints, evaluate alternative alignments, and prepare specific recommendations for the waterway trails' design and location. This plan presents the results of that consultant and City-staff effort.

3.0 INTRODUCTION AND PROJECT SETTING

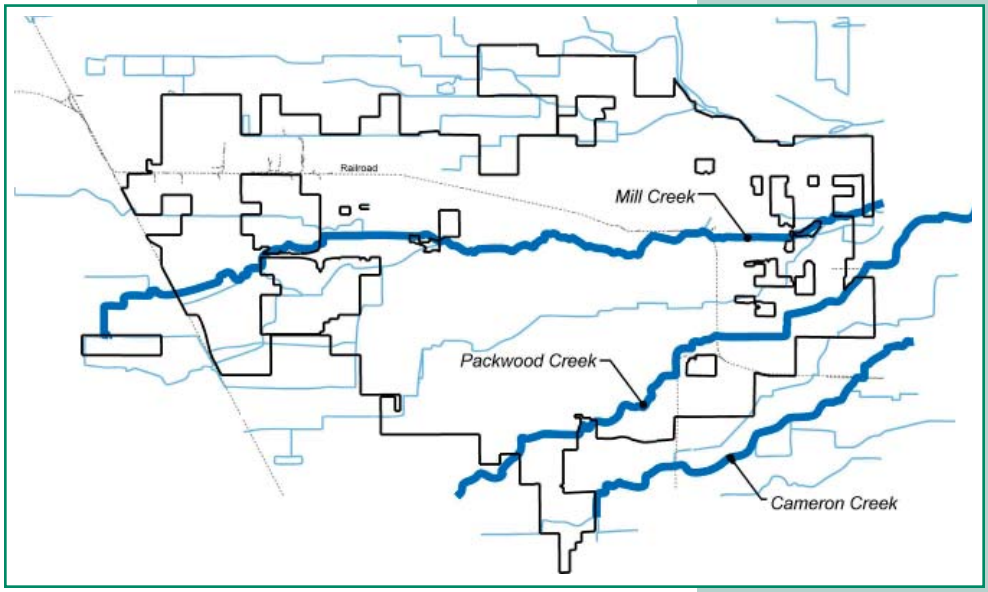
This study is the result of a directed effort on the part of the City of Visalia to carry out established goals contained in the Bikeway Plan to develop an extensive network of bikeways along selected waterways for expanded transportation and recreational trail purposes within the community. This study provides guidance on two "settings" defined by the user experience as "urban" or "rural". Mill Creek running through the heart of the downtown presents a unique urban character, where a series of urban green spaces "uncover" Mill Creek and provide residents and visitors with park and open spaces. Packwood and Cameron Creeks are considered rural bordering and interacting with rural settings and activities.

Purpose

The purpose of this Preliminary Alignment Plan is to establish a recommended trail alignment and set of design standards for the multiple recreational uses along the "Waterway Trails" that is respective of the physical constraints along Mill, Packwood and Cameron Creek corridors. The plan is intended to identify the issues associated with the trail's construction and present feasible solutions for both its design and long-term operation and maintenance. The planning effort for the Waterway Trails has been conducted within the framework of a public participation program, and designed to involve all those interested and affected by the proposed trail.

Project Study Area

The Visalia Waterways and Master Plan project study area discussed in this document is located within the City of Visalia along three creek corridors; Mill Creek corridor between Plaza Drive at Hwy. 198 and Road 156, Packwood Creek corridor between Road 156 and Avenue 272, and Cameron Creek corridor between Mooney Grove Park and Road 156. The City of Visalia is currently studying future projects either in support of or interacting with the proposed trail alignments including parks major street crossings, future development and growth. Figure 1 illustrates the project study area.



Project Study Area Map

Mill Creek:

The Mill Creek Trail consists of the seven segments divided into three (3) reaches described below and illustrated in the Mill Creek Reach Section Map (see page A-1).

Western Reach Segments:

1. Plaza drive cross hwy. 198
2 Plaza drive to Shirk
3. Shirk to Linwood
4. Linwood to Mooney Blvd.

Downtown District Segments:

5. Mooney Blvd. to Santa Fe
6. Santa Fe to Lovers Lane

Eastern Reach Segments:

7. Lovers Lane to Road 156

The topography of the Mill Creek corridor varies with the diverse adjacent property use. The eastern portion of Mill Creek transitions from a standard narrow channel or bermed ditch to a slightly deeper wider channel with primarily flat terrain within the setback area. The leveling of the top of bank mainly occurs as Mill Creek encounters residential or commercial development. As Mill Creek approaches the downtown district it transitions into a culvert channel running under most of the downtown area. At West Street, west of Kaweah Delta Community Hospital, Mill Creek "daylights" again and then commences its course west toward Plaza Park. Land use adjacent to the trail corridor consists primarily of agricultural, commercial, and industrial uses east of the downtown core with predominately institutional and residential uses west of downtown. Zoning surrounding the bike trail consists of conservation / open space, agriculture, commercial services, office / planned development, public facilities, and residential areas.

Packwood Creek:

The Packwood Creek Trail corridor consists of the five segments described below and is illustrated in the Packwood Creek Reach Section Map (see page A-12).

Packwood Creek Segments:

1. Avenue 272 to Stonebrook Street
2. Stonebrook Park to Santa Fe
3. Santa Fe to Lovers Lane
4. Lovers Lane to Rd. 148/ Power Line Easement
5. Rd 148/ Power Easement to the Future Community Park Site (Road 156)

The topography of the Packwood Creek corridor remains rather consistent running through a diverse variety of adjacent property. The creek channel terrain transitions from high banks that are flat on top functioning as service roads bordering agriculture parcels to a narrow, almost flat terrain at top of bank near residential and commercial properties. At Caldwell Avenue the topography changes to a narrow bank as it runs through a residential area where properties back onto the creek.

Packwood Creek to the east of Lover's Lane continues flat and wide at the top of bank with the creek channel widening prior to McAuliff Avenue. The trail corridor consists primarily of residential, agricultural, commercial, and industrial uses. Zoning surrounding the bike trail consists of conservation / open space, agriculture, commercial services, office / planned development, public facilities, and residential areas.

Cameron Creek:

The Cameron Creek Trail corridor consists of the five segments described below and is illustrated in the Cameron Creek Reach Section Map (see page A-20)

Cameron Creek Segments:

1. Mooney Grove Park to Rd. 128/ Santa Fe
2. Rd. 128/ Santa Fe to Lovers Lane
3. Lovers Lane (North) to Railroad
4. Railroad (North) to T.I.D. Ditch
5. T.I.D. Ditch (North along 148) to Future Community Park Site (Road 156)

The topography of the Cameron Creek corridor also remains consistent as it runs primarily through adjacent agricultural property where the terrain can be characterized as flat with very little elevation change, less than one foot between the top of bank and most of the adjacent property. The trail corridor consists primarily of agricultural and industrial uses. Zoning surrounding the bike trail consists of conservation / open space, agriculture and residential areas.

Planning Process

Data Collection:

Environmental and planning documents, parcel owner information and development proposals, corridor mapping, and field visits formulated the set of working maps and corridor information used in design discussions. Data collected and reviewed includes:

- California Environmental Quality Act (CEQA) City of Visalia Waterways Policy Amendment prepared by Harland Bartholomew & Associates, Inc.
- West Visalia Specific Plan prepared by Community of Visalia Development Department and Quad Consultants, June 1988
- Land Use Element to the Visalia General Plan, September 1991 revised June 1996
- Final Environmental Impact Report, Land Use Element Update to the Visalia General Plan, July 1991
- Draft Environmental Impact Report, Land Use Element Update to the Visalia General Plan, September 1990
- Downtown Visalia Vision Workshops
- Packwood Creek Agreement and Legal Description
- Mill Creek Agreement and Legal Description
- Summary of Comments and Responses to Comments, on the draft Negative Declaration for the Waterways Policy Amendment
- Visalia General Plan - October 88, Conservation, Open Space, Recreation and Parks Element
- City of Visalia Bikeway Plan prepared by Wilbur Smith Associates in association with Quad Engineering, October 20, 1992.

- St. John's River Park Master Plan prepared by Visalia Community Development Department and Jardin Landscape Architecture, November 1988.
- City of Visalia Zoning Master List, amendments through April 2000
- Caltrans Highway Design Manual, Chapter 1000 - Bikeway Planning and Design
- AASHTO's Guidelines for the Development of Bicycle Facilities

Trail Corridor Tour:
The RRM design team members toured the entire length of Mill Creek, Packwood Creek, Cameron Creek and St. John's River Parkway via bicycle and on foot where access was limited. Armed with cameras and field maps, the tour yielded critical information for the understanding of the existing conditions and potential problem areas while clearly illustrating areas most suitable for trail placement. This information played a key role in evaluating alternative alignments relative to actual field conditions.

Key Person Interviews:
A series of personal discussions with property owners and their representatives, interest group representatives, Redwood High School Staff, Tulare Irrigation District, City staff, and public officials took place as an initial step for the proposed trail alignments.

Public Workshop:
An initial public workshop was held on November 15, 2001 at City Hall Council Chambers to provide an open forum for discussion for the preliminary trail and waterway linkages concept focusing on the connections to existing bikeways and the downtown district core. The preliminary waterway trail alignments were presented on maps where the comments, concerns and feedback were recorded. Public workshop notice letters were sent to property owners adjacent to the proposed trail, and an announcement was placed in the local newspaper. The notice letter described the trail planning process along with a brief project description. Property owners, advisory committees, local bike enthusiasts, environmental activists, City facility operators, and City staff from various departments attended the workshop. The total number of attendees was approximately 40.

Document Preparation:
Based on the review of all collected data, key person interviews, field tours, alternative path alignments, and connections to adjacent facilities the optimum or "most preferred trail alignments were developed and evaluated.

This comprehensive process yielded a bike trail alignment within the creek setback that minimized impacts to the adjacent habitat, while providing high recreational value, and is attainable in both the near and long term. These alignments are discussed in further detail in 6.0 of this document.

4.0 PROJECT VISION AND GOALS

The following section describes the city's vision and goals for guiding and establishing the waterway trail. This vision statement and supporting goals were developed by city staff and the Waterways Advisory Committee.

Vision Statement

During Visalia's 150-year existence the creeks that flow through our community have been essential to its development. The St. Johns River, Mill, Packwood, and Cameron Creeks are part of our community heritage and provide habitat to many species of flora and fauna and water to adjacent farmlands. The preservation and restoration of these waterways for public recreation, habitat, and community enjoyment is a high community priority.

The Visalia Waterway Task Force envisions a system of trails and paths along Visalia waterways that are inviting, safe, and accessible for walking, bicycling, hiking, and in-line skating that are a part of an interconnected multi-purpose trail system.

Goals and Objectives

1. **Identify trail alignments along Mill, Packwood, and Cameron Creeks that provide one or more of the following: connections between neighborhoods, recreational opportunities for walking, bicycling, and skating, urban open space, and habitat areas.**

   Objectives:

   A. Provide an attractive recreational facility that encourages community residents and visitors to use non-motorized forms of transportation.
   B. Establish an alignment that connects with existing bikeways and planned Class I and II bikeways wherever possible.
   C. Maximize the user experience by careful alignment and avoidance of offensive visual, auditory, and other negative adjacencies.
   D. Identify alternative alignments where constraints cannot be overcome in either the short- or long-term.
   E. Provide an alternative to heavily travelled parallel roadways

2. **Develop a plan to restore and enhance the landscaping within Visalia's waterway setback. The plan should address the needs of trail users, adjacent property owners, provide habitat, uses plants native to the region, and require minimal maintenance.**

   Objectives:

   A. Protect and minimize impacts to environmentally sensitive habitats along the trail through fencing, landscaping, and appropriate trail placement.
   B. Integrate historical and educational elements into the trail design.

C. Provide for user needs by including rest stops, benches, staging areas, trail access points, and directional signage.
D. Incorporate habitat restoration and enhancement activities.
E. Minimize impacts to irrigation district operations and provide for maintenance access to waterway channels.
F. Determine appropriate native trees and shrubs that should be incorporated into waterway improvements.
G. Explore watering options such as drip irrigation vs. manual watering and determine which will be most cost effective.

3. Where Mill Creek currently flows underground through the Downtown, identify opportunities to open the creek to provide urban open spaces such as plazas, walkways and related commercial development.

Objectives:

A. Host public forums to discuss the community's needs for open space and recreational opportunities in the downtown.
B. Present initial concepts to achieve this goal for key locations in downtown.
C. Follow up initial concepts with a comprehensive urban design plan for downtown.

4. Design a trail system that is accessible to all and serves the needs of commuters and recreational users.

Objectives:

A. Design and plan for a trail that will serve both commuter and recreational cyclists (a Class I bikeway), walkers, and bladers.
B. Design the facility to meet state and federal standards, and where feasible, the Americans with Disabilities Act.
C. Bicycle parking and storage should be incorporated into the design of waterway improvements in order to promote commuting.
D. Include staging areas and rest stops along key waterway improvement sections that include amenities such as seating, drinking water, lighting, and bicycle parking.

5. Trails should provide a sense of security for the user and adjacent property owners and be well designed and identifiable.

Objectives:

A. Use recreational trail legislation to aid in protecting adjacent property owners from liability associated with trail.
B. Implement lighting standards and regulations to satisfy the needs of trail users and adjacent property owners.
C. Signage should inform users of appropriate travel speeds and other rules and regulations.
D. Minimize impacts to adjacent properties by appropriate design and operation of the facility, including fencing, landscaping, and other improvements.

6. **Identify areas were creeks can be modified to provide additional storm water storage.**

Objectives:

A. Collaborate with ongoing flood damage prevention measures such that the trail can be integrated with flood protection improvements where possible.
B. Acquire land along the waterways for water storage.

7. **Establish development guidelines for adjacent new development that serve to enhance the waterway's safety, access, usability, and integration into neighborhoods.**

Objectives:

A. Adopt development guidelines that support the importance of the waterways system through careful site planning and design practices.
B. Provide a functional facility that serves major and minor destinations, provides relatively direct connections between adjacent developments and the waterways.

8. **The plan shall include an implementation section with cost estimates, prioritization of projects, persons or groups responsible for implementation, and identify possible funding sources.**

Objectives:

A. Design and plan for a multi-use trail that will be affordable to implement.
B. Establish a Waterways and Trails Implementation Committee to be responsible for the implementation and development of funding sources for waterway improvements.

Trail Linkages Plan

The opportunity to create a truly unique public recreation system for the City of Visalia through the development of the Waterways and Trails Master Plan has been a long-standing City goal. Building on the direction provided in the City's General Plan, Circulation Elements, and Parks and Recreation Element, the Waterways Trail Master Plan envisions a community recreation trail system that goes beyond waterway trails and establishes a vision for a system of recreational trails, both on and off street, that will ultimately link all areas of Visalia to important community facilities and services City-wide. Linkages from the waterway trails to neighborhood schools, parks, regional open space corridors, and other destinations can be achieved.

One of the most exciting opportunities afforded by this greater vision is the ability to create realistic and important connections from the City's residential neighborhoods and districts to the downtown core. The ability to promote easy, convenient access by pedestrians and bicyclists helps to re-enforce the notion of a pedestrian-oriented town center and further defines the uniqueness of the City of Visalia within the region. To this end, the Waterways and Trails Master Plan identifies the key connections and linkages that will be necessary to achieve this vision.

The Trail Linkages Plan identifies the future Class I recreational trails and the Class II bike lanes that should be added to the City's Bicycle Network. The following provides an overview of this citywide recreation trails network:

Destination Downtown

Lying at the heart of Visalia is the downtown core. A lively mix of employment, shopping, entertainment and civic uses surrounded by residential neighborhoods, largely to the north, west, and south with mostly industrial and commercial uses located to the east. Piercing the downtown core is Mill Creek, a waterway that has been redefined, redirected, and altered substantially on a journey through the downtown area. This, however, provides unique opportunities to create a series of urban green spaces associated with the exposure of Mill Creek, bringing a rich tapestry of soft green recreational spaces to Visalia's central shopping, entertainment and business district. Radiating outward from the downtown core are a number of principal recreation trails, both bikeways and pedestrian routes that can provide direct access to the surrounding residential community. These include Santa Fe Avenue, Goshen Avenue, and the east and west reaches of Mill Creek. These bicycle and pedestrian connections radiate outward like the spokes on a wheel connecting with the recreational ring trail. (See Ring Recreational Trail Map on the following page.)

The Ring Recreational Trail

Encircling the City of Visalia, the Trail Linkages Plan envisions a "ring recreational trail" that uses some of the principle waterway alignments and existing trail systems to create a completed loop around the City, see map on the next page.

Beginning on the south portion of Visalia, the Ring Recreation Trail would begin at Mooney Grove Park and extend eastward along Cameron Creek to the power line easement. The trail would proceed north along the power line easement to Cutler Park, and then west along the St. John's River Parkway to the new Sports Park located in the Shannon Ranch planning area. A new Class II trail would depart from the St. John's River parkway and proceed through the Shannon Ranch planning area to Demaree Street where it would turn southward connecting to a proposed Class II bike lane on Riggin Avenue. At Riggin, the Class II extends west to another proposed Class II lane on Shirk Street. Shirk's bike lane continues southward to an existing Class II path on Goshen Avenue.
Along Goshen Avenue, the trail would extend west to Plaza Drive and then south to Plaza Park and the western gateway to Visalia. Making the completed connection between Plaza Park and Mooney Grove, the ring trail would use a number of existing Class II bike lanes along Walnut Avenue, Linwood, Whitendale Street and finally County Center Drive where it connects back to Mooney Grove Park and the Cameron Creek waterway trail.

The Ring Recreational Trail provides unique connections to a number of existing and planned parks, residential neighborhoods, school facilities, neighborhood shopping districts, recreation areas and provides critical connections to recreation trails and pedestrian systems radiating out from the downtown core.

In this fashion by combining "Destination Downtown" with the "Ring Recreational Trail", the waterways and trails proposal outlined in this report form the first critical linkages of an overall City-wide recreation trails system that support the goals outlined in this document, and the vision set forth by the City of Visalia in its General Plan and City leadership. The conceptual linkages plan as outlined in this report is intended to provide a vision for a citywide recreation trail system of which the Waterways Trails Master Plan can play an important role.

5.0 TRAIL ALIGNMENT AND DESIGN OBJECTIVES

To aid the design process of the waterway trails preliminary alignment, a set of planning objectives were established. The following Trail Alignment and Design Objectives resulted from compiling project goals with the opportunities and constraints analysis data identified within the project study area, and the need to resolve identified project issues. The following Trail Alignment and Design Objectives shall serve as a set of refined project goals guiding the outcome of the proposed trail design and its location along the designated waterway corridors.

Trail Alignment Objectives

A. Look for opportunities to support and enhance commuter trail use.
B. Maintain consistency with the Visalia Bikeway Plan.
C. Look for important connections -- align trail with other bike routes, transit stops i.e. "Park & Ride", urban uses, and residential cul-de-sac and knuckles.
D. Integrate and link trail systems to greenbelts, open space, parks, schools and downtown.
E. Look for logical street and highway crossings.
F. Avoid vehicle and pedestrian conflicts to the greatest extent possible.
G. Minimize creek and drainage crossings.
H. Look for good connections for law enforcement and maintenance access.
I. Utilize signalized intersections at street crossings where possible.
J. Alignment of trail allows for logical placement of staging areas.
K. Avoid areas of extreme topography.
L. Alternative alignments, if considered, must preserve and enhance the commuter aspect of the trail.

Trail Design Objectives

A. Provide separation of trail users from active railroad tracks.
B. Provide secured, controlled access for:
    - Police and Fire Access
    - Trail Maintenance
C. Reduce potential for vandalism, theft and trespass through signage and fencing.
D. Provide for directional and safety signage.
E. Provide security lighting at staging areas and road crossings.
F. Locate staging areas or upgrade transit stops at appropriate locations along trail that provide restrooms, telephone, drinking water, bike racks and lockers, trash receptacles, shelter / seating, and information kiosks.
G. Provide Informational Kiosks at major staging areas for:
    - Rules of trail use and hours of operation, directional signing ("you are here").
    - Location map for nearby services, significant information references, and mapping.

H. Provide interpretive exhibits at appropriate locations along the trail corridor for:
   - Environmental and historical information.

I. Incorporate consistent design character for all areas of the trail corridor.

J. Choose appropriate landscape materials, such as native plant species.

K. Provide for physical buffers between trail and adjacent uses or habitats.

L. Use fences and/or other barriers:
   - As a separation between the trail and railroad tracks adjoining private property
   - As a separation from other sensitive adjacent land uses

6.0 PREFERRED TRAIL ALIGNMENT

The Trail Alignment Plan represents the preferred trail placement considering the Opportunities and Constraint studies and Design Criteria established through the Design Development process. Since alignment will likely be implemented in phases, some trail sections may have interim alignment solutions before reaching the long-term preferred alignment goals.

The Design Process:

The preferred trial alignment is a result of design development process to achieve the most desirable route for the waterway trails emphasizing and utilizing connections to existing bikeways.

The design development process included the initial segment map creation and evaluation by the Design Team consisting of the City of Visalia Waterways and Trails Advisory Committee and RRM Design Group. The preliminary alignment was then presented on scaled maps developed for a Public Outreach Workshop where concerns and ideas were addressed and recorded as additional feedback for the preferred trail alignment.

Given the original design criteria from the City of Visalia to route trails along the designated waterways, the alignment alternatives were limited to routing a Class I trail on the north or south bank within the creek setback. Limitations forcing the alignment of the preferred route outside the creek setbacks included existing residential or commercial property backing onto the creek. In this case, the trail was routed to an existing or proposed Class II bike lane running along each side of adjacent streets. (City should confirm presence of adequate road width.)

Mill Creek Western Reach: Preferred Alignment Description

The preferred Trail Alignment Plan is presented in the seven Opportunities and Constraints segment maps for closer evaluation. The following narrative description references Mill Creek Western Reach Segment Maps (1) through (4) in sequence from West to East for the preferred alignment.

From the proposed kiosk location (staging node) near the Plaza Park parking area, the existing Class II bike lanes running north along Plaza Drive, and then east to a proposed bike and pedestrian bridge over Hwy. 198. Across Hwy. 198, the trail splits into a Class I trail begins along the north side of Mill Creek, and a Class II path along Kelsey/ Road 84. The Class I trail continues east along the north side of the creek to Shirk where it connects to proposed Class II bike lanes. The Class II bike lanes reunite with a Class I trail at Mill Creek. The Class I trail then switches to the south side of the creek heading east to a trailside rest area near the southwest corner of the Tiffany Ranch subdivision.

The Class I trail continues east to Akers where it turns and heads south to the existing signal at Hillsdale. After crossing Akers, the Class I trail angles northeast then realigning on the south side of Mill Creek heading east. An alternate route pending City future plans shows a Class I trail heading directly north from the signal on the east side of Akers, and turning east running along the south side of Mill Creek to Crenshaw. The path would then turn into a Class III system due to existing development and narrow street widths in the area. The path continues at Linwood, just south of Mill Creek.

Once at Linwood, the Class I trail continues east along the south side of the creek to an existing signalized crossing at Chinowth and Mineral King. From the crossing, the Class I trail continues east along the south side of Mill Creek eventually making its way down to Mineral King where it connects to Class II bike lanes heading north on Demaree. The Class II bikes lanes continue north past Mill Creek where a Class I trail connects to Demaree.

From Demaree, a Class I trail runs along the south side of Mill Creek turning south and then east again along Mineral King to Main Street. A proposed alternate route is shown running along the south side of Mill Creek to Main Street. Once across Main Street, the Class I trail picks up from and continues northeast through Main Street Park along the south side of the creek to Ranch Street to a proposed bike and pedestrian bridge over Mill Creek.

At the proposed bridge to the north, the path connects to Class II bike lane system running along Main Street, and then northwest to the existing Class II lanes on Mill Creek Drive. From the bridge crossing to the south, an optional Class I trail continues through the County Civic Center parking lot to a mid-block crossing at Woodland. From Woodland, the Class II bike lanes run east along Burrel to the Mooney Blvd. and Burrel Avenue signalized crossing. The Class II bike lanes continue from Mooney Blvd. along Burrel to Dollner, where it turns north connecting to a future Class I trail provided by the school district. The Class I trail runs along the south side of Mill Creek north of Sierra Vista Campus to a proposed mid-block crossing at Giddings. From Giddings, the Class I trail continues east along the south side of Mill Creek through the Redwood High Campus to a mid-block crossing at Conyer Avenue.

Mill Creek Western Reach -Total Length of Multi-Use Trail:
Class I: 4.97 Miles
Alternate Class I: .57 Miles
Class II: 3.29 Miles

Mill Creek Downtown District: Preferred Alignment Description

The Class I trail terminates at the mid-block crossing at Conyer where existing Class II bikes lanes run north connecting to a proposed Class II lane at Main Street, and south to the existing bridge across Hwy. 198. The northern Class II lanes on Conyer at Main Street head west to Jacob. At Jacob, the path continues north on the existing Class II lanes. The path would then turn into a Class III system due to existing development and narrow street widths in the downtown area until it reaches the proposed Class II bike lanes running along Santa Fe.

To the north, the Santa Fe Class II lanes connect with a Class I trail at Oak. Continuing north to School Avenue the Class II connects to another Class I trail heading north along the east side of Santa Fe. Travelling south along Santa Fe, the Class II lanes would cross Hwy. 198 heading south. At the corner of Santa Fe and Oak Street a Class I trail connects to the Santa Fe bike lanes and continues east south of the railroad right-of-way north of Mill Creek. The Class I trail would remain on the south side of the railroad connecting to a mid-block crossing at Burke Street, and then veering south along the tracks to a signalized crossing at Center. A Class II bike lane would pick up from the railroad signal crossing heading east along Center, and then south along Ben Maddox Way to the existing signal at Main Street. The Class II lane would then take commuters north along the other side of Ben Maddox Way. The Class I path would continue after Mill Creek, and run along the north side of Mill Creek through the Oak Grove/ Riparian Conservation Area behind Carl's Jr., where an informational kiosk could be implemented.

The Class I trail remains on the north side of Mill Creek running east through the riparian area, and a trailside rest or staging area to the southwest of the Tiffany Ranch subdivision. The path eventually branches away from the creek west of Lover's Lane. A signalized crossing would be necessary to cross at Lover's Lane where a Class I bike lane south to connect with Mill Creek again, and then head northeast to run along the north side of the creek near the Mill Creek Garden, and a proposed trailside rest area. An alternate Class II bike lane could pick up from the Lover's Lane proposed signalized crossing at the intersection of Mill Creek Parkway. The Class II bike lanes would follow Mill Creek Parkway northeast to Manzanita Street.

Mill Creek Downtown District -Total Length of Multi-Use Trail:
Class I: 1.7 Miles
Alternate Class I: 0.14 Mile
Class II: 1.3 Miles

Kaweah Delta Hospital Pedestrian Path

Kaweah Delta Hospital and the City of Visalia are exploring possible plans for expansion of hospital services downtown. Expansion scenarios would render current alignment descriptions invalid.

Connecting to the pedestrian crossing at Conyer is a proposed pedestrian path running along the north side of Mill through a future office development to a pedestrian crossing at Stevenson. The pedestrian path picks up again on the north side of the creek south of City Hall/ Police station parking area to a pedestrian crossing at Johnson. The pedestrian path continues on the north side of the creek adjacent to the Child Care Center to a pedestrian crossing at Willis. Continuing east on the north side of the creek the pedestrian path runs through an area planned for the future expansion at Kaweah Delta Hospital to a proposed pedestrian crossing at West Street that links to the existing Kaweah Delta Hospital path along the north bank of Mill Creek. This path could be extended into a boardwalk connecting to the alley just south of Checker's incorporating access to proposed outdoor dining at Checker's Restaurant.

Note: The Hospital District Master Plan calls for the enhancement of walkways along Mill Creek, and this should be included in future phases of development whenever feasible.

Alternative Seasonal Creek Realignment

There is a possibility for Mill Creek to be realigned, and opened to provide a more natural meandering look. The creek would be moved north of its current alignment, and would basically extend from Tipton and Center, and flow west to Court and Center. The realignment would provide additional locations for new parcels or park land to the south of the new alignment, with buildings backing up against the Center Street structures and along the creek greenway. Water in the creek would run generally from Tipton and Center, and then be piped under Santa Fe. West of Santa Fe, the creek would resurface to flow west along the City owned alley between Oak and Center until it reached Church Street. West of Church Street, the creek would be placed in pipes to connect with the existing underground flow of Mill Creek at Court and Center.

Mill Creek Eastern Reach: Preferred Alignment Description

Class I trail along the north side of Mill Creek heading northeast to Manzanita Street where it connects with optional or future Class II bike lanes along Mill Creek Parkway. Continuing east along the north side of Mill Creek, the Class I trail crosses over a proposed bike and pedestrian bridge where Evans Ditch branches off from Mill Creek. Just east of the bridge crossing, the Class I trail heads due east along the south side of Mill Creek and Goshen and connecting to the proposed Class I trail running north/ south along the power line easement. A bike and pedestrian bridge crossing will allow trail users to cross Mill Creek heading north. A potential future Class II bike lane will heading east from the bridge crossing, and will run north of the future Community Park Site and further east with future development.

Mill Creek Eastern Reach -Total Length of Multi-Use Trail:
Class I: 1.5 Miles
Alternate Class I: 0.45 Mile
Class II: 0.5 Mile

Packwood Creek: Preferred Alignment Description

The Packwood Creek segment begins at Avenue 272 to the south, and continues northeast to a proposed extension of the existing Class II bike lanes running north/ south on and Demaree and County Center. An informational kiosk is proposed at the end of County Center, and at that location the Class II and Class I system connect to the Class I trail running along the south side of Packwood Creek to the east. As the Class I trail turns south it runs past the east side of a potential elementary school site. The same Class I trail heading east remains on the south side of the creek just north of the proposed South Packwood Commercial Development to a proposed trailside rest area. Continuing east, the Class I trail crosses Mooney Blvd at the Cameron Avenue signal. The Class I trail continues east along the south side of Packwood Creek turning north behind the existing Costco property and around the potential pond/ pocket park with a trailside rest area. The Class I path continues northeast along the south side of the creek to Stonebook Street. A future Cameron Avenue alignment provides the possibility of a Class II path from just southwest of the potential park to Court Street.

The Class I route would follow Stonebook Street to the existing traffic signal at Caldwell Avenue. At Caldwell, a Class II lane travels north into Stonebrook Park, and Class I path continues east along Caldwell Avenue. An alternate or future Class I trail could pick up from Stonebrook Street heading east along the south side of Packwood Creek connecting to the Class I trail along Caldwell Avenue.

The Class I path on Caldwell continues to a proposed Class II bike lane on Court Street connecting to existing Class II bike lanes running north/ south. The Class II bike lanes along Court Street connect with a proposed Class II bike lanes along Whitendale Avenue at a proposed signalized crossing.

The earlier mentioned Class I path along Caldwell eventually turns into a Class I trail running north/ south along the west side of Santa Fe in the abandoned railroad corridor. The Class I trail continues north to a flashing signal crossing where Packwood Creek meets Santa Fe. At the flashing signal crossing, a Class I trail connects and meanders northeast along the south side of Packwood Creek to a trailside rest area. After the rest area, the Class I trail continues following the south side of Packwood Creek to another flashing signal at the railroad and Walnut Avenue. The Class I trail continues east along the south side of Packwood Creek and Walnut Avenue to the existing traffic signal at Ben Maddox, and then on to a non-signalized crossing at Pinkham Street. The trail continues east along the south side of the creek and Walnut Avenue, past the P.U.D. gated entry, and then turning north behind the neighborhood park and following along the east side of Packwood Creek.

The Class I trail continues north along the east side of Packwood Creek, turning again due east to a mid-block crossing at Lover's Lane. The Class I trail picks up from the mid-block crossing heading due east along the south side of Packwood Creek angling northeast clipping the corner of the proposed Diamond Creek Estates. There is a proposed pedestrian bike bridge linking a future park/ pond area to future residential development property. A proposed staging/ rest stop area under a large oak would connect to a mid-block crossing at McAuliff Street. Once across McAuliff, the Class I trail would continue along the south side of Packwood Creek, crossing over Tulare Avenue and running northeast between Packwood Creek and Rio Vista Avenue. The Class I path would then travel east along College Avenue to the Power Line Easement Class I trail which transverses north and south.

An alternate or future trail route Class II bike lanes connects from Lover's lane to the McAuliff mid-block crossing. The Class II bike lane alternative goes from the mid-block crossing at Lover's Lane to a potential signalized intersection at Tulare. At Tulare, the Class II lanes head east to the Power Line Easement Class I trail.

The Power Easement Class I trail heading north intersects with both Packwood Creek and Hwy. 198 where a proposed bike and pedestrian bridge would allow commuters to cross the Highway. Once across Hwy. 198 the Class I trail continues due north. An alternate route along the north side Packwood Creek would journey through the future Community Park Site. The Class 1 trail would continue along the north side of Packwood Creek to Road 152, where it crosses to the south side of the creek and continues to connect with Road 156.

Packwood Creek -Total Length of Multi-Use Trail:
Class I: 7.9 Miles
Alternate Class I: 1.5 Miles
Class II: 1.1 Miles

Cameron Creek: Preferred Alignment Overview

Starting just north of Mooney Grove Park are proposed Class II bike lanes on each side of Road 272. Heading east just before the culvert crossing over the creek, the Class II lanes connect with the Class I trail on the west side or bank of the creek as it veers north. The Class I trail remains on the north side of the side of the Cameron Creek to proposed signalized crossing at Road 128/ Santa Fe. On Santa Fe, the Class I trail heads north to Caldwell Avenue on the existing rail bed. The Class I trail picks up from the signal crossing, and continues east along the north bank of the creek where a trail side rest area might take advantage of the views.

The Class I trail follows the north side of the Cameron Creek corridor northeast through several agricultural parcels to a two-way existing signal crossing at Caldwell Avenue and Lover's Lane. Here Cameron Creek runs in a culvert diagonal to the intersection and day lighting to northeast where the Class I trail resumes and continues along the north side or bank. A trailside rest area might be conveniently located between property boundaries or parcels just north of the midpoint between Lover's Lane and the railroad. The potential pocket park could connect at the existing culvert crossing over the creek. A new railroad crossing would be necessary at the railroad to get bike across. After the railroad crossing, the Class I trail remains on the north side of the creek veering north branching away from the creek running north in the Power Line Easement right-of-way to a traffic signal crossing at Road 148. The Class I trail continues north to a potential signal at Walnut, and follows in the right-of-way all the way to the St. John's River Parkway trail if there is a future crossing at Hwy. 198.

An alternate or future Class I trail could continue following the Cameron Creek corridor on the north bank at the Power Line Easement, crossing Road 148 at the culvert crossing and veering north to Walnut Avenue where a potential signal crossing could be implemented. The alternate Class I route remains on the north side of the creek crossing several service roads eventually leading to future development and Road 156.

Cameron Creek -Total Length of Multi-Use Trail:
Class I: 6.2 Miles
Alternate Class I: 1.3 Miles
Class II: 0.16 Mile

7.0 TRAIL DESIGN STANDARDS

Regulatory Design Framework

The American Association of Highway and Transportation Officials (AASHTO) and the California Department of Transportation (Caltrans) have developed national design standards for bikeway trail design. The Caltrans Highway Design Manual, Chapter 1000: Bikeway Planning and Design, serves as the official design standard for all bicycle facilities in California and is included in Appendix D of this document. The Visalia Waterways Master Plan should use these same standards and recognize them as the minimum development standards for those projects recommended by this Plan.

Caltrans advises that all standards in Chapter 1000 be followed, which also provides a measure of design protection to the City. Not all design options are shown in Chapter 1000. For example, intersections, ramp entrances, rural roads, and a variety of pathway locations are not specified in the Caltrans Highway Design Manual. This section provides details for the specified and non-specified design and operating standards for the Visalia Waterways Master Plan.

Whenever possible, new trail alignments should take advantage of existing crosswalks and traffic signals in order to allow trail users to travel across vehicle lanes. The intent of the plans are to minimize mid-block crossings whenever possible, and maximize use of existing safe crossing areas. Additional or enhanced crossing controls should be included at these crossings as well.

A 4-inch wide yellow centerline stripe will be used to separate opposite directions of travel. This stripe will be broken where adequate passing site distance occurs, and solid in other areas where bicycle passing is discouraged. White trail edging will also be installed to clearly define the trail's boundary.

Other barrier types between the trail and private property may be used, such as ditches, berms and/or vegetation. Recommended vegetation types should survive on low water and maintenance (see Landscaping this section for recommended plantings). Ditch and berm gradients should not exceed 2:1 slopes or be greater than 10 feet in depth or height.

A summary of key operating and design definitions are listed below:

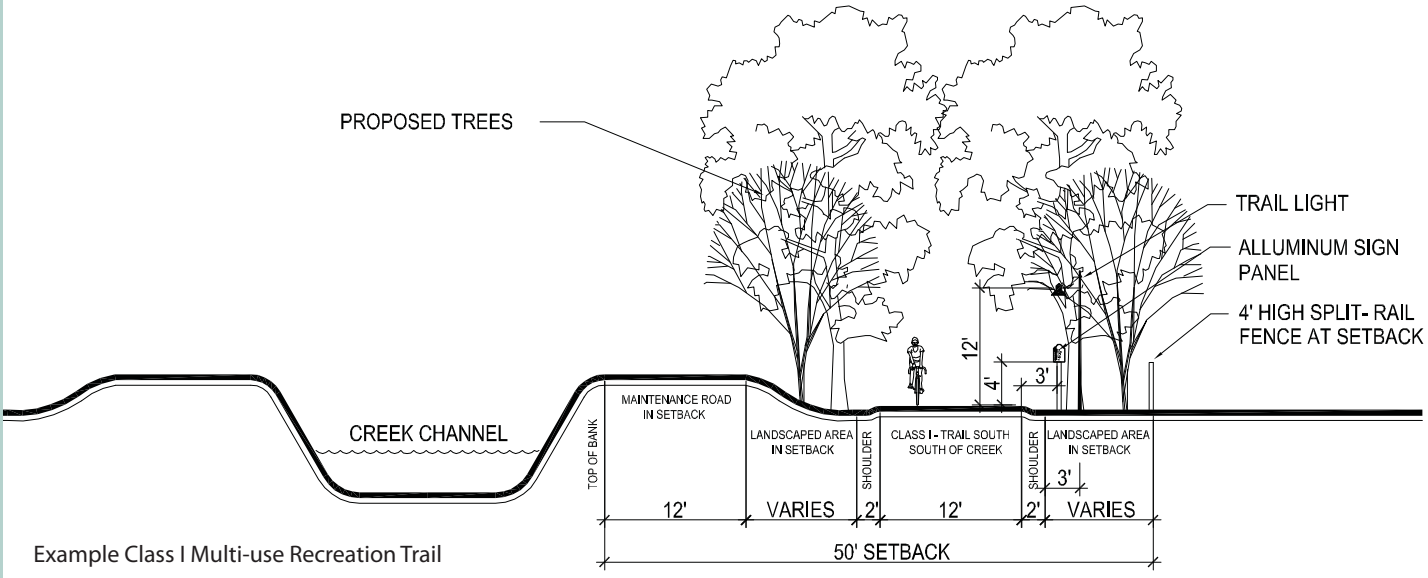
Class I Bikeway	Referred to as a Class I trail, multi-use trail or bike path. Provides for bicycle travel on a paved right of way completely separated from any street or highway.
Class II Bikeway	Referred to as a bike lane. Provides a striped lane for one-way travel on a street or highway.
Class III Bikeway	Referred to as a bike route. Provides for shared use with pedestrian or motor vehicle traffic. Marked only with Signage.

See Trail Design Standards & Construction this section for trail sections and specifications.

Trail Design Standards & Construction

Class I Trail Design Standards

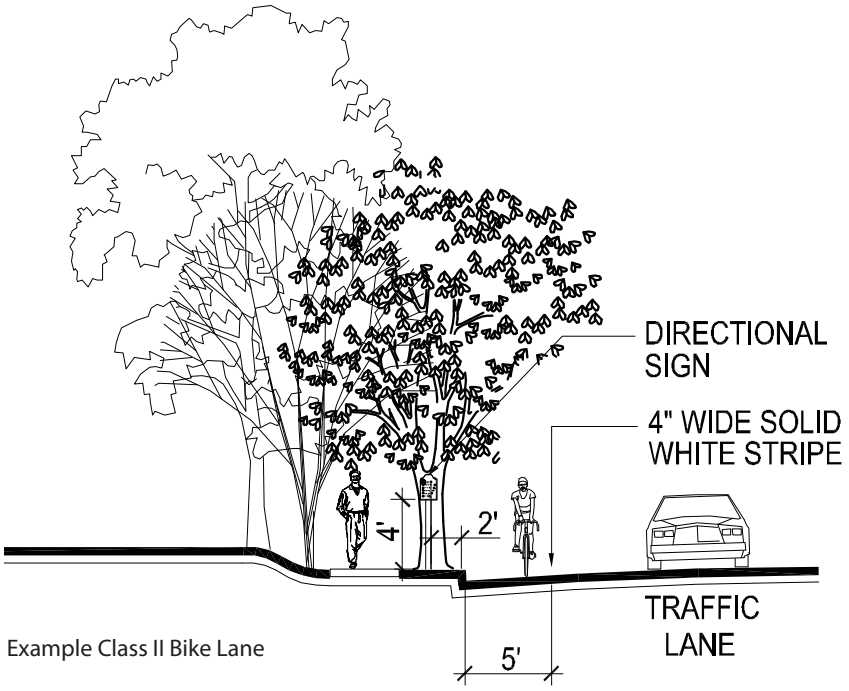
- Where space allows, paved portion of trail will be a 12-foot wide, 4-inch thick asphalt path constructed over a 6-inch aggregate base.
- Two-foot wide, 6-inch thick aggregate base shoulders on each side of the paved trail.
- Caltrans minimum turn radii.
- Appropriately designed "knuckles" may be used to attain desired alignment.
- Trail access to roads aligned to create a right angle with the road.
- Removable bollards at all trail and road intersections to bar unauthorized vehicle entry.
- Fencing as necessary to direct or limit trail access.
- Four-inch wide painted yellow centerline to create two lanes of travel.
- Four-inch) wide painted white edge lines delineating edge of pathway.
- Low landscaping at intersections and roadway entrances to maintain proper site distances.



Example Class I Multi-use Recreation Trail

Class II Trail Design Standards

- In urban settings, striped lanes located between the parking area and the traffic lanes will be 4 feet at the minimum and run parallel to the curb.
- Bike lanes should be delineated from parking lanes with either parking "T's" or a four-inch white stripe. Bicycle lanes should be offset 4-feet minimum from the parking lane and be marked with a six-inch white stripe.
- In rural settings, Class II bike lanes should be delineated with six-inch white stripes and extend 4-feet minimum from the shoulder.
- When vehicle speeds exceed 55km/h, an additional width of 1.5 feet is recommended.
- If bike lanes are to be located on one-way streets, they should be placed on the right side of the street.
- Where necessary for drainage systems, street grates compatible with bicycle tires should be used.



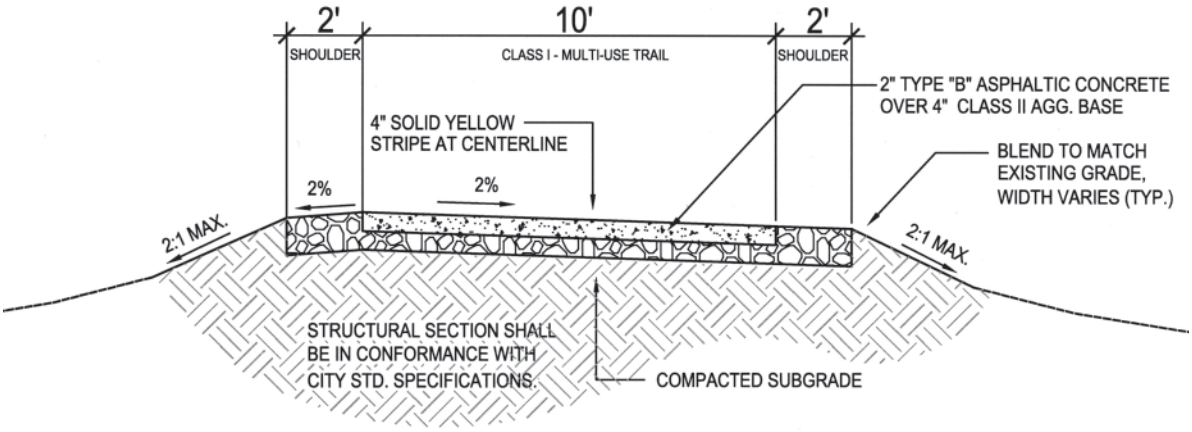
Example Class II Bike Lane

Class III Trail Design Criteria

- Caltrans approved signage should be used to designate the bicycle right-of-way.

Typical Trail Construction

The Visalia Waterway trails have been designed to accommodate pedestrians, bladers, joggers, and both the commuter and recreational cyclist. The proposed trails will be constructed with a paved surface wide enough to accommodate multiple uses. The following illustrations and design criteria describe typical trail construction materials and design standards.



Example Class I Multi-use Recreation Trail Construction

Trail Width

Shared use paths (or trails) should be a minimum of 10 feet wide to accommodate multiple users travelling in both directions. Trails in urban areas are likely to require at least 12 feet of width and those with heavy use, or large numbers of in-line skaters, may need a 14-foot wide path. In rural locations with few walkers or joggers, trails may be reduced to eight feet.

In addition to the width of the surfaced portion of the trail, a two-foot shoulder is recommended on both sides of the trail so that users can avoid signs, shrubs, walls, etc. The total width of the trail and shoulder should be maintained through any tunnels, underpasses, bridges or overpasses.

Surface Materials

Surface materials greatly affect the types of recreational activities found on a multi-use trail. Urban trails usually have asphalt or concrete surfaces to withstand heavy trail use and the impact of maintenance vehicles. Hard or sealed surfaces such as these also provide in-line skaters with a place to skate. However, the initial cost of an asphalt or concrete surface will often be significantly more expensive ($125,000 per mile) than a soft or unpaved surface ($40-$50,000 per mile). Paved trails will also likely raise the speed of bicyclists, which may be an issue in areas with heavy pedestrian use. Other materials such as "road oil" should be considered as alternates.

Rural trails are more likely to be surfaced with crushed aggregate or decomposed granite as this is usually cheaper and quicker, and is adequate for equestrian use and other moderate or low use activities. However, soft surface trails are not usable by in-line skaters and are more prone to flood or water damage. Some hard surface trails have a soft shoulder that is designed for joggers to use, and in areas with equestrian use, a parallel soft surface trail is recommended where space permits.

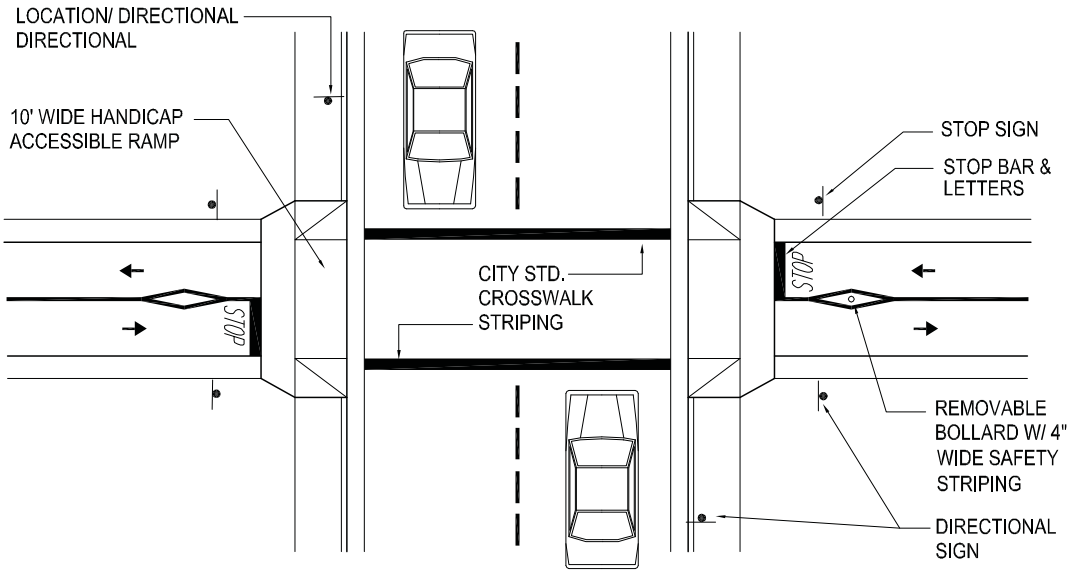
Trail Access, Staging and Rest Areas

Trail Access

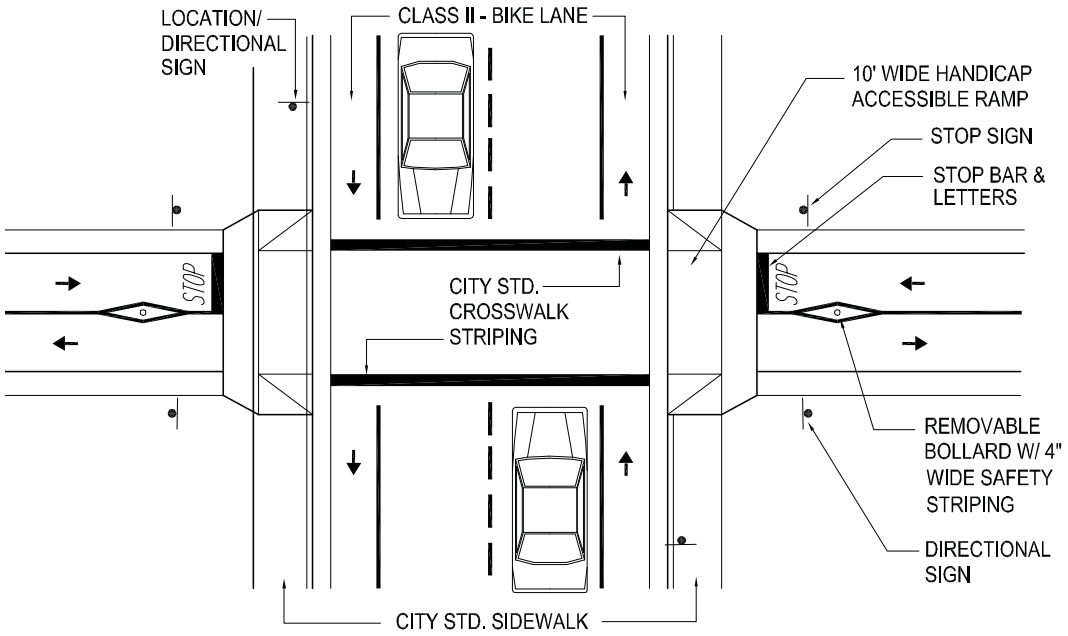
Access to the Visalia Trail System Network would be provided at "Trail Nodes" marking a significant point of entry or "Staging Area" usually occurring at a regional or community park with available parking facilities near or on the designated "Recreational Ring Trail". See Trail Linkages Plan, page 4-3, for location. Informational Kiosk's would provide a focal element or icon marking the staging area or park & ride drop off opportunity directing trail users to various bike routes from their current location. See "Trail Amenities" this section for Kiosk design description.

"Trail Hubs" would be described as transitional zones or connections at various locations throughout the trail network system allowing trail users to transfer from a Class I trail to a Class II bike lane or vice-versa depending on direction of travel. In many instances these "Hubs" occur at existing traffic signal crossings, non-signalized intersections or mid-block crossings.

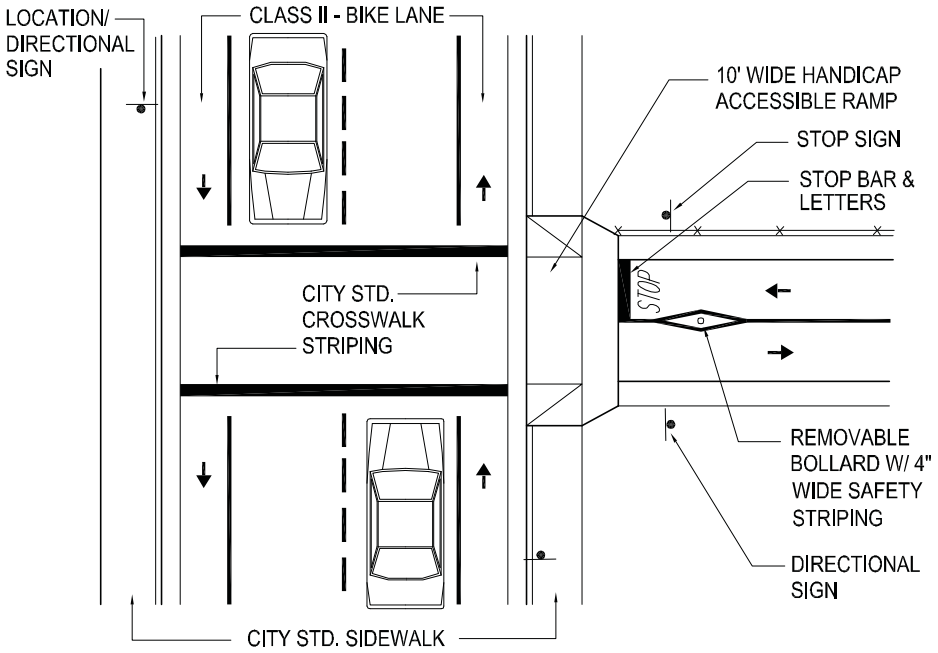
For ease of understanding "Recreational Trail Hubs" can be classified into three (3) types. "Type-1" hubs can be described as a Class I trail crossing. "Type-2" hubs can be described simply as a Class I trail crossing connecting with Class II bike lanes. "Type 3" hubs can be described as a Class II crossing to either another Class II or Class I trail. Directional signage at the "Hubs" would keep the trail user or cyclist on track to his or her destination. Provided in this section are hub type graphic examples. Other conditions or combinations could be derived from these examples to accommodate site-specific needs.



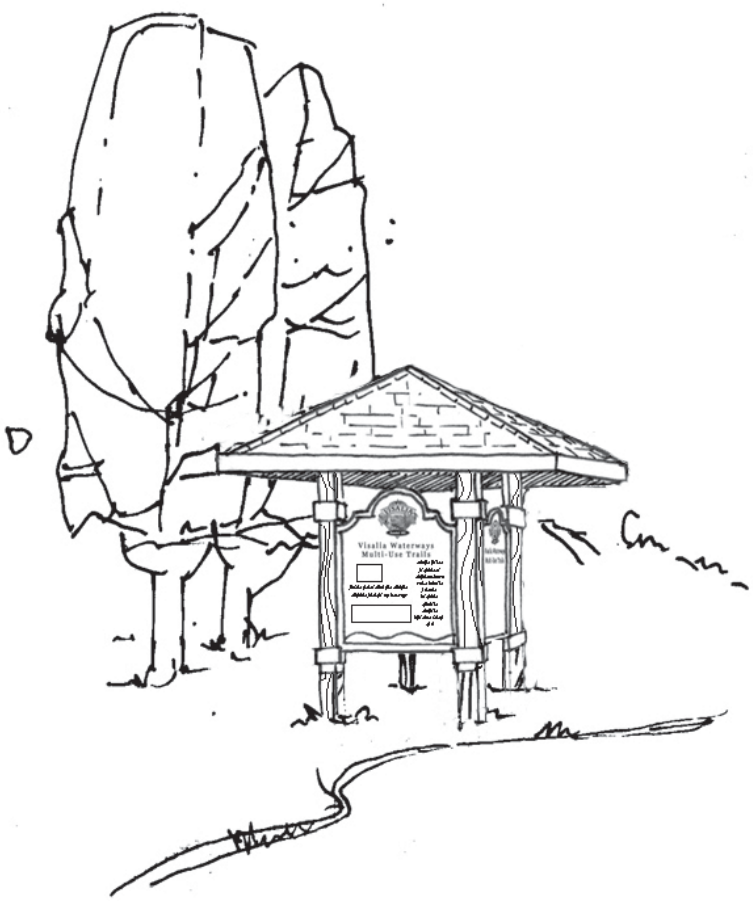
Type 1 - Trail Transition Hub
(Class I Crossing)



Type 2 - Trail Transition Hub
(Class I/ Class II Crossing)



Type 3 - Trail Transition Hub
(Class II/ Class I Crossing)



Example Informational Kiosk

Trail Amenities and Features

Kiosks

As stated earlier Kiosk's would provide an icon or landmark for points of entry onto the trail system. Kiosk's could include the following information:

- Visalia City Logo
- Visalia Recreational Trails System Map (showing current location)
- Educational/ Historic Themes
- Miscellaneous Publications
- Current Events Calendar
- Local Sponsors Listing
- Contributing Organizations and Committees

The use of paving, edge treatments or borders, lighting and landscaping would enhance the Kiosk in its setting and would provide a visual link to unique character found in the Visalia downtown district. The following amenities could be considered part of the Kiosk site development:

- River Cobble Paving Borders
- Vehicle drop off (Painted Curbs-Unloading)
- Pedestrian Lighting or Pole Lamps
- Native plantings/ Landscaping

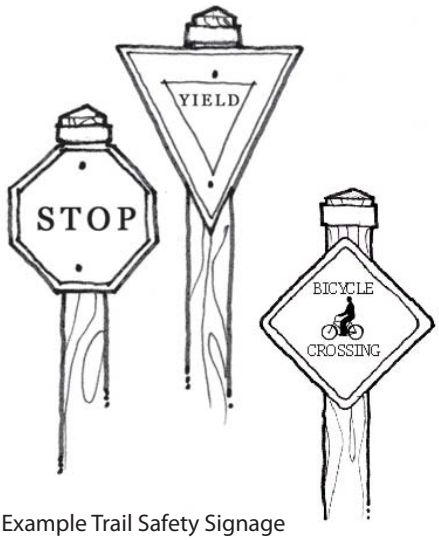
Signing and Marking

Uniform sign design with the Visalia Waterways and Trails logo should be provided along the trail. A trail logo needs to be developed for use on the signs. Signing and marking will unify the trail design and provide functional information. Elements such as bollards to prevent unauthorized trail access, traffic control signs, directional signs, and trail entrance information at bus stops and other strategic locations within the City will help guide and control use along the trail. Informational kiosks located at major staging areas and parks will provide updated trail and event information to trail users.

Signs along the trail should be designed to meet all of the required and recommended signing and marking standards developed by Caltrans in Chapter 1000 of the Highway Design Manual. In addition, all signs and markings should conform to the standards developed in the Manual of Uniform Traffic Control Devices (MUTCD). In general, all signs should be located at least 3 feet from the edge of the paved surface. The signs should have a minimum vertical clearance of 8.5 feet when located above the trail, and be a minimum of 4 feet above the trail surface when located on the side of the trail. All signs should be oriented so as not to confuse motorists. The design (though not the size) of signs and markings should be the same as used for motor vehicles.

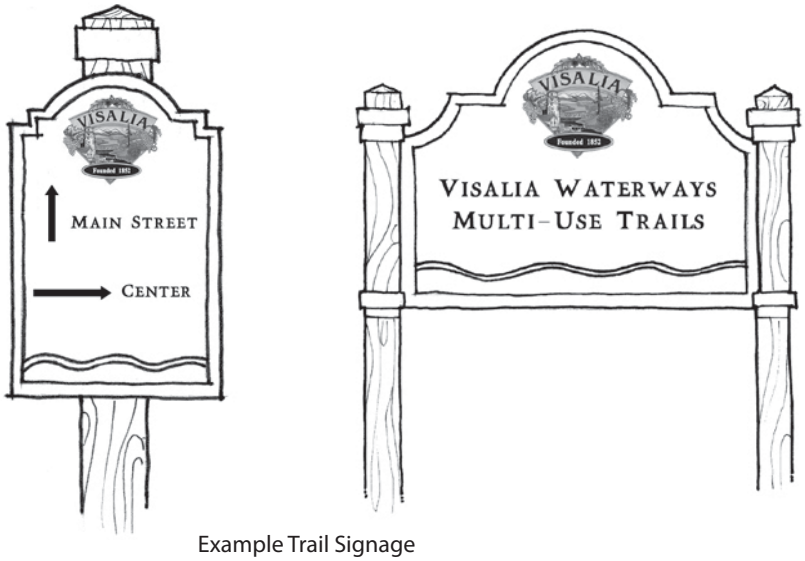
Traffic and Safety Signage

Directional signing will be useful for trail users and motorists alike. For motorists, a sign reading "Visalia Waterways Trail Crossing" along with a trail logo helps to both warn and promote use of the trail itself. For trail users, directional signs and street names at crossings help direct people to their destinations. Trail signs will be more functional if supplemental plates are placed beneath them that call out major destinations such as "Downtown" or "Plaza Park".



Example Trail Safety Signage

Whenever possible, new trail alignments should take advantage of existing crosswalks and traffic signals in order to allow trail users to travel across vehicle lanes. Additional or enhanced crossing controls should be included at these crossings as well.



Example Trail Signage

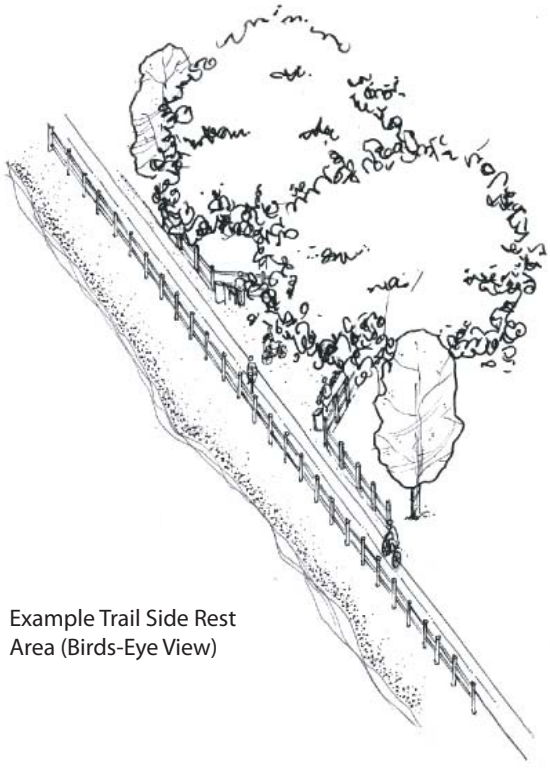
A 4-inch wide yellow centerline stripe will be used to separate opposite directions of travel. This stripe will be broken where adequate passing site distance occurs, and solid in other areas where bicycle passing is discouraged. White trail edging will also be installed to clearly define the trail's boundary.

Other barrier types between the trail and private property may be used, such as ditches, berms and/or vegetation. Recommended vegetation types should survive on low water and maintenance (see Landscaping this section for recommended plantings). Ditch and berm gradients should not exceed 2:1 slopes or be greater than 10 feet in depth or height.

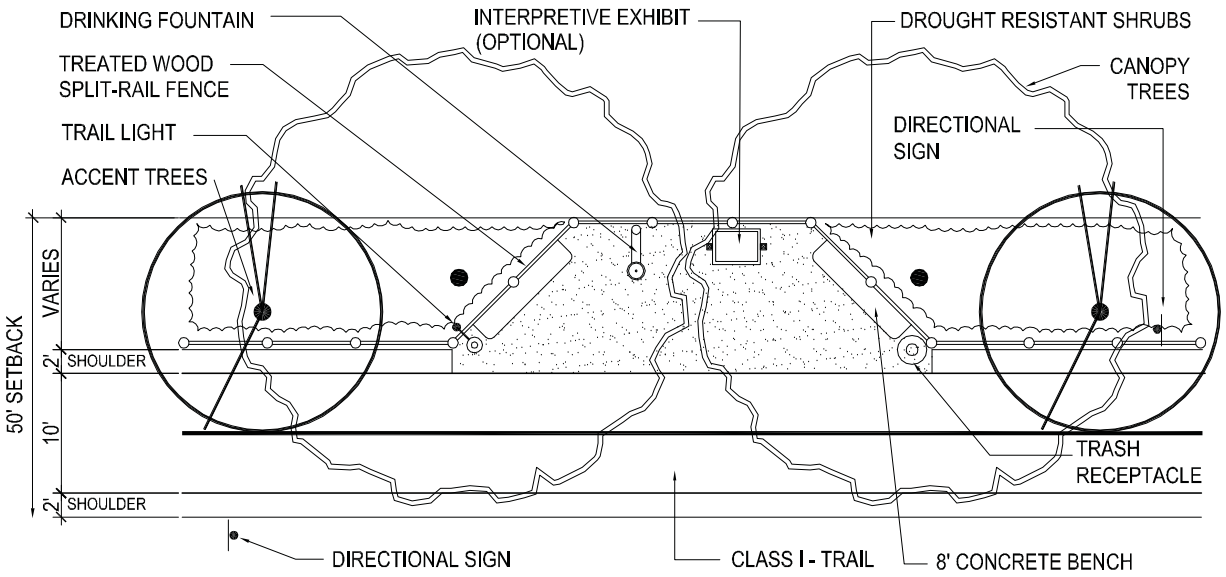
Trail Side Rest Areas

Trail Side rest areas will offer expanded recreational opportunities and increase the enjoyment of the facilities along the trail. Recommended rest areas are shown on the preferred alignment maps that will cater to all users. Recommended amenities are listed below.

- Drinking fountain
- Benches
- Evening lighting
- Signage
- Fencing
- Native plantings/ Landscaping
- Trash receptacle
- Interpretive exhibit



Example Trail Side Rest Area (Birds-Eye View)

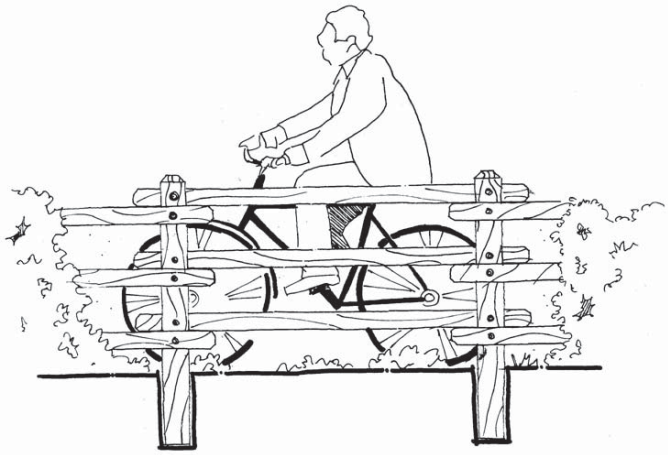


Example Trail Side Rest Area (Plan View)

Trail Fencing

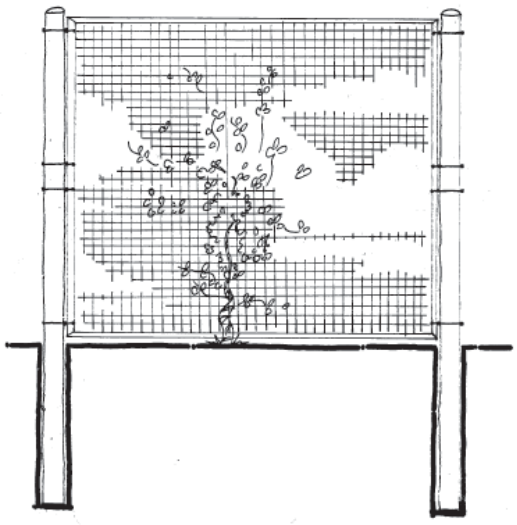
Fencing for Typical Setbacks:

- Fencing should be setback a minimum two feet from the edge of the trail. In some circumstances, a landscape buffer may separate the fence from the trail. When this occurs, the fence should be setback a minimum of 10 feet.
- Four-foot high fences to should be used to minimize the likelihood of bicyclists falling over the railings.
- Split rail or wire fences should be used as the design standard for all trail segments.



Example Split Rail Fence at Setback

Trail Side Rest Area Fencing:
Perimeter fencing at the trail Side rest areas would be constructed similar to the typical split rail fence shown above. In locations where the trail intersects vehicle travel lanes, unauthorized vehicular access must be controlled.



Example Landscape Screen

Landscaping

Given the concept of "Linear Parks" with the arid condition of the existing waterways, careful consideration must be given to plant material selection, irrigation and maintenance along the waterways. Plant selection shall focus on longevity and sustainability with minimum maintenance and low water requirements.

The planting concept along the waterways will consist primarily of large riparian shade trees with minimal shrubs or ground cover. Wood Chips and/ or recycled wood chip products would serve as the ground cover of choice within the setback. Trail head connections, rest stops, staging areas, crossings etc. could be accented with more plant material such as medium size shade trees creating a colorful under story and low growing sprawling shrubs capable of rooting down and recovering from traffic or general maintenance. Large shrubs would only be used for screening purposes as necessary.

All plant material and setbacks from the trail shall be approved by the appropriate authority, and are limited to the top of the waterway banks so as not to impede with the natural seasonal water conveyance in the channels. Maintenance practices including the amount of maintenance and scheduling within the waterway setback area adjacent to the trail shall conform to requirements agreed upon by the City and Tulare Irrigation District.

Plant Material Recommendations

Large Evergreen Trees:

Pinus elderica-	Mondel Pine
Quercus virginia -	Southern Live Oak
Sequoia sempervirens-	Coast Redwood

Large Deciduous Trees:

Quercus lobata -	Valley Oak

Good Shade Trees:

Platanus acerifolia-	London Plane Tree
Quercus rubra -	Red Oak
Quercus suber-	Cork Oak
Quercus phellos-	Willow Oak

California Native Trees:

Aesculus californica-	California Buckeye
Cercis occidentalis	Western Redbud
Platanus racemosa-	California Sycamore
Quercus agrifolia-	Coast Live Oak
Quercus chrysolepis-	Canyon Live Oak
Quercus lobata-	Valley Oak
Quercus wislizenii-	Interior Live Oak

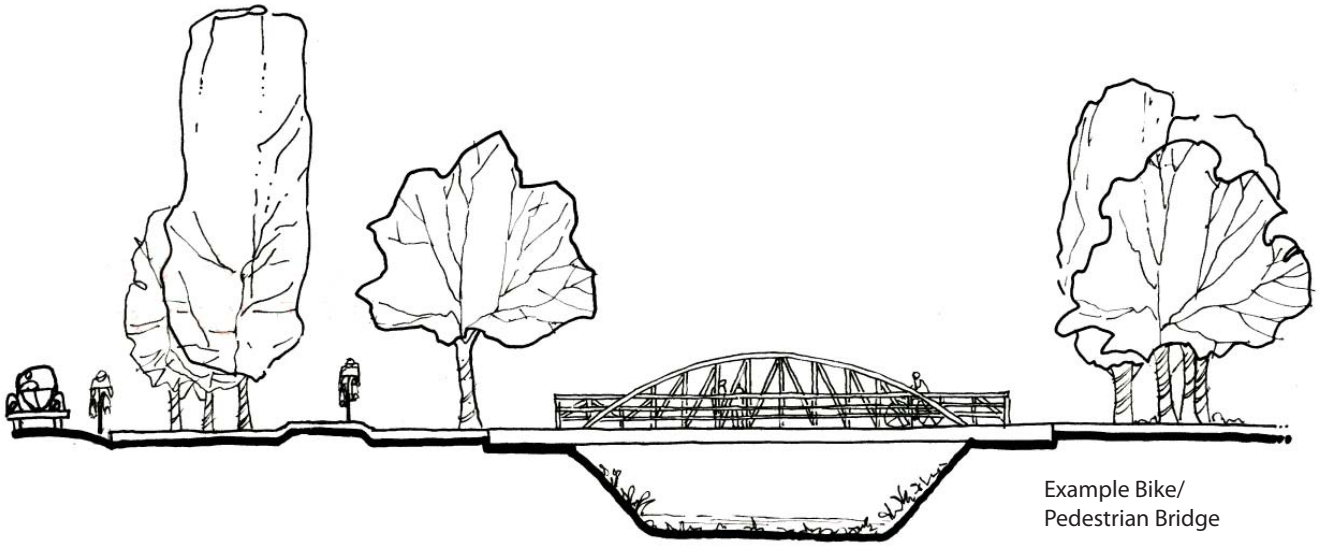
Accent Trees and Shrubs:

Cercis canadiensis -	Eastern Redbud
Pistacia chinensis -	Chinese Pistache
Vitex agnus-castus -	Chaste Tree

Low Mounding Shrubs/ Ground Cover:

Baccharis pilularis -	Prostrate Coyote Brush
Cotoneaster horizontalis -	Rock Cotoneaster
Juncus boomea-	California Grey Rush
Lantana montevidensis -	Trailing Lantana
Raphiolepis indica -	Indian Hawthorn
Ribes viburnifolium -	Evergreen Current
Rubus vitifolius-	California Blackberry
Salvia leucantha -	Mexican Bush Sage
Vitus californica-	Wild Grape

See Appendix D for a list of California Native Plants for Restoration of Streamsides and Adjacent Areas



Example Bike/
Pedestrian Bridge

Trail Bridges

All bridges should include structural design that is able to support pedestrian live loading and maintenance and emergency vehicles.

Creek Crossings:

To minimize or avoid potential impacts to the creeks, pre-engineered clear span bridges should be used to cross all creeks and drainage ways. At minimum, the pre-engineered bridges should include the following:

- Low maintenance weathering steel finish
- Asphalt deck
- Fifty-four inch high bicycle railing
- Horizontal toe plates

Optional items may include lighting, public art, banner poles, and interpretive exhibits.

Road Crossings:

Grade separated crossings should be a pre-engineered portal bridge. At minimum, the pre-engineered bridges should include the following:

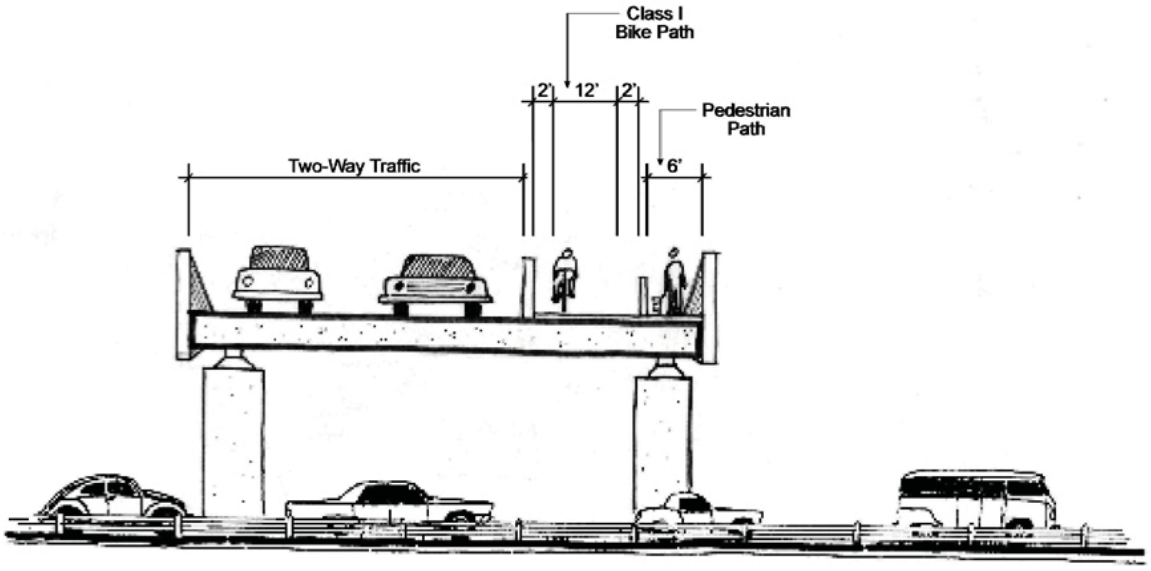
- Low maintenance weathering steel finish
- Asphalt deck
- Fifty-four inch high bicycle railing
- Horizontal toe plates
- Fully enclosed portal
- Attached security fence

Optional items may include lighting, public art, and banner poles.

Highway Crossings:
Any grade-separated crossing over Highway 198 must be engineered to meet all Caltrans and City requirements and standards. At minimum, the bridge design should include the following:

- Low maintenance weathering steel finish
- Concrete deck
- Fifty-four inch high bicycle railing
- Fully enclosed portal
- Attached security fence

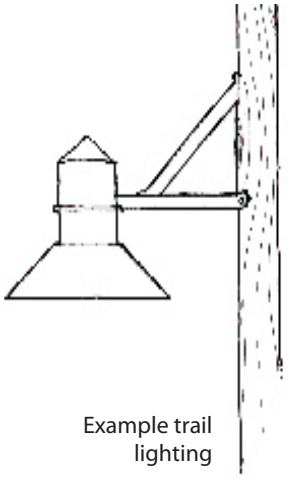
Optional items may include lighting, public art, and banner poles.



Bridge Crossing at Hwy 198

Trail Lighting

In order for bicyclists to navigate safely along paths and intersections, a sufficient amount of light should be provided. Light allows the bicyclist to see the bicycle path direction, surface conditions and any obstacles such as fallen branches or large puddles. Lighting is especially important to encourage those riding at night or early morning and need to feel a sense of security.



Example trail lighting

It will not be feasible to light all of the trails. General trail lighting should be considered when there is a high likelihood that the trail will be used by commuters, for trails in the Downtown District, or when there is sufficient demand by trail users. Lighting should be considered at the intersections of roads and trails, through underpasses, and where it is necessary for trail safety.

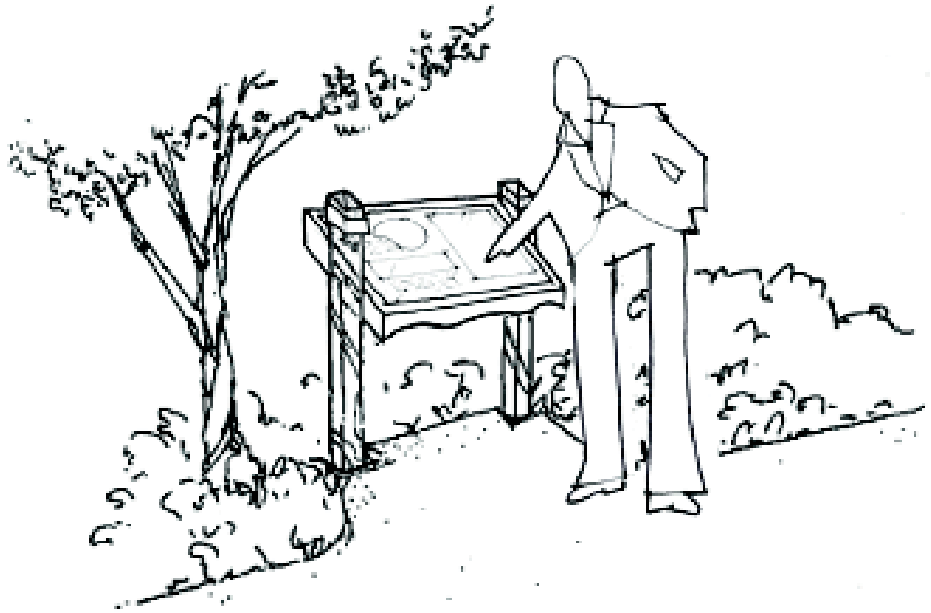
Appropriate lighting levels along the trail should be considered with adjacent or future land use, energy costs and maintenance. Urban areas might require higher lighting levels and residential trail areas can receive lower lighting levels possibly point-to-point lighting.

Depending on the location, average maintained horizontal illumination levels of 5 lux to 22 lux is recommended. Higher illumination levels may be considered where special security problems exist. Light poles and fixtures should meet the recommended horizontal and vertical clearances and should be durable, weather resistant and to some extent vandal resistant. Powder coated poles and fixtures have become the finish of choice for most exterior decorative lighting. Luminaries should be selected that are appropriate for bicycle and pedestrian scale paths.

Historic and Educational Themes

The trail offers a unique opportunity to develop historic and educational themes. Interpretive exhibits should be placed at strategic locations along the trail offering a variety of information. For example, information regarding the history of California agriculture and its role in the development of the City of Visalia could be explained. Other possible interpretive topics along the railroad corridor including:

- History of the bicycle
- Unique bicycle trails in other cities and countries
- Historical development of mining towns in California
- Air quality improvements through bicycle commuting
- The importance of the riparian habitat along Mill Creek
- Wildlife found in Visalia



Example Interpretive Sign Exhibit

Riparian Enhancement

Bicycle paths along creeks should be sensitive of the existing riparian habitat. Paths located outside required setbacks help to protect creek banks and riparian vegetation. Areas where bicyclists and pedestrians have access to the creek should be limited in number and should avoid areas that would require the removal of significant habitat or would disturb important fishery areas

In areas where little or no landscaping exists, a landscape buffer of native vegetation should be planted between the top of the creek bank and the path. This buffer should ensure visual access to the creek as well as control the location of pedestrian and bicycle access.

Whenever possible, avoid direct or indirect damage to sensitive wildlife resource areas and limit impacts to those associated with constructing the path. It is recommended that bicycle paths in sensitive resource areas be preceded by a survey of wildlife resources along the trail alignment. The installation should avoid causing creek bank erosion, siltation of stream beds, and the removal of trees with trunk diameter of 12 inches or greater.

Maintenance

Trail maintenance is an important aspect of creating a successful bicycle trail. Once Class I and II bikeway improvements recommended by the plan are constructed, they should be routinely inspected for potential hazards and determine where improvements are needed.

Potential hazards and needed improvements, such as the following, should be corrected as identified:

- Bikeways demarcation (striping and stencilling) should be remarked on a regular basis or in correlation with street paving.
- Sweeping and litter removal.
- Improvements to grates, manholes, longitudinal and transverse cracks or joints, or other obstacles in the portion of the roadway typically used by bicycles.
- Vegetation removal
- Sight distance improvements at intersections/spot removal of on-street parking or fixed obstacles.
- Longitudinal or transverse pavement cracks
- The City should be prepared to close bike paths and trails when flood hazards exist.

Necessary maintenance activities, such as those listed above, should be handled on a "demand-responsive" basis, that is, only as such problems are reported to the Public Works Department. The City should also allocate funds for a recommended once-a-year sweeping of debris from adjacent storm runoff after the conclusion of the 'rainy-season'.

Loop detectors at signalized intersections should be sensitive enough to detect bicycles. City staff should routinely inspect detectors in Visalia for proper bicycle actuation. As an alternative to loop detectors, signal actuation buttons convenient for bicyclist use may be installed; however, loop detectors are preferred by bicyclists as they are not required to stop or get off their bikes.

8.0 SPECIAL ISSUES

Mid-Block Crossings

It is the goal of this plan to avoid mid-block crossings wherever possible and to examine all other feasible alternatives. The alignments shown in the plan have taken this goal into consideration and eliminated most at grade mid-block crossings.
The waterway trail system crosses numerous public roads. In many cases the point of crossing corresponds to an existing intersection that is currently controlled or planned to be controlled. These controlled intersections provide an acceptable method to allow the trail to cross the public road. There are however locations where a waterway trail intersects a public road and no feasible method for crossing exists except for a new Mid-Block Crossing. Mid-block crossings have the potential to create potential traffic conflicts and safety issues. Due to the future oriented aspect of this plan the following guidelines are suggested to maintain the goal of limiting mid-block crossings and providing a method to determining the best method to cross public streets.

The Plan suggests the following alternatives be considered prior to installing a new mid-block crossing:

- Install fencing and/or other barriers to prevent trail users from accessing the street at the point of intersection.
- Installing signage directing trail users to use an adjoining sidewalk to the designated existing or planned controlled intersection. This may result in out-of-direction-travel for trail users at some locations.
- Where at-grade crossings are not feasible consider installing a grade separated crossing (bridge or under crossing) where traffic conditions warrant such a facility. Traffic conditions such as high speed traffic, limited visibility, high volumes, multi-lanes, state routes and combinations of the above may warrant grade separated crossings.

Where a mid-block crossing is deemed to be the most feasible and desirable road crossing solution the following guidelines should be employed:

- Install appropriate warning signs, lighting, trail slowing devises such as bollards, chicanes/round-a-bout, rumble strips etc to stop trail users prior to the point of crossing. (refer to cal trans standards)
- Depending on cross traffic behavior and conditions consider the installation of user activated stop flashing lights, marked cross walk, vehicular warning signs, street lighting at crossing, etc.
- Mid-block crossing designs should be based on the exact type of road conditions and traffic variables. Generally more aggressive crossing designs are necessary where vehicle and trail user traffic volumes are high, speeds are high, and visibility is limited. Designs may range from a simple marked and signed crosswalk to a fully controlled crossing with signals.

Trail Operation Issues

Administration

Administration of the Visalia Waterway Trails will involve both the City of Visalia and other representation. The City of Visalia will continue to provide regional policy oversight for the corridor. A Waterways Trails Advisory Committee will be appointed by the Council as a standing City committee, and it will have the responsibility of the implementation of the Master Plan. The committee will have representatives from all groups with an interest in the implementation of the Master Plan.

Security and Public Safety

While studies of trails in the United States have shown that trails typically have less security and safety issues than surrounding communities in general, it is the intent to provide adequate security and public safety on the Trail. Most multi-use trails in the United States do not have a dedicated police patrol of the facility. It is more common for local police to patrol sections of paved trails not visible from adjacent streets on an intermittent basis. As a rule of thumb, a multi-use trail such as the Waterway Trails will require 1 man-hour per day for every 5 miles of bike path. This figure would also vary by time of week and year. Off-peak weekdays may require only 2 man-hours/day, while peak weekends may require as much as 10 man-hours/day.

Visalia Police Department (VPD) recognizes the need for police patrol along the waterways and trails. However, there are currently not enough resources to provide dedicated policing for all of the trails. Unless additional resources are provided which are over and above the resources necessary for general community policing, the VPD can not support the recommendation for additional patrols along the waterways. The VPD has the primary responsibility of policing the trails and they will respond to calls for service and will, as resources are available, provide security patrols on trails as requested. VPD could also assign a Volunteer Citizen Patrol to monitor trails as available.

While the Visalia Police Department is responsible for selecting the most appropriate means of patrolling the trail system, it may be beneficial to patrol the Waterway Trails using bicycle-mounted officers. Trail patrols may be supplemented by volunteers from local bicycling organizations or private security patrols, who could provide information to trail users and report problems to the authorities. Trail coordinators could develop training and awareness programs for City Maintenance workers who could be required to report suspicious action to the trail coordinators or VPD.

A summary of key security and safety recommendations is presented below:

- Adhere to the established design, operation, and maintenance standards presented in this document. Supplement these standards with the sound judgment of professional engineers and law enforcement
- Enhance trail safety by adding trail lighting and maintaining sight lines, and make streets single-loaded along the trail wherever possible to maximize views to the trail
- No Trespassing and other trail restrictions, including speed limit and motor vehicle restrictions, should be clearly marked. No Trespassing signs should be posted every 200 feet in agricultural areas, with maximum fines of up to $1,000 cited.

- Clearly post the hours of Trail operation. In developed areas, it is appropriate to limit hours of operation from 6:00 AM to 10:00 PM. In rural areas, hours of operation may from dawn to dusk, or 6:00 AM to 7:00 PM, whichever is later. Penalties for violating these hours should be clearly identified.
- Make all segments of the Waterway Trails accessible to emergency vehicles.
- Maintain adequate recording and response mechanisms for reported safety and maintenance problems. Respond to accident investigations by appropriate design or operation improvements.
- Locate mile posts every one half mile; identify markers on maps
- Illuminate all grade crossings and under crossings
- Locate all vegetation at least 6 feet from the Waterway Trails where possible to maintain clear sight distance.
- Design bridges and under crossings so that visibility is maximized; under crossings should be visible for entire length; use graffiti resistant materials.
- Provide bicycle racks and lockers at key destinations that allow for both frame and wheels to be locked.
- Provide fire and police departments with map of system, along with access points and keys/combinations to gates/bollards.
- Enforce speed limits and other "Rules of the Trail".
- Establish a liaison with the railroad operations department to respond to safety concerns where trail borders active rail lines.
- Develop and post suggestions for safe trail use, such as the use of a buddy system when using the trail.
- Place call boxes and/ or surveillance cameras along the trail.

Liability

Both the City and adjoining private property owners may be subject to liability issues resulting from trail use. This is not a new or unexpected issue and one the state of California has dealt with by establishing protective legislation. The Waterways Trail Master Plan has provided detailed design standards and recommendations to protect users and adjoining landowners from liability arising from trail use. Such features include; fencing, signage, landscaping, lighting, security patrol and other precautions. In addition to the trail alignment and design standards outlined in the Waterways Trail Master Plan, both of these entities are protected by the following state laws.

<u>City Protection:</u>
California Civil Code 831.4 and 846 provide protection to the City from claims arising from trail users if the City is the owner of the land upon which the trail is built and operated. All precautions to creating a safe and well-designed trail are assumed in the Civil Code to minimize liability to the City and risk to users.

<u>Adjoining Landowner Protection:</u>
Public Resources Code, Section 5075.4 was designed to protect owners whose private property lies adjacent to a public trail from liability that may arise from the use of such facility. This includes injury of a trail user who has trespassed onto adjoining private land.

Adjacent Agricultural Operations

It is not the intent of the Master Plan to develop trails through agricultural properties,; however, in the event there is a trail adjacent to active agricultural operations, precautions should be taken to advise trail users of agricultural activities. The following notices should be posted:

Pesticide spaying and burn activity:

- All trail entrances will be posted with notices of on-going agricultural activities and stating that the Trail user agrees to using the Trail at his/her own risk.
- Notices will state that the trail is subject to closure without notice to accommodate such activities.
- The trail will be designed with the ability for its physical closure (of isolated segments) in the event it becomes necessary to facilitate permitted spraying.
- The trail coordinator will responsible for closures when appropriate.
- During peak burn times, the Trail manager will check burn day status and initiate closure of the affected segments of the Trail.

Notice Posting

- All trail entrances/crossings will be posted with notices that the trail is adjacent to private property where there are active agricultural operations. Trail users will be advised to stay on the trail and what the ramifications are for trespassing or being on the trail after it is closed.
- Trail users will be advised to be alert to operating machinery and equipment crossing the trails.
- Trail users will be advised that farm operations may include pesticide spraying and burning activities in accordance with State and Local laws/ordinances and that portions of the trail may be closed without notice. User will be warned that use of the trail is at their own risk.

Security (Theft, Vandalism and Trespassing)

- Police may be provided to patrol the Trail as part of a routine patrol activity. Security will likely be higher during peak period weekends, spring and summer. policing the trails and they will respond to calls for service and will, as resources are available, provide security patrols on trails as requested. VPD could also assign a Volunteer Citizen Patrol to monitor trails as available.
- When possible, patrol the Waterway Trails using bicycle-mounted officers.
- Trail patrols may be supplemented by volunteers from local bicycling organizations or private security.
- Elect trail coordinators and develop training and awareness programs for City Maintenance workers who could be required to report suspicious action to the trail coordinators or VPD.

Milepost Mapping

- Mileposts will be installed with corresponding maps distributed to all jurisdictions to promote timelier response.
- All emergency response personnel will be equipped with maps of access points and gates.

Emergency Call Boxes

- Solar powered emergency phones will be installed on an as-needed basis.

General Security Measures

- At-grade road crossings and urban sections of Trail will be illuminated with overhead lighting.
- Visibility of under-crossings will be maximized so there is lighting the full length of the crossing.
- Graffiti-resistant construction materials will be utilized wherever possible.

Limited Vehicle Access

- Access to the trail from adjacent public streets, roads and other public rights of way will be limited to authorized security, and maintenance vehicles only.
- Public access will be controlled by a security patrol and by the installation of fencing, gates or bollards as deemed appropriate to each situation.

Fencing

- Split-rail or other suitable fencing will be provided as shown in Section 8 for both Rural and Urban sections as necessary.
- Guard-rail fencing will be provided at the top of creek banks accommodating trail access hubs, crossings and intersections where necessary. Guard-rail fencing will also be necessary at the top of bank where the trail jumps up onto the creek bank where trail access is limited i.e. at existing properties or other physical constraints.
- To mitigate negative aesthetic impacts of the fence, plant material such as vines and/or climbing ivy and other plants will be used.
- Where fencing is deemed necessary and appropriate, typical fencing for the trail corridor will be a wood split-rail fence on the creek setback or property boundary line. In some urban settings this fence could be replaced with a security fence.

Trail Maintenance and Operations

Maintenance of the Waterway Trails will be performed by the City to their established standards. The following list represents maintenance items typically associated with trails and should be used as a resource by the City.

Maintenance of the Waterway Trails will include the following regular activities:

Item	Frequency
Sign replacement/repair	1-3 years
Pavement marking replacement	1-3 years
Tree, shrub, grass trimming/fertilization	5 months- 1 year
Pavement sealing/potholes	5-15 years
Clean drainage system	1 year
Pavement sweeping	Monthly - annually as needed
Shoulder and grass mowing	As needed
Trash disposal	As needed
Lighting replacement/repair	1 year
Graffiti removal	Weekly - monthly as needed
Maintain furniture	1 year
Restroom cleaning/repair	Weekly - monthly as needed
Pruning	1-4 years
Bridge/tunnel inspection	1 year
Remove fallen trees	As needed
Weed control	Monthly - as needed
Maintain emergency telephones, CCTV	1 year
Maintain irrigation lines/replace sprinklers	1 year
Irrigate/water plants	Weekly - monthly as needed

Many of these maintenance items are dependent on the type and amount of landscaping and supporting infrastructure that is developed along the trail. It is recommended that a consistent maintenance procedure be developed along the Waterway Trails to ensure, at a minimum, that the facility is safe for trail users. The City should have a mechanism to identify, record, and respond to maintenance problems, and to keep written records of such actions.

Special maintenance equipment such as a sweeper may shared by other City departments. Typical maintenance vehicles for the trail will be light pick up trucks and occasionally heavy dump trucks and tractors. Care should be taken when operating heavier equipment on the Waterway Trails to warn trail users and to avoid breaking the edge of the trail surface.

If the Waterway Trails will serve as a maintenance access road for the adjoining irrigation canals, the trail width and pavement section should reflect the anticipated weight and frequency of vehicles.

Maintenance Costs

The estimated annual maintenance costs for the Waterway Trails exclusive of the surrounding setback areas is based on an industry standard of $8,500 per mile of bike path annually. There are likely to be economies of scale when the Trail is 100% completed, based on the length of the facility and the likelihood of shared maintenance costs between agencies and sponsorship programs that may help to defray maintenance costs.

Trash Disposal

- The Park Division will dispose of trash in trash receptacles along the Trail on an as-needed basis (daily, weekly, monthly).
- Litter (loose debris) clean up along the Trail will be conducted in conjunction with routine trash disposal runs.
- Adopt-a-trail programs will be initiated by the Trail Coordinator to aid in litter pick up.
- Establishing "Littering Hotline" for dumping incidents will allow incidents to be reported to the Trail Coordinator by either the routine patrols, the general public using the Trail, or a property owner.
- The Parks Division will dispatch and respond to dumping incidents promptly.

Paving and Pot Hole Maintenance

- Paving, repair, striping, etc.. will be evaluated annually and incorporated into the operation and maintenance budget each year.

Rest Stop and Staging Area Maintenance

- All rest stop and staging areas will be checked routinely, cleaned, and maintained.

Coordination with Irrigation District

Development of the Waterways Trail System as presented in this document will require the close coordination with the local irrigation districts. The following issues are especially important to consider when implementing this facility:

Access for Canal Maintenance:
The trail itself has been designed to provide access for irrigation districts and other City maintenance or emergency vehicles. The trail will be closed to all unauthorized vehicles. Repair of canal levies, weed abatement, irrigation control systems such as flood gates, channel alignments and reinforcement are all subject to oversight and maintenance efforts by the irrigation district. Maintenance for these activities is specifically included in the Waterway Trail Master Plan and must be monitored for implementation at the time of trail construction. To accommodate vehicles, the trail design standards assume vehicle loading on all paved and gravelled surfaces.

Landscaping:
A presented in the Vision and Goals section of this document, the trail system is designed to create a linear green through the community. In support of this goal the trail alignment will provide the opportunity to plant trees and other plant material for shade, user comfort and visual enhancement. It is the direction of this plan to encourage landscaping on either side of the trail itself with exclusion of landscaping that will impede the maintenance of the irrigation channel and vegetation below the top of bank. Where approved habitat restoration activities are planned, restoration landscaping within the irrigation channel may be allowed subject to coordination with both appropriate flood control agencies and irrigation districts.

Water Use:
Water supply for trail landscaping purposes will be provided from the local domestic water purveyor, Cal Water. Opportunities to use reclaimed water for Trail landscaping purposes should be researched.

For many months of the year the subject irrigation channels are dry and empty of flowing water. In order to fulfill the vision and goals of the Waterways Trail Master Plan, discussions between the City of Visalia and the representative irrigation districts should be undertaken to determine the feasibility of introducing water into the subject irrigation channels.

Flood Control

The waterways subject to this study function as a vital flood conveyance system for the City of Visalia. As such it is the intent of this study to provide for continued use of the subject waterways for flood control purposes. Appropriate maintenance of the channels, access for maintenance activities and flood control methods are specifically recognized as necessary functions in conjunction with the Trail development. Where opportunities exist, creation of flood control basins for detention, percolation or capacity enhancement should be considered. These areas could provide opportunities for joint park and recreation use during off-storm periods. Close coordination with responsible flood control agencies and the City's Public Works Department are required during implementation of this plan.

Habitat Restoration

Many areas of the subject waterways show potential for habitat restoration efforts. This plan recognizes the value to the urban environment and therefore supports the development of restoration plans in key areas to enhance the quality of the waterway environment for wildlife and biological enrichment. Coordinated restoration will provide an opportunity to promote environmental awareness, provide education about the natural environment of Visalia and discuss the history of the Visalia environs. Restoration activities should be planned in close coordination with local environmental groups, state and federal agencies and local flood control and irrigation districts. This plan proposes to landscape the Trail corridor with predominately native vegetation. Of special concern is the re-introduction of the native Valley Oak along the waterway system. This is a signature of the Visalia region and therefore an important element in the creation of a unique and special recreational system for the City.

9.0 SUGGESTED GUIDELINES FOR NEW DEVELOPMENT

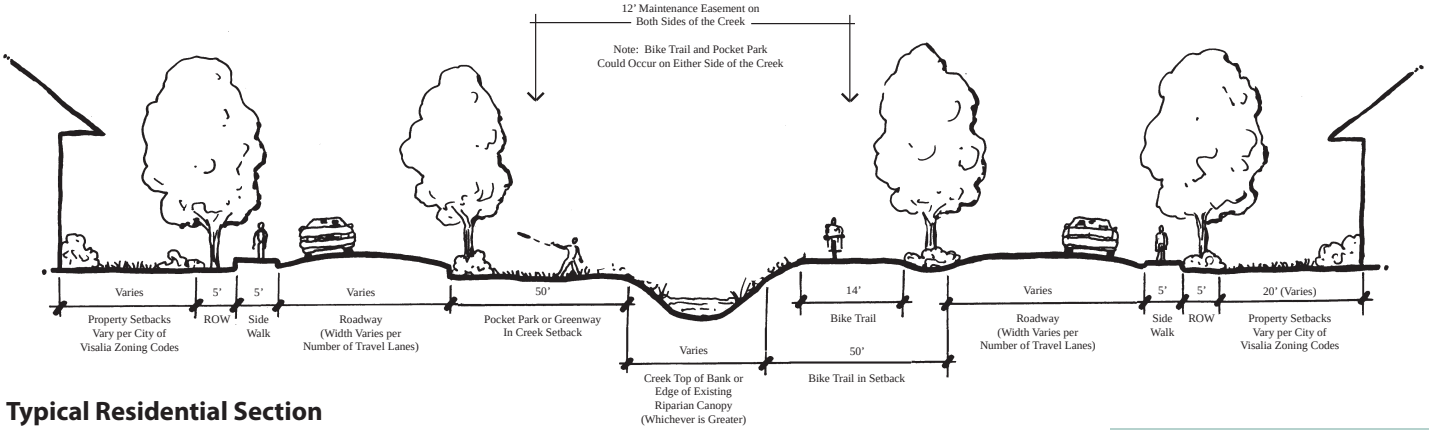
Within the Waterways and Trail Master Plan study area, all three of the targeted waterways run through both urbanized and vacant areas. As the City moves forward to construct and set aside land for the implementation of the waterways trail system, it is important to adopt Development Guidelines that can be applied to new subdivisions constructed adjacent to these waterways. The City adopted the Conservation, Open Space, Park & Recreation Element in 1988, and the Community Waterways Element in 1997. The following section describes some of the planning principles that should be applied from these elements, maximizing the value of the waterway system to Visalia's residents and providing a truly unique linear park and greenbelt experience.

Residential Development

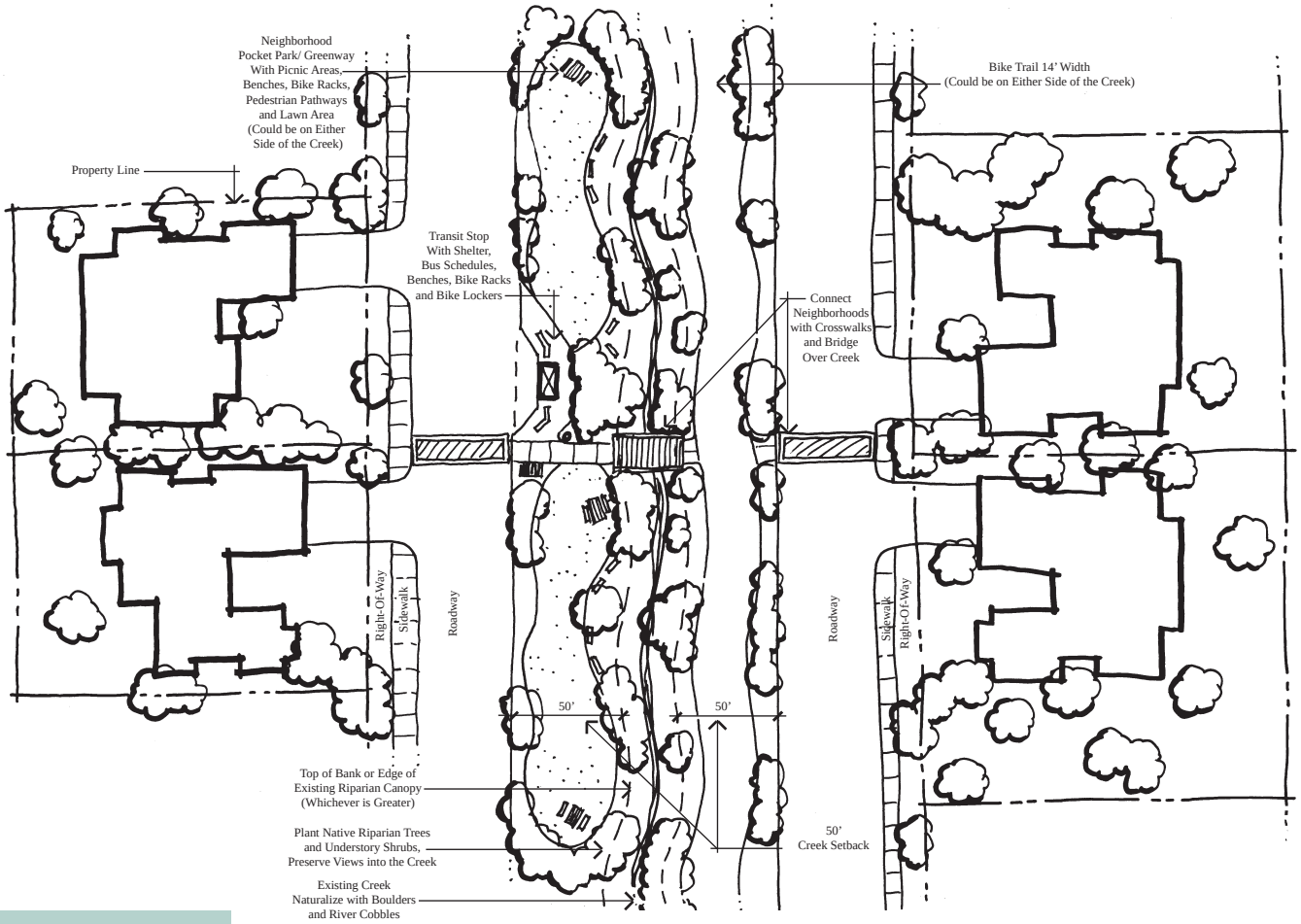
Where new residential development is expected to occur adjacent to subject waterways, the following design principles are recommended:

Residential Development Guidelines:

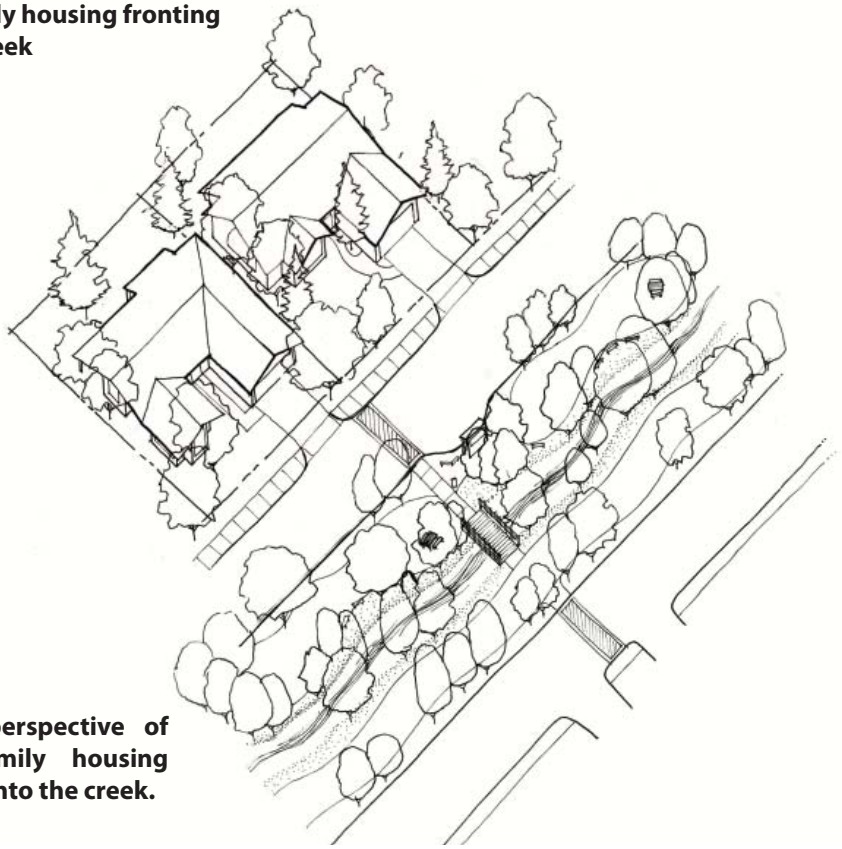
- Outside the 50-foot setback area, local streets should front onto a majority of the waterway frontage. Residential development that backs up to the waterway corridor should be discouraged.
- Pedestrian access from the local street and sidewalk system to the waterway trail system should be provided.
- Homes designed in adjacent subdivisions should be sited to front on to the adjoining local street facing the waterway corridor.
- Whenever possible, park amenities should be designed within the waterways setback area to provide informal pocket park amenities for adjoining residential neighborhoods.
- Wherever possible, waterway corridors should be connected to any neighborhood parks that are required as a part of adjoining residential subdivision development.
- Where subdivisions are planned on either side of the waterway, pedestrian connections should be provided through the waterway setback area. Bridge crossings will provide character and access between different neighborhoods.
- Where appropriate, locate transit stops and school bus stops within the waterway corridor on local streets to serve as gathering points, commuter collection areas to local schools or transit services.



Typical Residential Section



Single family housing fronting onto the creek

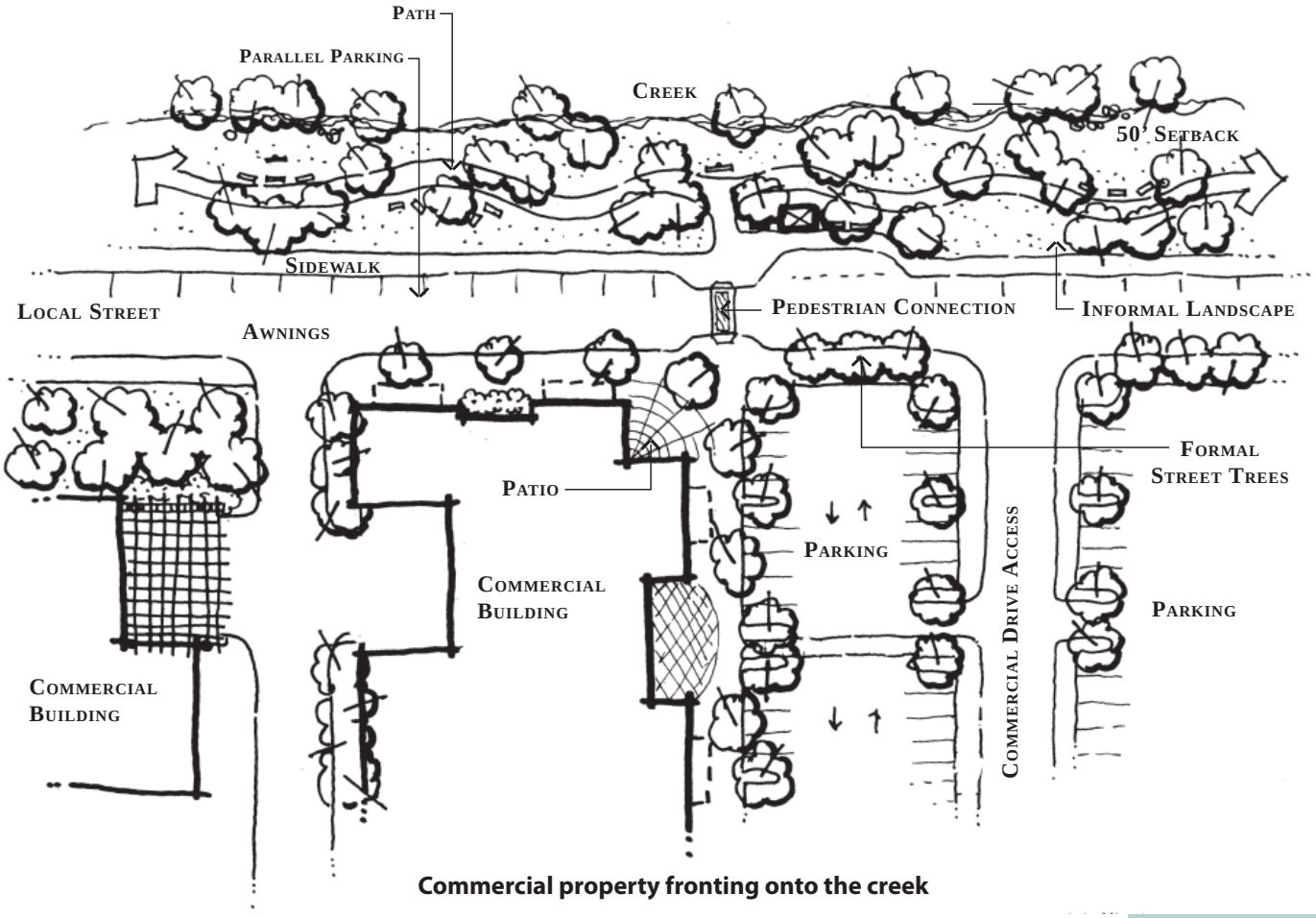


Birdseye perspective of single family housing fronting onto the creek.

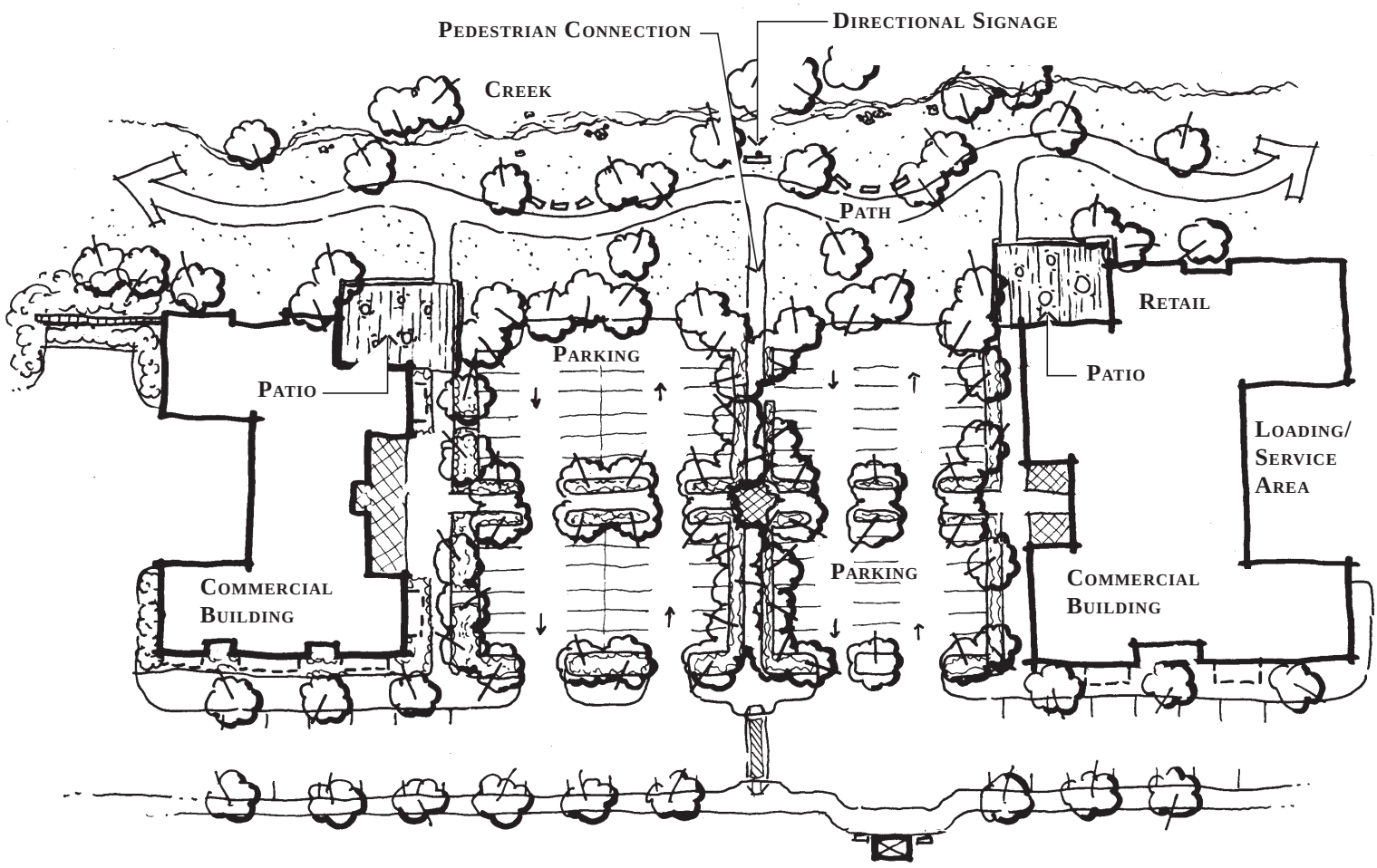
Commercial / Industrial Development

Where commercial development is expected to occur adjacent to subject waterways, the following design principles are recommended:

- Wherever possible, commercial buildings should present a well-designed façade to the waterway, service areas, loading docks, and storage should be sited away from the waterway and screened from view.
- Wherever possible commercial/ retail buildings should be sited to front on to an adjoining local street facing the waterway corridor.
- Access to service areas and docks should not front directly onto the creek corridor.
- When ever possible a pedestrian connection should allow commuters to access the commercial site from a Class I or Class II trail.
- Pocket parks, patios, or plazas in commercial development should front onto the waterway trail supporting the "linear park" theme through the City.
- Elements such as trash, storage, tanks, mechanical equipment, etc., should be screened from view from the trail. Landscaping, screen walls, or enclosures within buildings are a few ways to accomplish this.
- Commercial buildings may side onto the waterway with pedestrian / bike connections. If so, then parking layout should open up onto the creek corridor.
- Pedestrian access from the local street and sidewalk system to the waterway trail system and into the interior of the commercial parking areas should be provided.



Commercial property fronting onto the creek



Neighborhood commercial sides onto the creek

10.0 IMPLEMENTATION, RECOMMENDATIONS, AND COST ESTIMATES

This chapter discusses the activities necessary to implement the Visalia Waterways Master Plan as described in this document. It includes recommendations on acquisition of land, trail development, trail maintenance, and estimated costs for land acquisition and trail costs on a per-mile basis. It also includes a description of potential funding sources, trail administration, and liability protection. See Appendix C for additional information about the Waterway and Trails Master Plan Implementation Plan.

Waterway Trail Setback Acquisition

One of the first actions of the City to begin implementing the Waterway Trail System will be acquisition of the setback area that adjoins the waterways. The following section describes the historical methods used to acquire land, estimated costs, and recommendations. Land for the waterway trail system as described in this document will need to be acquired either through the purchase of land in fee title, the purchase of an easement or the dedication of either land or easement in order to construct the proposed trail system. Current City policies pertaining to waterway acquisition in the Conservation, Open Space, Park & Recreation Element of the General Plan requires a setback of 50 feet from the top of the outer toe of Mill, Packwood and Cameron creeks (except in the downtown district where a minimum setback of 15 feet is required) for the purpose of establishing a linear green and trail facility. Within this setback area, development of residential, commercial, or other structures is prohibited. Allowable uses include trails, passive park facilities, and the amenities necessary to create an attractive recreation system. Acquisition of the land required to implement the proposed trail will likely occur as the adjacent properties are proposed for development. Since 1996 it has been the policy of the City of Visalia to acquire the setback area through purchase. The City has established an enterprise account for the purpose of funding the acquisition, development, and maintenance of the waterways. Funds are derived for this enterprise account from a combination of two sources:

- The storm drain utility fee, which is charged monthly to all residents.
- A storm drain impact fee charged to all new development.

Together these fees currently generate approximately $250,000 annually.

Additional methods to acquire land necessary to implement the waterways trail system could include procurement of grants and dedication of land or easements from adjacent property owners and/or developers. For example, a State Habitat Conservation Grant was recently awarded to the City for the acquisition of nine acres of sensitive riparian valley oak habitat on Mill Creek and Evans ditch, and the City recently received a donation of approximately .5 miles of setback on Mill Creek from an adjacent property owner. The Park and Recreation Foundation has raised $50,000 for two projects on waterways.

The City has been successful in securing over $1.6 million in non-City funding for waterway projects from the following programs: Land Conservation Fund, Transportation Enhancement Act, Non-Motorized Trail Grants, and the Habitat Conservation Fund.The ability of the City to acquire additional land for the trail system through grants and/or dedications, in addition to utilizing the enterprise account, is a very important element of the plan.

Estimated Setback Acquisition Costs

In 2003, the City conducted a study to identify the setback area to be acquired to implement the Waterway Policy. Parcels for acquisition were categorized by land use, and land values were assigned. It was determined that the City would need to acquire 95 acres along all of the waterways over a 10 year period, at a projected cost of approximately $5 million or $52,000 per acre.

Methods

In order to implement the trail system, the first priority will be the acquisition of land in the setback area. In terms of prioritizing methods to acquire land, the City should augment the purchase with an active grant writing program.

History has shown, the success of this endeavor with the St. John's River Trail System and Mill Creek. One of the primary purposes of the Waterway Trail Master Plan is to more effectively compete for grants by having an adopted Master Plan.

Secondly, it is recommended that the City should actively pursue dedication of land concurrent with adjoining development for the setback area. Because the setback area is not developable, the utilization of this area is diminished for adjoining development. The City could consider giving credit for the dedicated setback area against required impact fees and also consider allowing the setback area to be calculated for developable density in project calculations. Acquisition of the setback area through dedications would considerably lessen costs to the City associated with implementing the waterway trail program and provide additional resource to be directed to trail construction and operations.

Recommendations

The following recommendations should be considered to acquire land for the waterway trail setback:

- In 2003, the City conducted a study of the Waterway Impact Fee used to fund acquisition of setback areas, and increased the fee an average of 200%. The City should continue to utilize the impact fee to acquire setback areas that can be attributed to new development and conduct reviews.
- The City has been successful in obtaining grants to fund acquisition of setback areas. The City should continue to support staff efforts to obtain grant funds for acquisition.
- The City has undertaken a project to purchase setback areas prior to the development of a property. It is recommended that this program be continued.

- Additional funding for acquisition may be obtained from a combination of grants, dedications, and the City General Fund. The City should attempt to acquire property in advance of development where feasible.
- Investigate dedications of land concurrent with adjoining development in exchange for credit against required park impact fees, or to allow the transfer of development density from the setback area to the adjoining land area.
- Investigate the use of conservation easements or other methods for dedications of setback area.
- Waterway and setback areas can positively impact the value of surrounding properties. Educate developers and landowners on the positive impacts to their land, and pursue donations and gifts of property where that opportunity exists.
- Investigate the donation of land concurrent with development or annexation prior to any land use or zoning change approvals, and consider transfer of development density from the setback area to the adjoining land area.

Waterway Trail Development

This next section discusses the estimated per-mile cost of trail construction, funding resources and recommendations for trail development activities as described by this document.

Estimated Per-Mile Costs

The following table provides an ordered magnitude estimate of the probable cost for installation of a Class I trail system and various trail amenities described in this document. The trail will consist of asphalt bike path approximately 10 feet wide with adjoining landscaping. Some of the trail amenities may include split-rail fencing, bikeway signs and striping, lighting in certain areas as desired by the City, irrigation for landscaping, rest areas, transition from the Class 2 street system to the Class I bike facility, etc.

Typical Average Cost Per Mile		
Class I - Trail		
Demolition		**Cost/ Mile**
Clear and Grub (12' Path Width + 2' Each Side)		$8,448.00
Excavation (14' incl. shoulders)		$8,860.00
Disposal Fee (40 Yard Truck/ 20 Mile Round Trip)		$3,870.00
	Subtotal=	$21,178.00
Trail Construction		
Rip and Recompact Native Soil (Bike Path area)		$46,465.00
Asphalt Bike Path (2" AC 10' Wide, over 4" base 10' Wide)		$250,000.00
Bike Path Painted Striping (Center & Sides)		$7,767.00
	Subtotal=	$304,232.00
Trail Amenities Construction		
Split Rail Fencing		$155,335.00
Signs with Metal Panels and Wood Posts (1/2 mi. intervals)		$1,000.00
Light Poles (150' spacing)		$164,870.00
Lighting Conduit/Trenching		$77,680.00
	Subtotal=	$398,885.00
Landscaping		
Trees (5 gal. - 40' spacing both sides)		$9,717.00
Drip Irrigation (each side)		$10,355.00
	Subtotal=	$20,072.00
Option: Driwater Irrigation (Substitute for Drip Irrigation)		$2,720.00
	Class I - Trail Total Direct Costs=	$747,087.00

Class II - Trail		
Construction		
Bike Path Painted Striping (Both Sides of Street)		$4,240.00
Signs with Metal Panels and Wood Posts (1/2 mi. intervals)		$2,875.00
	Subtotal=	$7,115.00
	Class II - Trail Total Direct Costs=	$7,115.00

Funding Sources

Historically, the City has relied on grants, donations, developer participation, and volunteer contributions to build the trails and landscape the setback area. The City has been successful in obtaining a number of grants for the development of the trails including the non-motorized trail grant, the land and water conservation grants, state parks on competitive grants, and the re-leaf grants. Since 1984, the City has received over $408,000 in grants from the State Park system to acquire and develop the St. John's River Trail. In addition, developers have seen the advantage of improving adjacent setbacks and have included setback maintenance in landscape and lighting districts and in some cases have even participated in the development of the setback.

To effectively implement the Waterways Trail Master Plan the City of Visalia will need to continuously commit to the vision for the comprehensive regional trail system. The City must be engaged in all phases of the trail system's development and operation. Achieving the goals set forth in this plan will also require constant administration and management of an aggressive funding program backed by continued community support. The City's personnel will need to be well versed in grant writing, community outreach, and administration of financial plans. Reliable adequate sources of funding are mandatory for the annual operations and maintenance of the facilities and programs to assure a quality program and continued community support.

Financing the development of the trails and related trail improvements will require the City to carry out a combination of strategies. For maximum benefit, the City should utilize multiple approaches, including creating public and private partnerships, linking trail projects to development in the neighboring communities, weighing funding sources against each other to provide matching funds, and synchronizing development of trail segments with approaching funding cycles. Other promising methods include creation of "Adopt a Trail" programs and involving local non-profits for community outreach, coordinating volunteer trail crews, and fund raising.

The following section describes some of the various funding sources that are currently available for the types of projects recommended in this Plan. While grant availability is unpredictable, the trend for transportation-related improvements is promising for the foreseeable future. The list of funding sources should not be considered inclusive because programs are constantly evolving and new programs and opportunities may become available over the life of the Plan. A coordinated strategy that is attentive to current and evolving development trends in the City and that can creatively apply and mix potential funding opportunities will offer the City the maximum advantage toward realizing the vision of the Waterways Trails Plan.

Federal

F/1 Congestion Management and Air Quality (CMAQ)

DESCRIPTION: The federal government provides money to the State of California for transportation projects that contribute to the attainment or maintenance of National Ambient Air Quality Standards in non-attainment or maintenance areas for ozone, carbon monoxide or particulate matter. Trail projects have been awarded funding. Some projects have received 100% funding, and others require up to 20% state or local match.

TARGET PROJECT COMPONENTS: Bicycle and pedestrian facilities, traffic flow improvement programs.

CONTACT: Tulare County Association of Governments (TCAG) is the regional entity responsible for distributing transportation and related funds from the State and Federal levels, as well as monies collected from local gasoline taxes and other sources.

F/2 Transportation Enhancement Activities (TEA)

DESCRIPTION: The federal government provides monies to the State of California for the purpose of enhancing the efficiency of surface transportation, including motor vehicles, pedestrian, bicycle, and other forms of transportation. TEA monies are allocated by the state to the various local councils of governments. This competitive program is available to local jurisdictions. In order to be eligible for TEA monies, the City must submit an application to the TCAG for various transportation enhancement projects, such as bike racks, pedestrian paths, and staging areas. This fund requires a 20% match by the local jurisdiction.

TARGET PROJECT COMPONENTS: Trail construction, benches, bike racks, interpretive exhibits, directional and safety signage, trailside rest facilities, staging nodes.

CONTACT: Same as above.

F/3 Recreational Trails Program

DESCRIPTION: Provides federal funding for recreational trails and trails-related projects to public agencies and non-profit organizations that manage public lands. Funding is available on a competitive basis to these agencies and may be used for maintenance and restoration of existing trails; development and rehabilitation of trailside and trailhead facilities, and trail linkages; construction of new recreational trails; acquisition of easements and fee simple title to property for recreational trails or corridors; and operation of educational or safety programs relating to the use of the recreational trails. At minimum of a 20% match is required for these funds. Deadline for the application of the next cycle (2003/04) is October 1, 2003.

TARGET PROJECT COMPONENTS: Trail acquisitions, trail construction, trailside rest facilities, directional and safety signage.

CONTACT: Administered at the federal level by the Federal Highway Administration (FHWA). It is administered at the state level by the California Department of Parks and Recreation (DPR). The State Parks Department's Office of Grants and Local Services administer non-motorized project applications.

F/4 Safe Routes to School (SR2S)

DESCRIPTION: The SR2S program uses federal transportation funds to improve and enhance the safety of pedestrian and bicycle facilities and related infrastructure. Construction projects for bicycle and pedestrian safety and traffic calming projects. To be eligible for these funds, the project must be located on any state highway or on any local road. Projects must correct an identified safety hazard or problem on a route that students use for trips to and from school. Federal reimbursement rate is 90%. Interested local agencies may submit an application to the local Caltrans District Office by the due date established by the district.

TARGET PROJECT COMPONENTS: All trail segments proximate to schools and / or that provide safe connections to school campuses.

CONTACT: Cal Trans District Office 6 (headquartered in Fresno) (559)488-4082 or (559)445-5001. Information on Safe routes to school available at: http://www.dot.ca.gov/hq/LocalProgram/

F/5 Land and Water Conservation Fund

DESCRIPTION: This is a Federal Program administered in California under the Department of Parks and Recreation. Local agencies eligible to share in the fund are counties, cities, recreation and park districts and special districts with authority to acquire, develop, operate, and maintain public park and recreation areas. The types of projects most often funded by local agencies are acquisition or development of neighborhood, community, and regional parks that include top priority recreation projects or acquisitions of wetlands. (Combination acquisition and development projects are not eligible.) Property acquired or developed under the program must be retained in perpetuity for public outdoor recreation use. This is a reimbursement program. You are expected to finance the entire project. Fifty percent of the actual expenditures up to the support ceiling of the grant will be refunded when the project has been completed. Cities, counties and districts are eligible to apply. Projects submitted by local agencies will be evaluated by the Screening and Ranking Criteria found in the Procedural Guide at http://cal-parks.ca.gov/pages/1008/files/lwguide.doc

TARGET PROJECT COMPONENTS: Trail acquisition, construction, maintenance, interpretive exhibits.

CONTACT: Felicia Miller 651-8581, fmill@parks.ca.gov

State

S/1 Wildlife Conservation Board (WCB)

Selects, authorize and allocate funds for the purchase of land and waters suitable for recreation purposes and the preservation, protection and restoration of wildlife habitat. The Wildlife Conservation Board's three main functions are land acquisition, habitat restoration and development of wildlife oriented public access facilities. These activities are carried out under the seven programs, out of which the following ___ apply to the Waterways Trails Project:

Land Acquisition Program: This program is a component of all WCB programs. WCB may either purchase real property or rights in real property, or make grants to groups and agencies for this purpose. Contact: Region 4 Headquarters, (559) 243-4005 X151.

TARGET PROJECT COMPONENTS: Land acquisition.

Public Access Program: Financial assistance is available to cities, counties and public districts or corporation for development such as access roads, trails, boardwalks, interpretive facilities and lake or stream improvements. Support facilities such as restrooms and parking areas are also eligible. The WCB may fund 100 percent of the qualifying project development costs. Under the Wildlife Conservation Law of 1947, it is required that the State have a proprietary interest in the land or water on which the improvements are made. (Prior to approval of a project by the WCB, a lease agreement is entered into between the local agency and the State. The term of the lease is generally 25 years.) All operation and maintenance responsibilities for such projects must be assumed by the local agency, and these provisions are often combined with the lease in a single cooperative agreement. Engineering, costs estimates and contract administration are the responsibility of the local agency. Project construction and payment to the local agency for project costs is carried out by Standard Agreement between the local agency and the State.

TARGET PROJECT COMPONENTS: Trail construction, interpretive facilities, creek restoration, restrooms, and staging and parking areas. [Note: Project areas subject to these funds will be subject to a lease agreement with WCB.]

Habitat Enhancement and Restoration Program (General): Eligible enhancement and restoration projects must provide for the long-term maintenance of the restored and/or enhanced habitat. Eligible applicants for restoration projects include nonprofit conservation organizations and federal, state or local governmental agencies. Habitat enhancement and restoration projects, like the acquisition and public access projects, are carried out pursuant to recommendations from the DFG. Restoration and public access projects may be located on Department-owned or other lands.

TARGET PROJECT COMPONENTS: Restoration, revegetation, and public access.

California Riparian Habitat Conservation Program (CRHCP): The WCB is authorized to award grants for riparian conservation purposes to nonprofit organizations, local government agencies, state departments and federal agencies. The basic mission of the program is to develop coordinated conservation efforts aimed at protecting and restoring the state's riparian ecosystems. Representative eligible projects include bank stabilization and re-vegetation to control erosion and establish riparian corridor; Fencing riparian corridor to control and/or manage livestock or wildlife impacts on habitat/channel stability; Implementation of land uses changes to allow natural stream function to return (for example, breach levee or set levee back to reconnect the stream with its flood plain).

TARGET PROJECT COMPONENTS: Revegetation, bank stabilization, erosion control.

CONTACT: Wildlife Conservation Board (916) 445-8448.

S/2 Per Capita Grant Program

DESCRIPTION: Funds may be used to develop facilities that promote positive alternatives for youth and that promote cooperation between local park and recreational service providers and youth-serving non-profit corporation; rehabilitate facilities at existing local parks, which will allow the parks to be more efficiently managed and will reduce operational costs, promote family-oriented recreation, including art activities; provide for open safe and accessible local park lands, facilities and botanical gardens. Per Capita grant funds can only be used for capital outlay. Costs related to construction management, which can be documented as direct charges, are eligible. Indirect costs are ineligible. Grantees must have a fully executed contract by June 30, 2003, and all projects must be completed by June 30, 2008. This program is administered by the CA Department of Parks and Recreation.

TARGET PROJECT COMPONENTS: Interpretive exhibits, trail construction (particularly those that connect to existing park facilities from other areas),

CONTACT: Felicia Miller 651-8581, fmill@parks.ca.gov
Additional information may be found at:
http://www.parks.ca.gov/pages/1008/files/PerCapitaFinal.doc.

S/3 Roberti-Z'berg-Harris Program

DESCRIPTION: Available for the acquisition, development, or special major maintenance of recreational lands and facilities; and innovative recreation programs that respond to unique and other wise unmet recreation needs of special urban populations. This program consists of block grants and competitive grants to special districts, cities, counties, and regional districts.

TARGET PROJECT COMPONENTS: Trail acquisition, trail construction.

CONTACT: Administered at the federal level by the Federal Highway Administration (FHWA). It is administered at the state level, by the California Department of Parks and Recreation (DPR). The State Parks Department's Office of Grants and Local Services administer non-motorized project applications.

S/4 Bicycle Transportation Account

DESCRIPTION: Grant funds for new bike paths, bike lanes, and bike routes, bicycle parking facilities, bike racks on buses, traffic control devices to improve safety, planning, safety, education, and maintenance of bikeways and bicycle parking facilities. To be eligible for BTA funding, cities and counties must have an adopted Bicycle Transportation Plan that complies with Streets and Highways Code §891.2 and has been approved by the appropriate regional transportation agency and Caltrans. State law requires project to conform to the minimum design standards. The program sunsets on January 1, 2005, unless a later enacted statute deletes or extends that date. Applicants provide a local match of at least 10% of total project cost. Cities or counties eligible for up to 25% of annual amount in pot.

TARGET PROJECT COMPONENTS: Trail construction, staging nodes, signalized crossings, fencing, safety devices, directional and safety signage, lighting.

CONTACT: Cal Trans District Office 6 (headquartered in Fresno)
(559)488-4082 or (559)445-5001

S/5 Environmental Enhancement and Mitigation Program

DESCRIPTION: Offers grants to local state and federal agencies and non-profit organizations for projects to mitigate the environmental impacts caused by new or modified state transportation facilities. These are not stand-alone grants. EEMP projects must piggyback or add onto other mitigation projects. Grants are awarded in three categories: Highway Landscape and Urban Forestry; Resource Lands; Roadside Recreational.

TARGET PROJECT COMPONENTS: Tree planting, landscaping, restoration, staging nodes, interpretive exhibits.

CONTACT: EEMP Coordinator, California Resources Agency, 1416 Ninth Street, Suite 1311, Sacramento, CA 95814, Ph. 916-653-5656. For more information see: http://resources.ca.gov/eemp_new.html.

Other

O/1 CA ReLeaf Tree Planting Grant

DESCRIPTION: Funds available to community-based groups throughout California for projects that plan large-crowning environmentally tolerant trees on public property to provide shade and other benefits. The City could collaborate with a group such as Urban Tree Foundation to acquire ReLeaf grant funding.

TARGET PROJECT COMPONENTS: Tree planting.

CONTACT: The annual grant program is administered by California ReLeaf, the urban forestry division of TPL, and funded through the California Department of Forestry & Fire Protection. CA ReLeaf 949-642-0127 or 916-557-1673, ext. 12.

O/2 CA Conservation Corps

DESCRIPTION: This is not a grants program, but a free source of volunteer labor. The mission of the CCC is to provide meaningful work and educational opportunities to assist young men and women in becoming more enjoyable, while protecting and enhancing California's environment, human resources and communities. The program is organized to provide corps members and services depending upon the project requirements. A crew consists of 10-15 well-trained young men and women; a staff supervisor who directs the crew; a vehicle, and basic tools. Projects must provide a natural resource or other public benefit, and provide corps members with education and training in employable skills.

TARGET PROJECT COMPONENTS: Trail construction, restoration, staging nodes.

CONTACT: California Conservation Corps,. 1719 24th Street, Sacramento, CA 95816, Phone (916) 341-3100

O/3 Gifts and Endowments

DESCRIPTION: General contributions from private individuals or businesses are an attractive source of financing. The Visalia Parks and Recreation Foundation is a good starting point for raising money for the project. Although fund raising through donations is unpredictable, it could help supplement other more reliable sources.

TARGET PROJECT COMPONENTS: Trail amenities (benches, lights, staging areas, trees, etc.).

CONTACT: Varies; local foundations.

O/4 Adopt a Trail / Adopt a Trail Feature (e.g. bench, light)

DESCRIPTION: Donated monies may be earmarked to pay for trail construction or trail fixtures such as interpretive kiosks, lighting, or benches, is to provide name recognition to donors or those who helped pay for specific features. A small plaque or sign could be fastened to the appropriate fixture or at trail heads of appropriate trail segments. This program would have to either be developed by the City or a local community group willing to assume responsibility for coordinating donors with projects.

TARGET PROJECT COMPONENTS: Trail segments, interpretive exhibits, trailside shelters.

CONTACT: N/A

Recommendations

The following are recommendations for development of the waterway trail system:

- Continue to aggressively seek grant funding and expand grant writing efforts. Consider contracting for services of an expert grant writer to assist the City in applying for grant applications.
- Utilize volunteers to plant trees, install irrigation, landscaping, etc.
- Institute a "Friends of the Trail System" wherein pro-active program to accept gifts and donations for improvement of the trail system could be developed. The Visalia Park & Recreation Foundation was created to solicit gifts and donations from the community as well as seeking grant funding for various projects. The waterway system could be added to the foundation goals.
- Consider the creation of additional landscape and lighting districts. The City has been successful in including the costs to develop and maintain the waterway setback and trails and various landscape planning districts. These included the installation and maintenance of irrigation and landscaping that would be in excess of the level generally provided by the City or where there are not sufficient funds and the developers are willing to front the development cost and be reimbursed at a future time.
- Consider obtaining trail development in association with adjacent development by giving credit to required park impact fees or through a density bonus program.
- Consider increasing the park development fees to include funding for the development of setbacks.

Waterway Trail Maintenance

The following describes typical trail maintenance activities that would be expected for a system of the nature described in this document.

- Shoulder and grass mowing
- Pruning and remove fallen trees
- Trash disposal
- Pavement sealing/repaving/pothole repairs
- Bollard replacement
- Irrigate/water plants
- Graffiti removal
- Pavement sweeping & marking replacement
- Weed control
- Tree, shrub, & grass trimming/fertilization
- Sign Replacement / repair
- Fence/barrier repair and replacement
- Clean drainage system
- Maintain irrigation lines/replace sprinklers
- Lighting replacement/repair
- Maintain furniture
- Maintain emergency telephones

Estimated Maintenance Cost Per Mile

The estimated annual cost for trail maintenance excluding major landscaping will be $8,000 -$12,000 per mile of Greenway depending on the amenities, design extent, and frequency of operation and maintenance that is provided. The City may be able to reduce this cost by using low-maintenance landscaping. The City of Visalia may wish to use their own current unit costs for streetscape maintenance to determine the added cost of the proposed landscaping and irrigation system upkeep. There are likely to be economies of scale when the Trail is 100% completed and based on the length of the facility. Capital purchases are expected to be limited to items such as a sweeper, which the City may share with other park facilities and/or schools as necessary.

Potential Funding Sources

The funding sources that may be used for ongoing annual maintenance of a waterway trail system would consist of the following:

- California Conservation Corps. This is a source of volunteer labor that is supported by the mission of the CCC providing meaningful work and educational opportunities for young men and women while at the same time protecting and enhancing California's environment.
- Gifts and endowments. General contributions from private individuals or businesses are an attractive source of financing, for example, the Visalia Parks & Recreation Foundation is a good starting point for raising money for the project. Funds could be provided to supplement other reliable sources.
- Development of revenue generating uses along the trail, such as leases or vendors. A program such as this may be linked to areas within the adjoining parks where additional space for a facility could be more easily accommodated. Leases may include bicycle rental, food and beverage purveyors.
- Adopt a trail program. This type of program is very successful in many communities to develop money for the installation or maintenance of specific trail elements such as kiosks, lighting, benches, etc. Organized groups such as the Boy Scouts, Girl Scouts, YMCA, or others could adopt a segment of trail and take over maintenance responsibilities of oversight through the City Parks Department.

Recommendations

Community buy-in and support of recreational facilities such as this are greatly enhanced by creating an identifiable organization to safeguard and provide stewardship of this important facility. Giving formal committee status to the waterway and trail task force may be a good starting point. The following programs and activities should be considered:

- Create an adopted trail program and engage local community organizations and individuals to participate.
- Consider establishing a new Waterway and Trail Committee to be responsible for the implementation of the Master Plans related to waterways and trails.
- Consider establishing additional landscape and lighting districts.
- Look for opportunities to create revenue generating uses within the existing park and waterways trail system.

Trail Administration

A key ingredient in the success of developing the waterway trail system will be establishing leadership and seeing through the various aspects of the implementation. Generally this falls to the City Park & Recreation staff to add these responsibilities to their existing programs and responsibilities. The development of the waterway trail document was guided by the Waterway Trails Task Force that provided valuable information and input concerning community values, specific recommendations for the long-range plan. It is recommended that the Waterway Trails Task Force activities be expanded and extended to serve as a liaison and advisory group for the implementation of this system. The Task Force would work in cooperation with City Park & Recreation staff providing assistance and leadership with the various aspects of implementation. For example, Task Force activities could include the following:

- Assistance with the development of policies friendly to enable the City more easily acquire land necessary for the trail system as described in this document.
- Assistance with the development of policies necessary to more easily allow development of the trail by methods described in this document.
- Assistance with identifying potential grants and the grant writing processes.
- Assistance with the establishment of an "Adopt a Trail" program.
- Assistance with the establishment of either a new Waterway Trail Foundation, or merging the waterway trail system into the existing Park & Recreation Foundation.
- Promoting all waterway trail activities.
- Prioritization of various implementation segments.
- In general, keep the waterway trail program moving forward demonstrating success of regular installation of trail segments.
- Reporting the successes and activities of the City's efforts in installing the waterway trail system, thereby gaining support and momentum in this endeavor.

Waterways Trail Manager

Under the direction of the City Park and Recreation department, the City may wish to consider appointing a Trail Manager for the purpose of managing all trail operational activities. A summary of potential management activities is listed below.

- Coordinate development of the Waterway and collaboration with the Waterways Trail Advisory Committee.
- Organize, coordinate, and implement trail operations plan
- Implement maintenance plan and assure adequate funding
- Obtain bids and manage contracts for maintenance and improvements
- Monitor security/safety of the trail through routine inspections
- Oversee maintenance and rehabilitation efforts
- Acquire waterway setbacks
- Manage and respond to issues and incidents
- Act as the local trail spokesperson with the public, including elected officials, and respond to the issues and concerns raised by trail users
- Develop and manage an emergency response system in coordination with local fire and police
- Respond to direction regarding development and construction of the project and on going maintenance

Waterways Trails Manager Costs

The trail management responsibility may be placed with a senior staff person in the City of Visalia Parks Department or Public Works Department. This Trail Manager has a widespread responsibility, ranging from managing and monitoring maintenance activities, coordinating with adjacent property owners, responding to and monitoring reported problems, maintaining records, managing a budget, pursuing outside funding sources, and coordinating with other cities along the Trail. It is projected that this responsibility would take up approximately 200 hours per year for a senior staff person, or roughly 10% of their time. This administrative expense would be approximately $10,000 per year, assuming a fully burdened annual salary of $100,000.

Liability and Indemnification

In general, liability risks for neighbors of shared-use path users are well protected and probably reduced from current levels by the recreational use statute and other statutes. Assuming the Waterway Trail is designed, built, and operated to meet established minimum standards, the liability risks will be significantly reduced for the City of Visalia.

The City of Visalia should consider the following common practices to provide the necessary liability protection for the City.

Insurance: It is assumed that the trail will be covered under existing insurance policies for the City of Visalia. There is typically no additional premium cost associated with the operation and maintenance of a trail. However, while insurance may cover costs associated with lawsuits, it neither prevents suits nor minimizes the risk of court judgments that can cost the public entity a considerable sum of money. In some cases, a property owner who has granted property use to a public agency for a trail may require an additional insurance policy covering potential lawsuits.

Risk Management: To minimize liability, it is critical to adhere to established trail design standards. This is especially important because a substantial proportion of potential lawsuits may stem from accidents between trail users who may try to place blame for the incident on the design of the trail. In some states, substantial immunity is afforded public agencies that provide trails in accordance with widely accepted standards or guidelines. The design standards for the City of Visalia Waterways Trail project should follow the Caltrans *Highway Design Manual* and the AASHTO *Guide for the Development of Bicycle Facilities*, and the trail development standards outlined in this document. Other practical measures include the following:

- Post warning signs for known hazards that are not easily identified
- Trail regulations should be posted and enforced
- A trail maintenance plan should be in place and accurate maintenance records should be kept
- Keep the trail maintained to the level defined in the plan
- Trail should be regularly inspected for hazards
- Hazards and maintenance problems reported by trail users should be evaluated and addressed with immediate and appropriate measures
- Ensure that there are adequate emergency access points to the trail

These common sense precautions are indicative of good faith and responsible stewardship of the trail facility, and will likely reduce the number of potential lawsuits or the size of settlements.

Private Property Protection

While the Waterways Trail will be located in a waterway setback areas that has been acquired for the purpose of establishing a recreational trail, a number of private properties are located directly adjacent to the proposed route. Neighbor concerns regarding path location near their properties typically include a loss of visual privacy and concerns about increased crime, vandalism, noise, and fire. Criminal activity is not likely to occur along a path that is well planned, designed, operated, maintained, and used. Wherever possible, the path should be located as far away as possible to protect the privacy of adjacent property owners. Fire prevention concerns should be addressed in part by adequate weed abatement.

Protections Against Claims Against Adjacent Landowners

In addition to the design and operational protections discussed below, there are existing legal protections available to the adjacent landowners against claims by trail users and trespassers on their land.

State law (California Public Resources Code § 5075.4) was designed to protect private property owners whose land lies adjacent to a public trail where a trail user (a) trespasses on the adjacent private property and is injured or killed, and (b) where an activity started or is taking place on the trail (by someone other than the adjacent landowner) results in injury to, or death of, a person or damage to the property of another. As a result of the statute, the adjacent private landowner would be free of liability for injury to trespassers (or in the event of a death, liability to the trespasser's heirs). The statute holds the adjacent landowner free of liability for any activity undertaken or started on the trail that results in injury to another person or another's property or death of another person on the private adjacent land.

Protections Against Claims Against City of Visalia (Landowner of Trail)
In addition to existing insurance policies, the City maintains Government Code § 831.4 to provide protection against claims made against public entities for injury on trails. It states:

"A public entity, public employee, or a grantor of a public easement to a public entity for any of the following purposes, is not liable for an injury caused by conditions of:

a. Any unpaved road that provides access to fishing, hunting, camping, hiking, riding, including animal and all types of vehicular riding, water sports, recreational or scenic areas and which is not (1) a street or highway, or (2) county, state, or federal highway, or (3) public street or highway of a joint highway district, boulevard district, bridge and highway district, or similar district formed for the improvement or building of public streets or highways.

b. Any trail used for the above purposes.

c. Any paved trail, walkway, or sidewalk on an easement of way that has been granted to a public entity, so long as such public entity shall reasonably attempt to provide adequate warnings of the existence of any condition of the paved trail, walkway, path, or sidewalk which constitutes a hazard to health or safety. Warnings required by this subdivision shall only be required where pathways are paved, and such requirement shall not be construed to be a standard of care for any unpaved pathway or roads."

The California Court of Appeals (2nd District) has held that the immunity provided by subsection (b) of the statute is not limited to "access" trails, but includes a trail "whose use itself is the object of the recreational activity." (See Carroll v. County of Los Angeles (1997) 60 Cal.App.4th606,609,610, affirmed in Farnham v. City of Los Angeles (1998) Appellate Case No. B 117963).

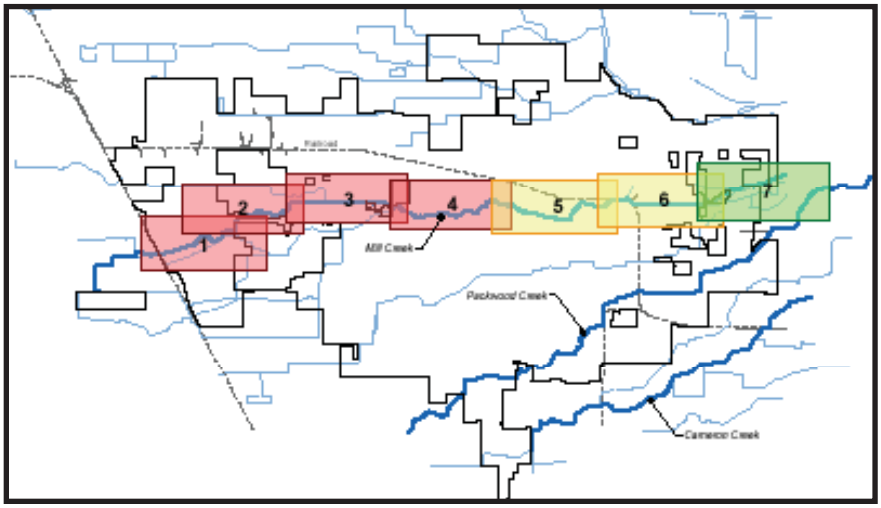
A. EXISTING CONDITIONS/ OPPORTUNITIES AND CONSTRAINTS

One of the first steps in assessing the feasibility of the trail's alignment and potential design character is to carefully review the existing physical characteristics of the trail corridor. Features such as topographical conditions, sensitive habitats, creek crossings, street and highway crossings, adjacent land use, and property ownership are just some of the factors that influence the trail's location and design. These physical constraints help determine the most promising alignment for the trail including the preferred side of the creek, preferred crossings and areas to avoid completely.

An in-depth field tour was conducted by the project team to accurately record existing physical conditions along the trail corridors. Field notes and photos were transferred onto a set of trail segment maps that combined information relating to parcel lines, ownership, land use, building locations, and other improvements. All significant creek and drainage crossings and public street and highway crossings were identified. The maps were used by the design team to discuss and confirm the existence and/or severity of the conditions in the field, and how those factors translated into a set of design criteria for trail alignment. The project's segment boundaries are illustrated in the accompanying Reference Maps. A summary of the existing conditions along each creek trail corridor is provided in the following sections of the reference maps.

Mill Creek Corridor Study

Characterization:
The limits of the Mill Creek Corridor for the purposes of this study are Plaza Drive at Highway 198 to the West and Road 156 to the East. Mill creek encounters a large variety of both private and commercial uses on its journey through the community. Due to the diversity in the adjacent land uses, Mill Creek is divided into three distinct sections, Eastern Reach, Downtown District and Western reach.



Mill Creek Reach Sections: Showing Western/ Downtown/ Eastern Reaches

Mill Creek Western Reach

The Western Reach starting at Conyer Avenue includes a possible route behind Redwood and Sierra Vista Campus discussed by the school district for future pedestrian and bike improvements. Continuing northwest across Dollner, Mill Creek runs through a residential area to Mayor's Park, under Main Street meandering through more residential property where it turns south back under Main Street heading southwest through Main Street Park. Main Street Park trail improvements have been targeted for grant funding in the near future. Leaving Main Street Park, Mill Creek runs due west crossing Demaree Street into a potential Future Park/ Riparian area.

At Linwood Avenue Mill Creek splits with branches traversing a suburban area to the North and Persian Ditch to the South. The North branch runs parallel to Hwy. 198 crossing Akers through suburban area that transitions to rural-agricultural property where it crosses Shirk and eventually turns south and crossing Hwy. 198 running Southwest through the golf course and Plaza Park.

Mill Creek Downtown District

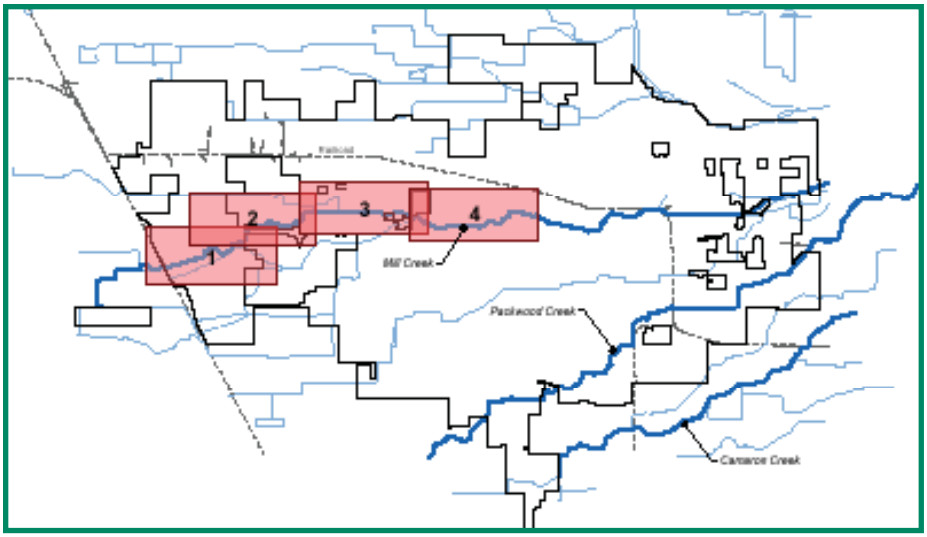
Running under Ben Maddox Drive, Mill Creek jogs at the Santa Fe Railroad bend through the industrial area targeted for future downtown creekside expansion. Leaving Sante Fe Street heading west Mill Creek is a culverted channel running under the downtown area where it angles south finally day lighting at Checkers Restaurant, and Kaweah Delta Community Hospital at West Street.

Mill Creek Eastern Reach

The Eastern reach of Mill Creek, starting at designated future community park site near road 156, transitions through rural agricultural property to suburban private property and stretches toward the downtown district one block north of the light commercial industrial section along Main Street east of Ben Maddox Drive.

Mill Creek Western Reach

Mill Creek Western Reach
Segments 1 through 4



Opportunities and Constraints Identification

The following lists briefly summarize opportunities and constraints identified through field visits and data review. The summary comments follow the reference map sequencing from West to East. For more detailed view of the sections, see the Mill Creek Preferred Trail Alignment Design Maps in Section 6.0.

Segment 1

Summary of Opportunities:

A. Potential Mid-Block crossing at the signalized intersection at the southerly on-off ramp to Hwy. 198 as the existing Class II bike lane running north through Plaza approaches the Highway.

Summary of Constraints:

A. Plaza drive is a highly travelled truck route becoming less desirable for biking to the north.

View southeast to the existing Class II bike lane through the Plaza Park and golf course connecting to Walnut Avenue.

Segment 2

Summary of Opportunities:

A. A future Free Span Bridge at Mill Creek crossing at Hwy. 198 could potentially link the north and south portions of the proposed Class I trail and the Class II lane at Crowley Avenue.
B. Suitable and preferred trail alignment at north side of Mill Creek.
C. Class I/ Class II trail connection at Shirk Road offering potential staging area and interpretive exhibit areas marking the entrance to trail system leading to downtown.
D. Transition to preferred Class I trail alignment on south side of Mill Creek.
E. Opportunity for trail parking at the proposed visitors center on the northwest corner of Hwy. 198 and Plaza Drive.

View East along Mill Creek corridor from Shirk road where a Class I trail could transition to the south side.

Summary of Constraints:

A. Caltrans future plans and approval for a free span bridge crossing at Hwy. 198
B. Private property land acquisition for Class I multi-use trail running east to Shirk.

Segment 3

Summary of Opportunities:

A. Suitable and preferred Class I trail alignment on South side of creek between Shirk and Akers and between Akers and Crenshaw.
B. Potential Mid Street or Non-Signalized crossing at Akers and Crenshaw.
C. Willow Glen Elementary adjacent land use for optional Class I trail alignment.
D. Potential future Class I trail alignment along south side of southerly branch of the creek to Linwood connection.

View East along Mill Creek corridor east of Akers approaching Crenshaw, note the existing Valley Oak trees.

E. Suitable and preferred Class I trail alignment on south side of Mill Creek between Linwood and Chinowth Street.

Summary of Constraints:

A. Without a Mid-street Crossing at Akers trail users must travel south to the existing signal to cross at Hillsdale. An optional trail alignment would be to travel in a straight line crossing Akers, but would create a dangerous mid-block crossing.
B. Private property land acquisition for Class I multi-use trail running east to Crenshaw.
C. Land lock along Mill Creek between Crenshaw and Linwood preventing future development or trail improvements.
D. Crenshaw is a local street with insufficient width for a Class II bike lane.

Segment 4

Summary of Opportunities:

A. At Chinowth the Class I trail would cross at the existing signal and would continue to run on the south side of Mill Creek through the riparian corridor park site branching away from the creek prior to Demaree Street.

View Northeast along potential Class I trail route through West Main Park.

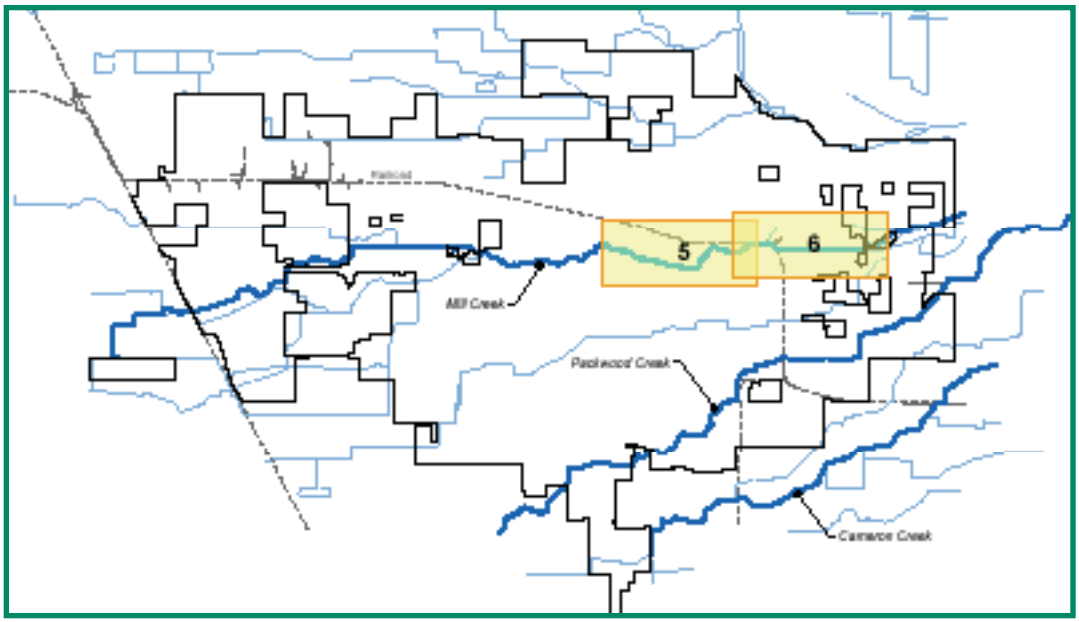
B. A signalized crossing would allow access to the east side of Demaree heading north along a Class II bike lane eventually connection to a Class I trail running along the south side of Mill Creek. The trail then turns south and then again east running along the Mineral King frontage to an existing signalized crossing at the intersection of Mineral King and Main Street.
C. A Class I trail could then continue along the south side of Mill Creek through Main Street Park to Ranch Street possibly making use of the existing bridge crossing at Mill Creek Drive.
D. The potential exists for a proposed bike and pedestrian bridge over Mill Creek at Ranch Road, which could also incorporate a mid-block crossing with an interpretive exhibit connecting to the proposed Class II bike lane to the north and providing bike and pedestrian access to the County Civic Center to the south.
E. Potential exists for the Class I trail to continue past Ranch Street on the south side of Mill Creek eventually crossing at Main Street or an alternate Class II bike lane cutting through the County Civic Center parking lot.
F. Potential for a signalized crossing at Main Street and Ranch.

View of existing West Main Park signage and picnic area.

Summary of Constraints:

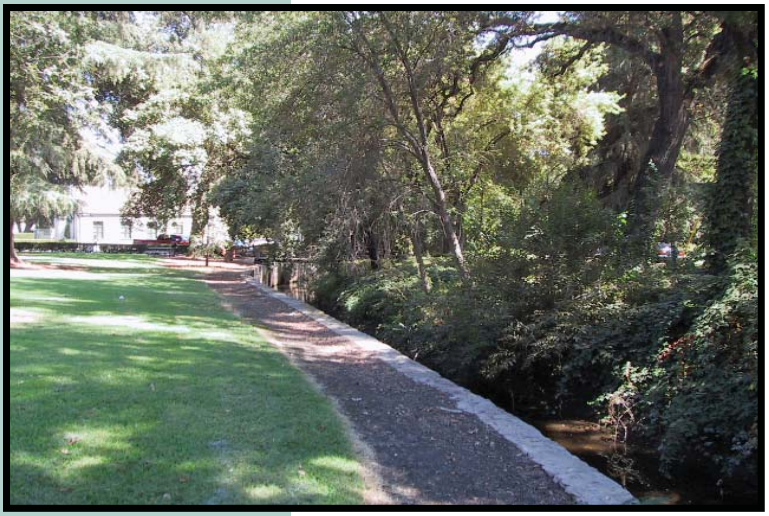
A. Probable biological assessment of the riparian area for proposed trail alignment through the future park.
B. Land acquisition constraining direct route of trail on south side of Mill Creek mid way between Demaree Street and Main Street.
C. Potentially hazardous Class II bike lane/ Class 1 trail along the Burrel extension through the County Civic Center due to traffic.

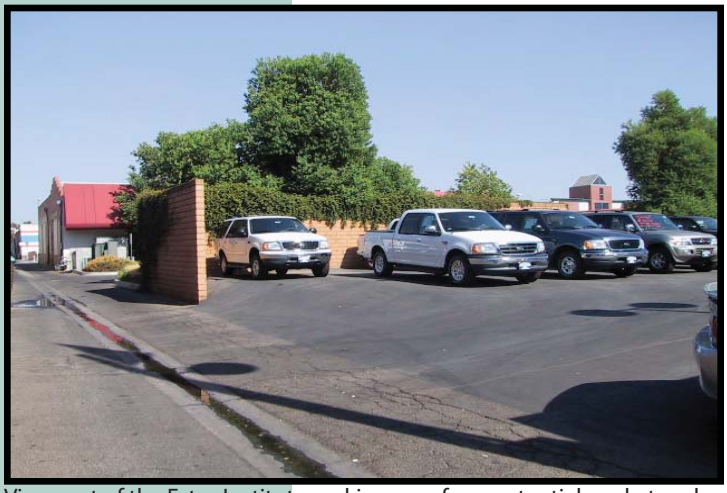
Mill Creek Downtown District



Mill Creek Downtown District.


View northeast along Mill Creek passing behind Redwood High School.


View east along the existing foot-path at Mayor's Park.


View east of the Estes Institute parking area for a potential pocket park.

Segment 5

Summary of Opportunities

A. From Segment 4, Crossing Woodland Street, a potential Class II bike lane along Burrel Avenue to Mooney Blvd. and could continue to Dollner Street turning north potentially connecting to the proposed Class I trail running behind Sierra Vista Campus and through Redwood High School to Conyer Street. Improvements for this section of Class I trail shall be provided by the School District in the near future.
B. Potential staging/ rest area Class I connection to the preferred Class II trail alignment running north on Conyer.
C. Potential urban park opportunity exist north of Center Street between Locust and Court where one side of the culvert channel could be developed into a Civic water feature serving as the main attraction for an urban park.
D. Parking area at the north-east corner of Main and Garden Streets offers another potential urban park opportunity creating a green link creek side experience in the heart of downtown. A pocket park in this area would serve as an entrance node for the beginning of a series of green space linkages for the future eastward re-development of the downtown district core.
E. Potential extension of Class II bike lane connecting the existing downtown Class II bike lane loop to the proposed Santa Fe Class II bike lane leading north to the preferred Class I trail connection and alignment running east along Oak Street.

Summary of Constraints:

A. Mill Creek is a culvert channel limiting the opportunities for creekside development from Acequia Street running northeast under Main Street to Center then running east directly under Center Street.
B. Land acquisition of parking lot and business fronting onto Center Street to the north.
C. Releasing of potential pollutants into the creek while opening up or reconstructing the channel.
D. Many Environmental requirements including bypass operations.

E. Year round monitoring and control of adequate water levels to function with the normal peak runoff season including the recycling of water through a designated portion of the creek creating a desirable environment for public use.

Segment 6

Summary of Opportunities

A. Potential Class I multi-use trail running parallel to and on the south side of Union Pacific Railroad tracks between Santa Fe and Burke streets.
B. Creek adjacent open space park opportunity between existing light commercial buildings to the south and the railroad tracks to the north. The linear open space would also allow for a separation of pedestrian and bike paths.
C. Potential redevelopment opportunity converting old warehouse buildings to restaurants and retail shops which could be re-oriented to open out onto Mill Creek offering creek side dining.
D. Potential non-signalized mid-street crossing at Burke Street offering a chance for pedestrians to cross over to the north side of the tracks. The Class II bike path could remain on the south side of the tracks as it turns south to Ben Maddox Way.

View south of Mill Creek at Kaweah Delta Hospital.

View west at Checker's parking area fenced off from Mill Creek.

View west to large open space between commercial buildings and railroad tracks by proposed Railroad Park West.

View east across Santa Fe Street at potential Class I trail alignment.

E. The existing train trestle over Mill Creek has character and could possibly be enhanced or landscaped creating an icon marking the entrance to a potential passive linear open green space north of the Union Pacific railroad tracks. This open space could connect to the existing riparian corridor as Mill Creek branches north.

View northwest of existing railroad trestle over Mill Creek.

F. There are two main areas offering different activities: The riparian corridor could offer a nature interpretive walk along Mill Creek, and the linear park space adjacent to the tracks would cater to passive activities.

G. The Class I bike path could transition to a Class II bike lane near the existing signal at Center Street. This transitional area could also function as a staging area or drop off for the park.

View east at potential Class I trail alignment running parallel to the railroad tracks.

H The large flat area of land between the branches of Mill Creek are currently being targeted by the City for a future development including a storm basin that could possibly function as a year round water feature, relocation of City offices, or commercial or office development.

I. The Class II bike lane could then run along Center east to Ben Maddox Way turning south down to the Main Street signalized crossing at Ben Maddox Way.

J. Once across Ben Maddox Way the Class II lane could run north to the Mill Creek culvert where the lane could connect to a Class I trail running east-west along the north side of Mill Creek in or around the oak grove riparian conservation area.

K. The oak grove riparian area north of Carl's Jr. could potentially be upgraded to small interpretive park that could possibly incorporate a staging area, educational signage for the oak grove conservation program, a children's play area and outdoor dining areas.

L. The Class I trail preferred alignment would be on the north side of Mill Creek to the future Coopman Park site where the could angle or meander north through the park with potential rest stop or staging areas.

M. Once across Lover's Lane the trail could then continue as a Class II bike lane running along Lover's Lane could connect to a Class I trail bordering the south side of Mill Creek Garden which also borders the north side of Mill Creek. A rest stop or interpretive exhibit could be added to the park off the trail.

N. A signalized crossing at Lover's Lane will be installed with the completion of Mill Creek Parkway.

O. Jennings Ditch is an abandoned slough which runs north to south from Murray Street to Center Street. There are Valley Oaks existing on the banks, and it is an excellent opportunity for linking future development north to Murray.

View north as tracks branch bordering future storm basin open space area (See Chapter 11).

View west of bridge crossing Mill Creek under the Oak preserve canopy.

View east of Mill Creek riparian area running behind the light commercial buildings.

Summary of Constraints:

A. Rezoning and adjusting lots for proposed business uses backing onto the creek.

B. Pedestrian and railroad safety issues at the trestle crossing and also at the existing Center St. signal.

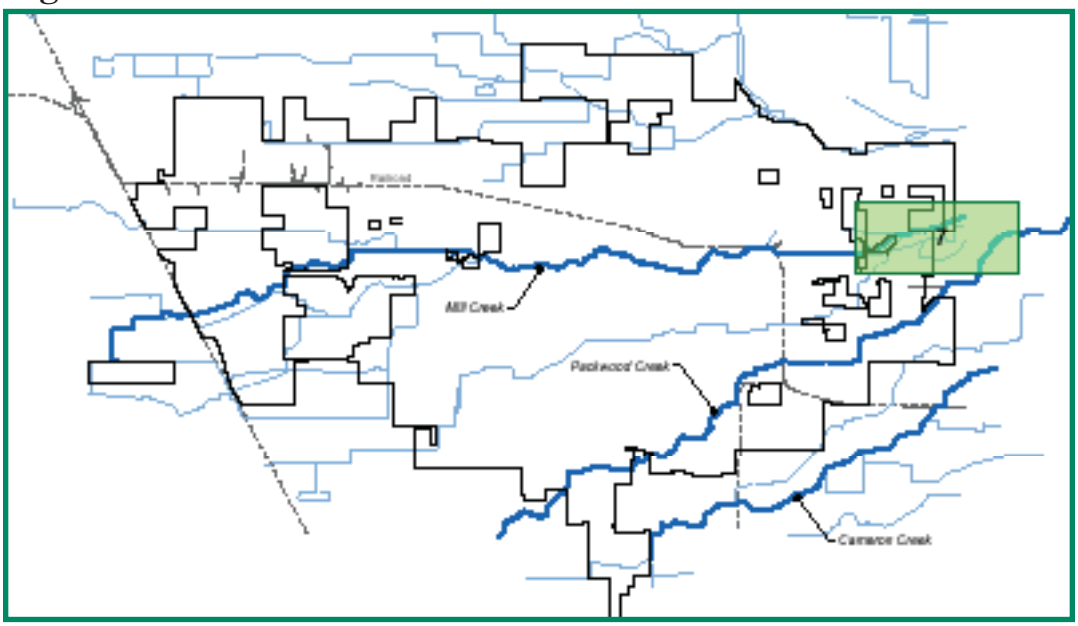
C. Inconvenient detour south to the Main St./ Ben Maddox signal. Proposing a mid street crossing creates a double stop condition on Ben Maddox Way.

D. Rezoning and adjusting lots for proposed business uses backing onto the creek.

E. Protected oak grove riparian conservation area may require special permitting or would only allow limited development.
F. Potential Class I trail alignment conflict at the existing riparian setback along Mill Creek under the oaks.

Segment 7

SEGMENT 7 - Mill Creek - Eastern Reach



Summary of Opportunities

A. Potential Class I multi-use trail could run on the north side of Mill Creek to Manzanita Street.
B. An optional Class II bike lane could be added along the north side of Mill Creek Parkway also connecting to Manzanita Street.

View west along Mill Creek near Manzanita Street.

C. Potential exists for transitional connection at Manzanita St. and Mill Creek Parkway otherwise the Class I trail remains on the north side adjacent to the future proposed conservation area, which could incorporate interpretive walks and exhibits.
D. At the convergence of Mill Creek and Evans Ditch and McAuliff road future alignment presents an excellent opportunity for a creative bike & pedestrian bridge that could also link directly to or be incorporated into a trailside rest area acting as a hub or entrance to the targeted creek side subdivision.
E. The preferred Class I trail could then run on the south side of Mill Creek to the Power Easement where the Class I trail would branch north and south running under the power lines. A mid-block crossing connecting to a bike & pedestrian bridge could be implemented allow users to cross Mill Creek to the north.
F. The mid-street crossing could also facilitate the connection to the Class II bike lane running on the south side of Mill Creek along the future community park sites to Road 156.
G. A 100-acre community park with a recharge basin is planned to the east of the power line easement, and it could become a wonderful terminus to the trail.

View due west along Mill Creek at the power line easement near the community park site.

Summary of Constraints:

A. Land acquisition for Mill Creek Corridor surrounded by subdivisions.
B. Potential traffic circulation conflicts where Mill Creek and Evans Ditch, Goshen Avenue and McAuliff road converge.
C. Permitting for power easement shared access.

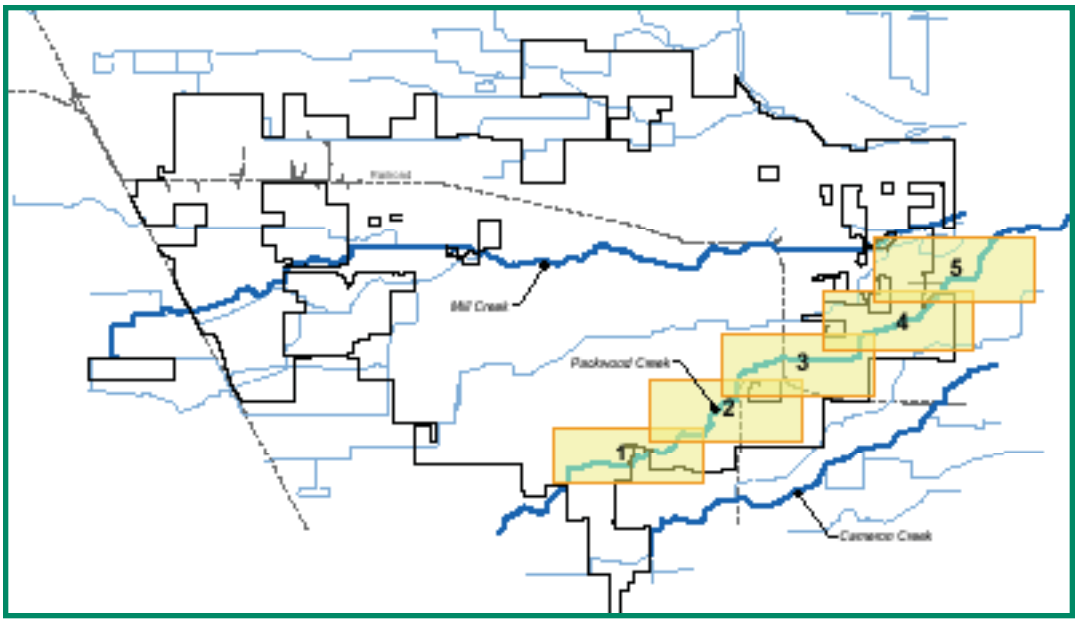
Packwood Creek Corridor Study

Characterization:

The limits of the Packwood Creek Corridor for the purposes of this study are from Avenue 272 to the south, and the Future Community Park Site/ Road 156 to the north. Packwood creek encounters a large variety of both private and commercial properties as it meanders through the community running southwest.

Packwood Creek

Packwood Creek Reach Sections



Opportunities and Constraints Identification

The following lists briefly summarize opportunities and constraints identified through field visits and data review. The summary comments follow the reference map sequencing from West to East. For more detailed view of the sections, see the Packwood Creek Preferred Trail Alignment Design Maps in Section 6.0.

Segment 1

Summary of Opportunities:

A. A Class II bike lane running along County Center Drive can be extended to the south to eventually connect at the end of County Center at Packwood Creek. The creek bed with all the existing tree cover is an excellent location for a trailhead or kiosk, staging area or interpretive exhibit. This area is also ideal in that it is adjacent to a potential park/ elementary school site.

View east of Packwood Creek riparian area running behind the light commercial buildings.

B. The preferred alignment of the proposed Class I multi-use trail runs along the south bank of Packwood Creek. A pedestrian and bike bridge will need to be implemented to get trail users to the south bank. This area currently is the suburban fringe with the adjacent South Packwood Commercial Development to the south.

View due east along Packwood creek corridor west of the future South Packwood Commercial development. Note how existing home are backing up against the creek

C. The optimum alignment would preferably still be the south side running along the commercial development perimeter road where opportunity exists for creek side rest or staging areas prior to or near Mooney Blvd.

D. Mooney Blvd. and Cameron St. will become a signalized crossing in the future, and will eventually intersect with County Center. There is a potential for Class II bike lanes running into the private development. The Eastern portion of the commercial site could facilitate the future Cameron Avenue road alignment. A Class I trail could branch off parallel to the future Cameron Avenue eventually connecting to a Class II bike lane at Caldwell Avenue and Court Street.

View east to Packwood creek culvert crossing at Mooney Blvd.. at the future signalized Cameron Ave. intersection

E. Eventually the preferred alignment for the Class I trail along could turn due north away from the creek and connect to Walnut signal where it would run east-west along Walnut to Court Street and Santa Fe Street. An optional alignment could also continue along Packwood to Walnut and then to Court Street and Santa Fe.

View north at Packwood Creek near rear Costco parking lot.

View south along abandoned Union Pacific rail corridor, the graded area shows where the Class I trail is proposed.

View north along existing Whitendale Class II bike lane.

F. To the north exists a potential ponding or pocket park opportunity on the other side of the creek from the Costco building that could also incorporate a rest area. Packwood Creek could feed the ponding area with the Class I trail running at the top of bank between the creek and the ponding area.

G. Signalized intersection at Caldwell and Stonebrook Street could be an opportunity for a connection to the neighborhood park.

Summary of Constraints:

A. A physical constraint exists getting trail users across to the south side of Packwood Creek from County Center.

B. Due to heavy traffic on Mooney Blvd. a signal crossing would be a must to accommodate both automobile traffic entering the commercial complex and allowing trail users to cross safely. A future traffic signal is planned at Caldwell and Cameron.

C. Packwood Creek north of Caldwell Avenue is land locked by residential property backing onto the creek setback.

Segment 2

Summary of Opportunities:

A. An excellent opportunity for a rail trail exists along the west side of Santa Fe Street east of the old tracks. Rails have been abandoned and removed from the southerly portion of Sante Fe prior to Caldwell Avenue.

B. The existing Class II bike lane running along Whitendale Avenue can be extended over to Court Street. The Class II bike heading north would return trail users to the Packwood Class I trail. The Class II heading south encounters Blaine Park. A potential bike parking or rest area could be incorporated into the park. Continuing further south the existing Class II bike lane could be extended to connect to a potential Class I trail running along Walnut to a Class I trail at Santa Fe Street.

Summary of Constraints:

A. A signalized crossing would be necessary to allow trail users to cross Court St. at Whitendale, and continue north or south along Court Street.

Segment 3

Summary of Opportunities:

A. Approximately mid-way between Whitendale and Walnut Avenues the old Sante Fe railroad crosses Packwood Creek. An excellent opportunity presents itself at the old trestle crossing which could be converted into a staging or rest area given a creative configuration it could also incorporate educational or interpretive exhibits. There also exists enough open space for a small pocket park that might have a children's play area.

View due south from old Santa Fe trestle crossing Packwood Creek.

B. Packwood Creek runs in a culvert under Santa Fe Street day lighting again on east side where it meanders along the south side of the mobile home park making it very conducive for a Class I trail alignment on the south side of Packwood Creek all the way to railroad tracks at Walnut Avenue. A signalized crossing would be necessary to move trial users across Santa Fe Street and again at Walnut Avenue.

View west to Walnut Avenue at the culvert crossing, location depicts possible mid-block crossing.

C. The Class I trail north of Walnut Avenue could also continue north taking users to the downtown district.

D. The existing signal crossing at Ben Maddox could be used by trail users as the preferred Class I trail alignment could be on the south creek bank just north running parallel to Walnut Avenue.

E. A potential two-way stop or non-signalized crossing at Pinkham Street could be implemented to continue the Class I trail along Walnut Avenue to the gated community development bordered to the east by a linear neighborhood park.

View east along corridor buffer planting at Walnut Avenue.

F. The railroad tracks north of K Road have been abandoned, and could serve as a Class I connection.

G. Potentially the Class I trail alignment could be routed around the park heading north along the east side of Packwood Creek near the suburban fringe. An upgraded crossing might be necessary to safely get trail users across the development entry.

View northeast along Packwood Creek border at Neighborhood Park.

Summary of Constraints:

A. Traffic speed along Santa Fe could be potentially dangerous with a non-signalized mid-block crossing, therefore a signalized crossing would be required.

B. Trail users must perform two-way crossing at the intersection of the railroad and Walnut Avenues. Once across Walnut Avenue and again across the tracks, which could be potentially dangerous without the proper signalized crossing.

C. The narrow configuration of the neighborhood park makes it less conducive to accommodate a Class I trail and would require a bridge crossing on north end.

Segment 4

Summary of Opportunities:

A. Potential and preferred Class I trail alignment could run in the creek setback turning east to Lover's Lane.

B. Opportunity to implement a mid-block crossing at the Packwood Creek crossing across Lover's Lane. Trail users would have opportunity to travel north along a potential Class I or Class II optional trail to Tulare Avenue where the trail would turn east running between McAuliff Ranch to north and a future park and pond to the south.

C. Once crossing Lover's Lane the Class I trail could remain aligned along the south side of Packwood Creek through the corner of the future Diamond Creek Estates.

View northeast along Packwood Creek near future Diamond Creek Estates.

D. Given the potential park site and pond location, the Class I trail could encounter one or more bridge crossings and staging or rest areas allowing access to the park facilities. In addition there exists an excellent opportunity for a vista or overlook structure near a large oak where Packwood Creek meets McAuliff Street.

View southeast across McAuliff Street at Tulare, looking toward potential rest stop area under large oak and Creekside Neighborhood Park site.

View of development east of McAuliff where a single-loaded street runs along the south side with homes looking on.

View northeast along Packwood Creek of Rio Vista Avenue.

E. Future development could take advantage of the creek and park opportunity to provide housing fronting onto one or both sides of Packwood Creek.
F. A non-signalized mid-block crossing at the intersection of Tulare and McAuliff Avenues could then allow trail users to continue along Tulare across Packwood Creek and continue east to a Class I trail running north-south along the power line easement.
G. A potential trailside staging area could be implemented as part of the Class II/ Class I connection where Packwood runs under Tulare Avenue heading north on the south side of the creek along Rio Vista Avenue.

Summary of Constraints:

A. Traffic speed along Lovers Lane could be potentially dangerous with a non-signalized mid-block crossing, therefore a signalized crossing might be required.
B. Two signal crossings on Lovers Lane could potentially be cost prohibitive.
C. Land Acquisition of future Tulare Street alignment.

Segment 5

Summary of Opportunities:

A. Potential and preferred Class I trail alignment could run in the creek setback along Rio Vista Avenue turning east along College Avenue where then the trail would branch away from Packwood Creek as Packwood turns north the Class I trail could continue due east and connect with the Class I trail alignment.
B. A potential future bike and pedestrian bridge could allow trail users to cross Hwy. 198 and continue north along the preferred alignment in the power line easement to Cutler Park or user would have the option to branch off on a Class I trail taking them in and through the future community park site
C. From College Avenue users would also have the option to go south along the power line easement.
D. The Packwood corridor will eventually run through the future 100-acre community park site, and provide a connection to the Mill Creek corridor.

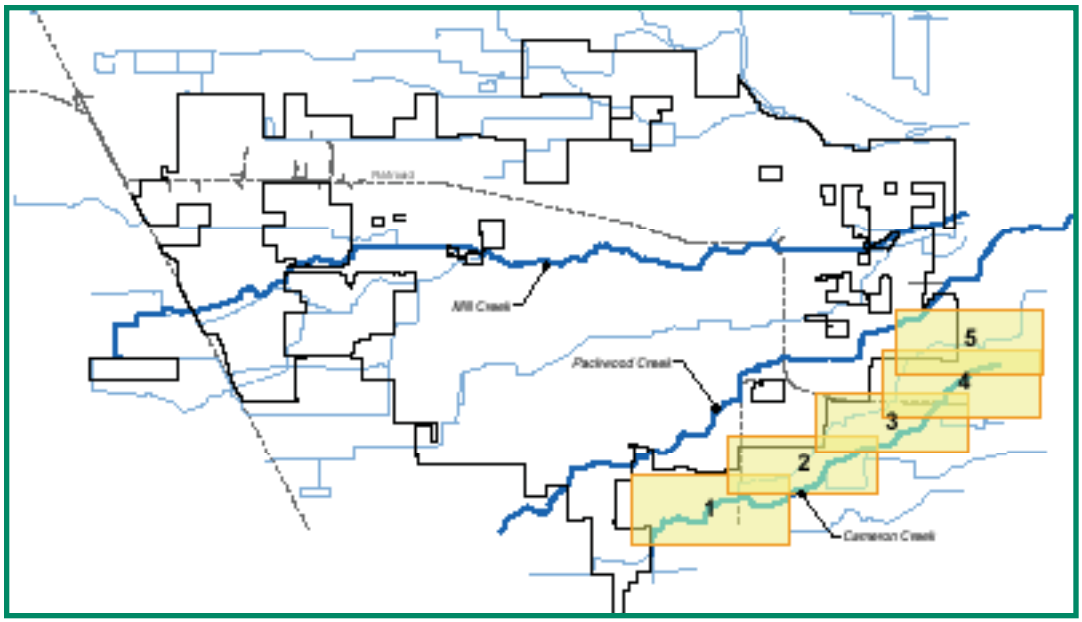
Summary of Constraints:

A. Private property land acquisition for Class I trail extension from the end of College Avenue to the power line easement.
B. Caltrans future plans and approval for a free span bridge crossing at Hwy. 198
C. Crossing over Road 148 may require the installation of a free-span bridge.

Cameron Creek Corridor Study

Characterization:
The limits of the Cameron Creek Corridor for the purposes of this study are from Mooney Grove Park to the south and Road 156 to the north. Cameron Creek encounters primarily rural agricultural land as it feeds several Tulare Irrigation District ditches on its journey southwest through the fringes of the community.

Cameron Creek



Cameron Creek Reach Sections

Opportunities and Constraints Identification

The following lists briefly summarize opportunities and constraints identified through field visits and data review. The summary comments follow the reference map sequencing from West to East. For more detailed view of the sections, see the Cameron Creek Preferred Trail Alignment Design Maps in Section 6.0.

View east along Avenue 272.

Segment 1

View northeast along Cameron Creek meandering through agricultural parcels.

A. Potential opportunity to implement a Class II bike lane along the south side of Avenue 272 just north of Mooney Grove Park.
B. A mid-street crossing following the creek under Avenue 272 would allow users to cross to the north side, the preferred alignment for most of the Cameron Creek waterway trail. Potential also exists for a Class I/ Class II trail connection and a staging or rest area.

View southeast to border private property along Cameron Creek.

C. The potential Class I trail would then make its way through agriculture land parcels connecting to a potential Class I trail alignment along Road 128 or Santa Fe Street taking trail users north to Caldwell Avenue.
D. A signal crossing would allow users to cross Road 128 and continue on the north side where further up the creek exists an excellent oasis staging area and viewing opportunity at Cameron's Dairy / Residence.

Segment 2

A. Potential opportunity to connect the Class I trail running north-south on the west side of Road 128/ Santa Fe Street north to a Class II bike lane along the north side of Caldwell.

View southwest to existing signalized two-way crossing at Caldwell and Lover's Lane.

B. A signal crossing would be preferable to due traffic levels on Caldwell for a short distance.

C. Running northwest through a variety of agricultural property, the preferred Class I trail alignment would remain on the north side or north bank of Cameron Creek eventually reaching the existing signal at Caldwell Avenue and Lover's Lane, a two-way crossing for trail users.

View northeast to existing Culvert Crossing, potential rest area and viewing.

Segment 3

A. Once across both major streets the Cameron waterway trail could continue on the north side where potential one or more rest areas could be implemented giving trail users a shady break prior to reaching railroad corridor.

Segment 4

A. Good use could be made of an existing culvert crossing at the railroad allowing users to continue on the north side.

View northeast to Wooded area bordering private property parcels.

B. Potential exists for alternate trail alignments along Cameron Creek prior to Walnut Avenue. One trail alignment could branch north to the power line easement trail alignment, the other could follow Cameron Creek on the north side. Signage or a trail head could mark the two alternate routes.

C. As Cameron Creek approaches the railroad corridor there exists a potential pocket park site to the northwest allowing trail users access from trailside. A shady rest and staging area could be part of the park facilities.

View south toward power line easement west of Road 148. Potential Class I trail to Cutler Park and St. John's River Parkway.

Segment 5

A. A potential signal crossing at Walnut Avenue at the power easement would allow trail users to continue north on a Class I trail. This area also would be conducive for a rest or staging area.

B. An optional signal crossing could occur at the Cameron Creek culvert crossing under Walnut Avenue allowing trail users to continue northeast along the north side of the creek to future developments.

Summary of Constraints:

A. Private property land acquisition for Class I trail through agriculture designated land use.
B. Public interaction with private property.
C. Signal crossing or crossings may be cost prohibitive.

B. REDEVELOPMENT OPPORTUNITIES

Introduction

This portion of the report is intended to identify a number of key "opportunity" sites that may provide an opportunity to create a series of inner-connected urban green spaces in conjunction with revitalization and redevelopment efforts by both the City and private landowners. The opportunity sites described in this section are intended only as ideas within the larger context of the Waterways Trails Master Plan and should not be construed as definitive recommendations. It is envisioned that the creation of urban green spaces in the downtown would be linked to a more in depth analysis of other revitalization and urban design issues. It is, however, hoped that these ideas will provide a catalyst for discussion, exploration and ultimately implementation of a series of urban green spaces.

As described in the project goals and conceptual linkages plan in Section 4 of this report, downtown Visalia is a key destination for residents and visitors alike. The downtown, with its wealth of historic architecture, tree lined pedestrian-oriented shopping streets, collection of restaurants, convention centers, hotels, civic uses and entertainment activities is the cornerstone of this thriving and diverse community. As Mill Creek traverses through the center of this downtown district, the character and opportunities as a continuous pedestrian and/or bike linkage change drastically. As described in Section 4 under "destination downtown", Mill Creek both east and west of the downtown are important spokes of the wheel that form the radiating connections between downtown and the outlying neighborhoods.

The downtown area defined by Santa Fe Street on the east, Center Street on the north, Conyer Street on the west, and Mineral King on the south, in aggregate, forms the destination of many of these pedestrian and bicycle facilities. Within this area, Mill Creek has been covered over by buildings, streets and other urban improvements. A few locations, such as Checkers, Kaweah Delta Health Care District and locations west of Kaweah Park towards Redwood High School, Mill Creek is exposed and provides beautiful riparian environment as refuge to the surrounding urban area.

Pedestrian Orientation

By and large, access provided by Mill Creek to the downtown area will deliver residents, visitors and commuters on foot or by bicycle to a largely pedestrian-oriented downtown core. While Class II bike lanes exist on Center Street and Main forming a one-way bike lane loop, the predominant circulation through the downtown is via City sidewalks and pedestrian access ways. Thus, the idea of creating a series of linked urban green spaces is focused on creating small destinations within the downtown oriented toward pedestrians.

Approaching the downtown area on Mill Creek from the east, the waterway trail would end as a bikeway at the intersection of Oak and Santa Fe. It would end as a pedestrian way at the intersection of Main and Santa Fe, and a pedestrian-only option is considered in this area.

Approaching the downtown on Mill Creek from the west, the waterway trail would end as a pedestrian and bikeway at the intersection of Mill Creek and Conyer on the east side of Redwood High School's campus. Between Conyer and the Kaweah Delta Health Care Campus, it may be possible to create a pedestrian way that parallels Mill Creek. However, it should be noted that the City and Kaweah Delta Health Care District are involved in discussions concerning the potential expansion of the hospital facility that would have a dramatic affect on this entire area.

Mill Run

From Tipton to Floral Streets Mill Creek runs under the heart of the Downtown. While romantics may long for the days when it as a natural waterway it is not practical to consider opening the creek. The Waterway and Trail Task Force has developed an alternative to "daylighting" the creek.

There is an opportunity to develop an alternative path and water feature through a relatively undeveloped section of the downtown. Beginning at Tipton Street, where Mill Creek goes underground, there is the opportunity to acquire and construct a faux stream bed meandering through the alley way that parallels Center Street. Development along this corridor currently includes car dealer lots, City-owned parking lots, an office building, and the City transit center.

The Task Force envisions a small tree lined stream bed filled year round with recirculation water meandering through a green way of grass and plants. We believe that this feature will encourage businesses to redevelop along Center and Oak Streets opening to green way as well as the street. This is a natural connection between Downtown and the new City Center now being planned on Burke Street encouraging people to walk and ride around downtown.

Additionally, the Task Force envisions that Mill Creek be relocated in the area between Tipton Street and Burke Streets be relocated north. Currently the creek is located within 10 feet of the existing building along Center Street. This area is identified in the Waterway Master Plan as Railroad Park West.

Mill Creek and Kaweah Delta Health Care District Facilities

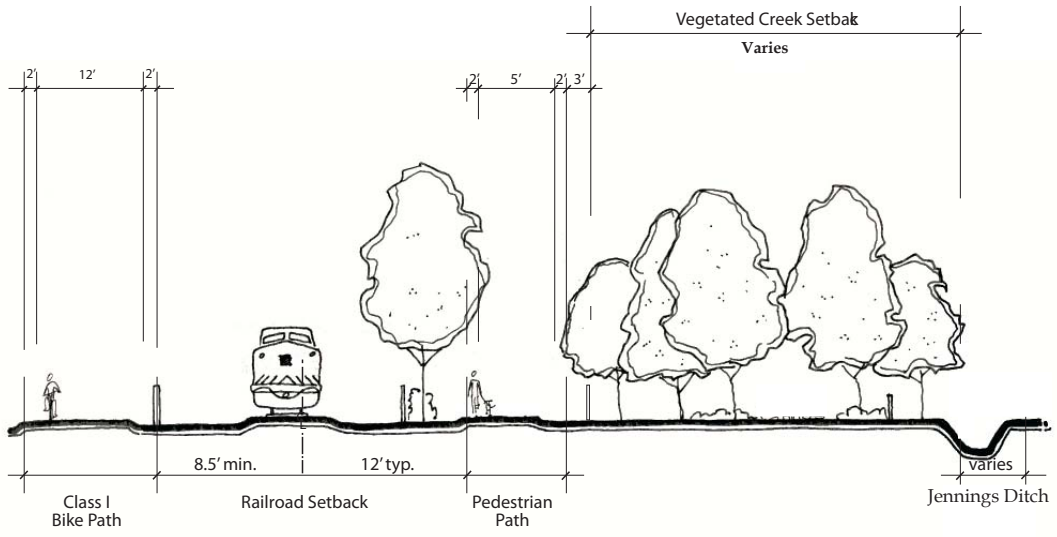
The City of Visalia and Kaweah Delta are engaged in a comprehensive discussion concerning the future of the downtown hospital facility and options to enable an expansion of health care facilities. Within this context, it may be necessary to enclose or realign portions of Mill Creek so as to adequately address service, access and location of various hospital facilities. It should be the goal of the City and the Hospital to capitalize on this unique resource and provide areas within the hospital campus that Mill Creek can play an important role in the creation of unique and desirable pedestrian and green space in ways similar to what the hospital has been able to achieve on their current campus.

Key Opportunity Sites

The following describes a number of opportunities in the downtown to capitalize on the location of Mill Creek pursuant to the discussion above:

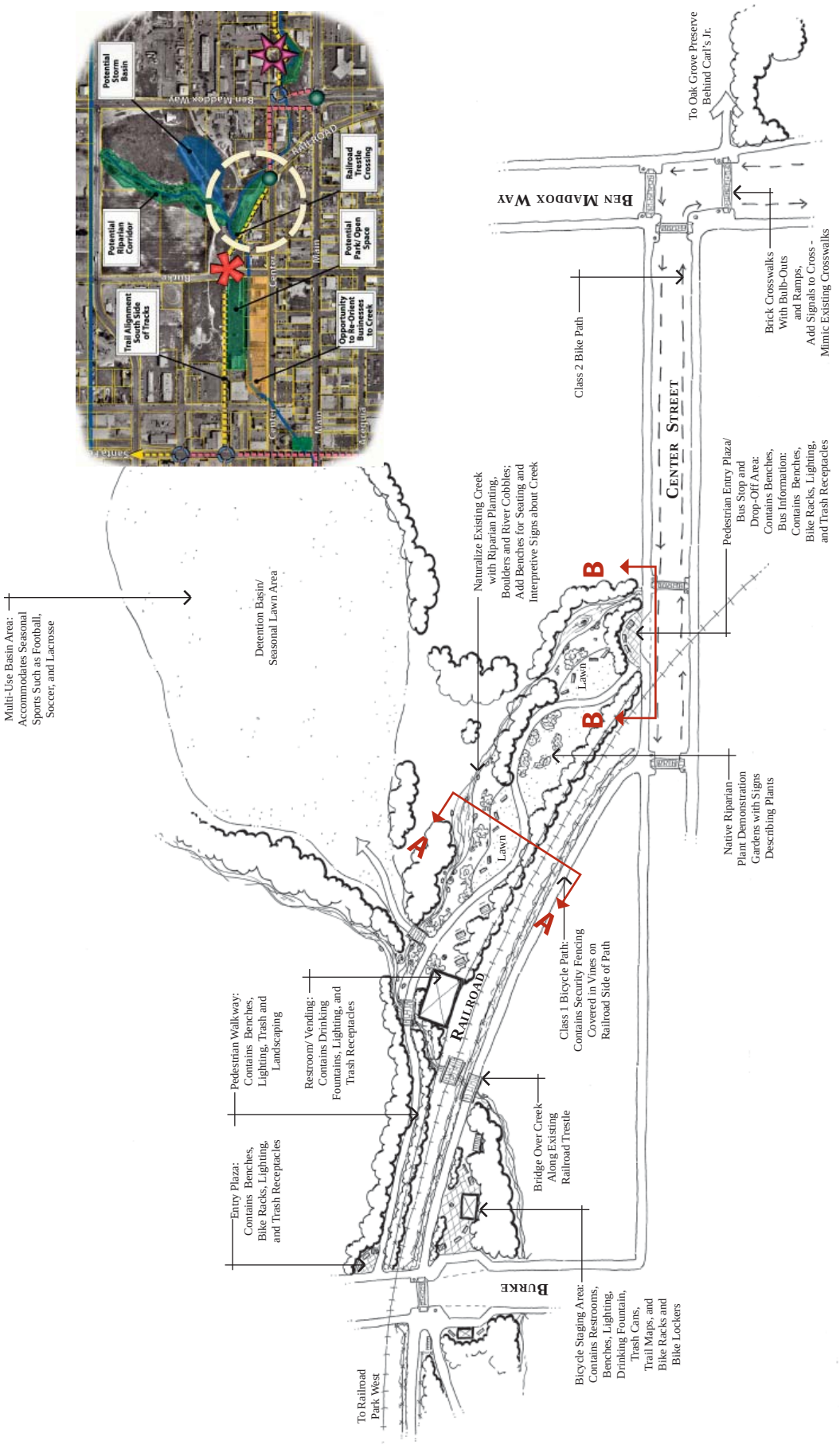
1. Railroad Park East

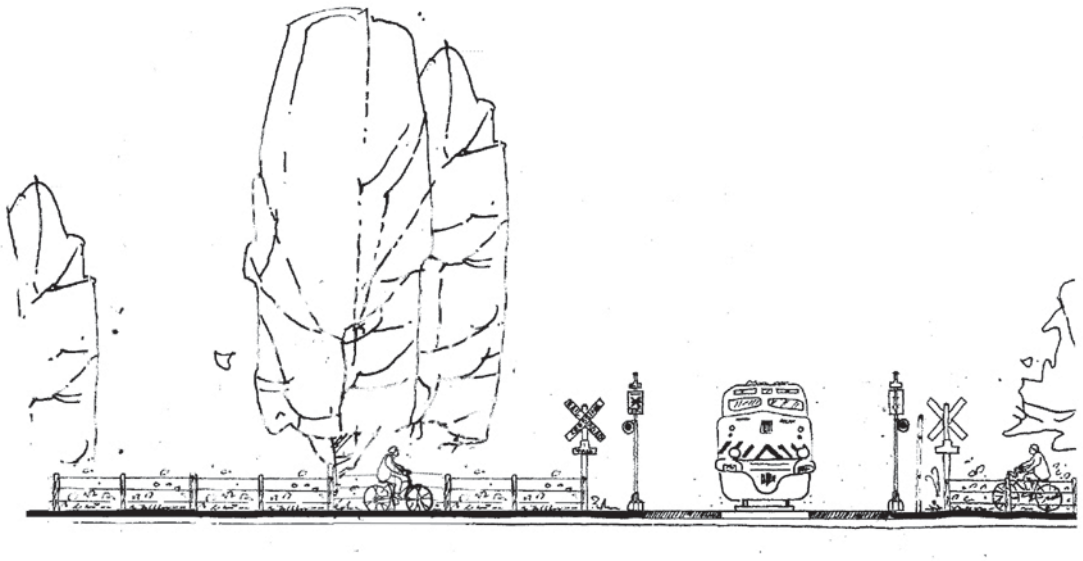
This opportunity site is located between Burke and Ben Maddox Way north of the railroad tracks and is adjacent to the potential flood control basin park site to the north. This area has the potential to play a role in the redevelopment of existing properties along Center Street and is an opportunity to restore a portion of Mill Creek. Jennings Ditch is an abandoned tributary running north from Mill Creek, and it is an opportunity for a trail north to Murray Street.



Section A-A
Section of Railroad Park East

Plan View Sketch of Railroad Park East



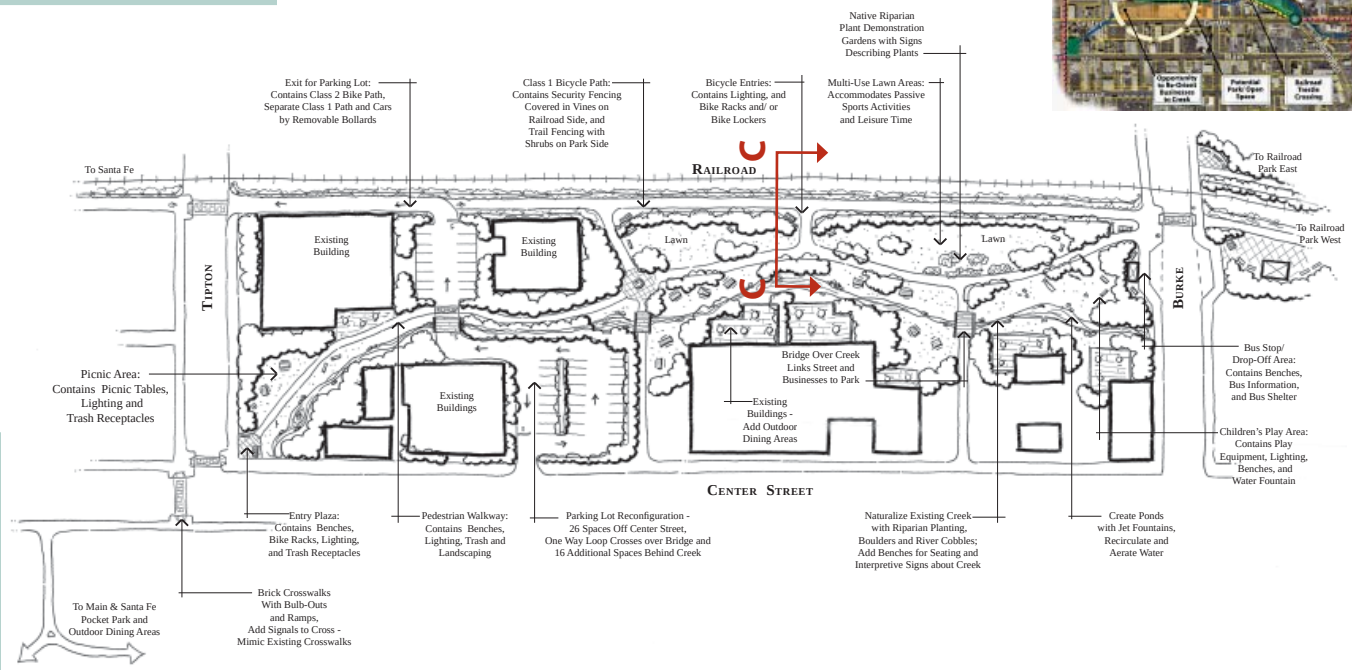


Section B-B
Elevation of Railroad Park East
Signal Crossing at Center Street

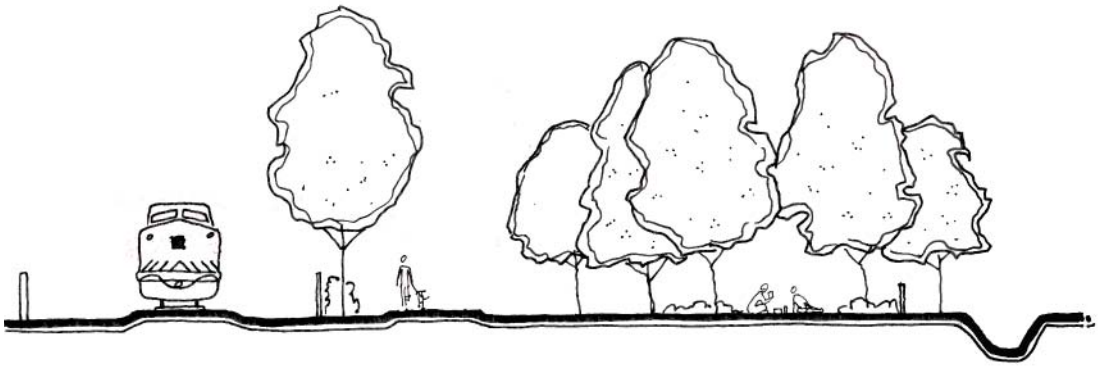
2. Railroad Park West

This opportunity site lies between Tipton and Burke between Center Street and the railroad tracks. In this area, an opportunity to create a park along Mill Creek between the commercial buildings fronting Center Street and the railroad tracks. The plan below shows how buildings can be re-oriented along Center Street towards Mill Creek at the rear, creating a series of interconnected outdoor dining patio areas and pedestrian circulation way. The waterway trail (Class I) would parallel the railroad with a separate pedestrian walk through the creek park. This linear park would enable various pedestrian crossings at Mill Creek, replanting and riparian restoration of this segment of the creek, and will connect this area to the waterway trail running adjacent to the railroad tracks in this area. There is a possibility that the creek could be relocated to the north side of the railroad tracks, and thus provide additional space for the park activities and better integrate it with new development. The creek realignment would also allow for more flexibility in developing the setback, and there could be a 50 foot setback on both sides of the creek if it was on the north side of the tracks. Linked with the Railroad Park West opportunity site, a two-block area could be transformed and linked to improvements at the larger flood control/detention basin. Refer to concept diagram for more features and descriptions.

Railroad Park East and West can both provide greenbelts which could enhance the redevelopment of Center Street, and the development of the vacant properties to the north of the railroad. Both parks also offer a number of development options including, but not limited to: a storm pond and wetland area, possible relocation of City offices, and commercial and office development.



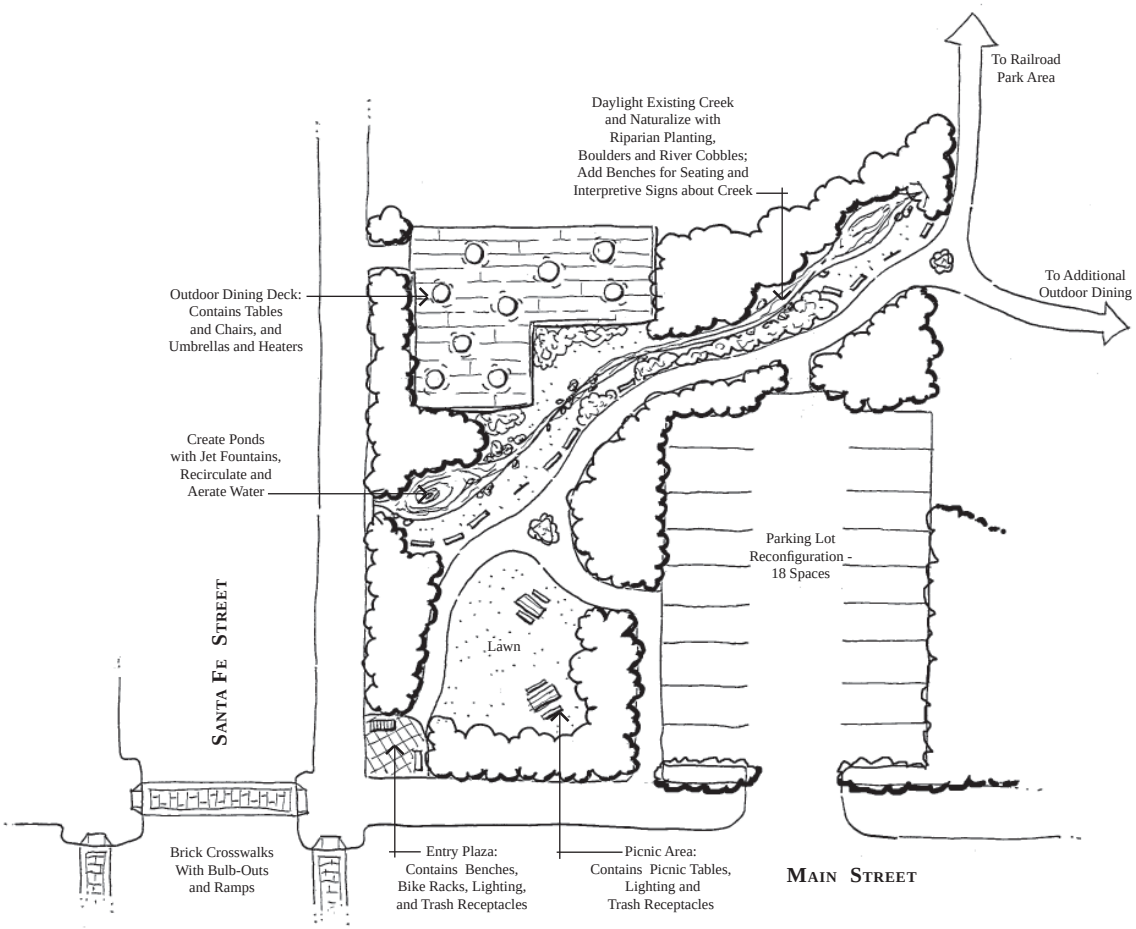
Plan View Sketch of Railroad Park West



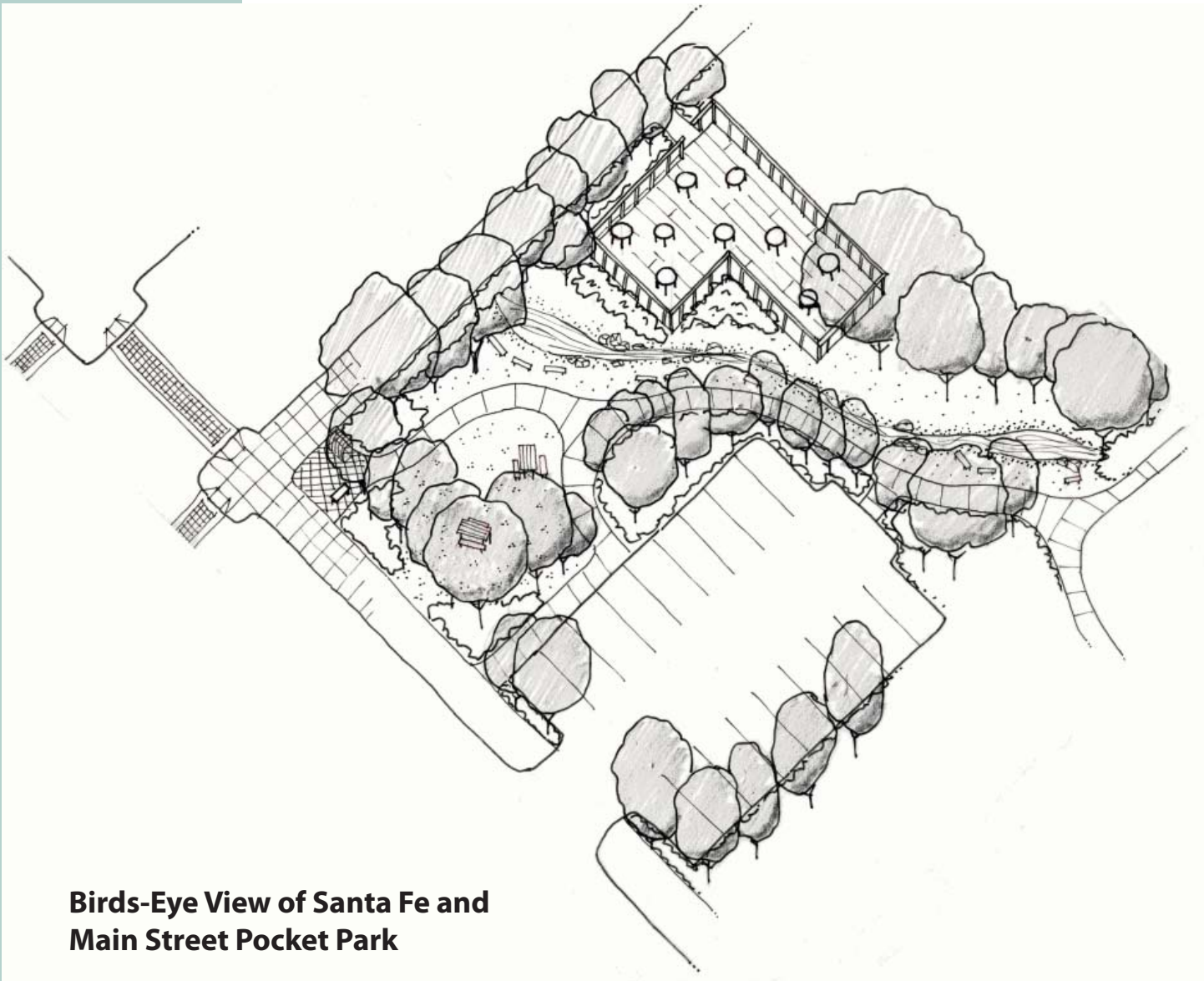
Section C-C
Section of Railroad Park West

3. Main and Santa Fe Pocket Park

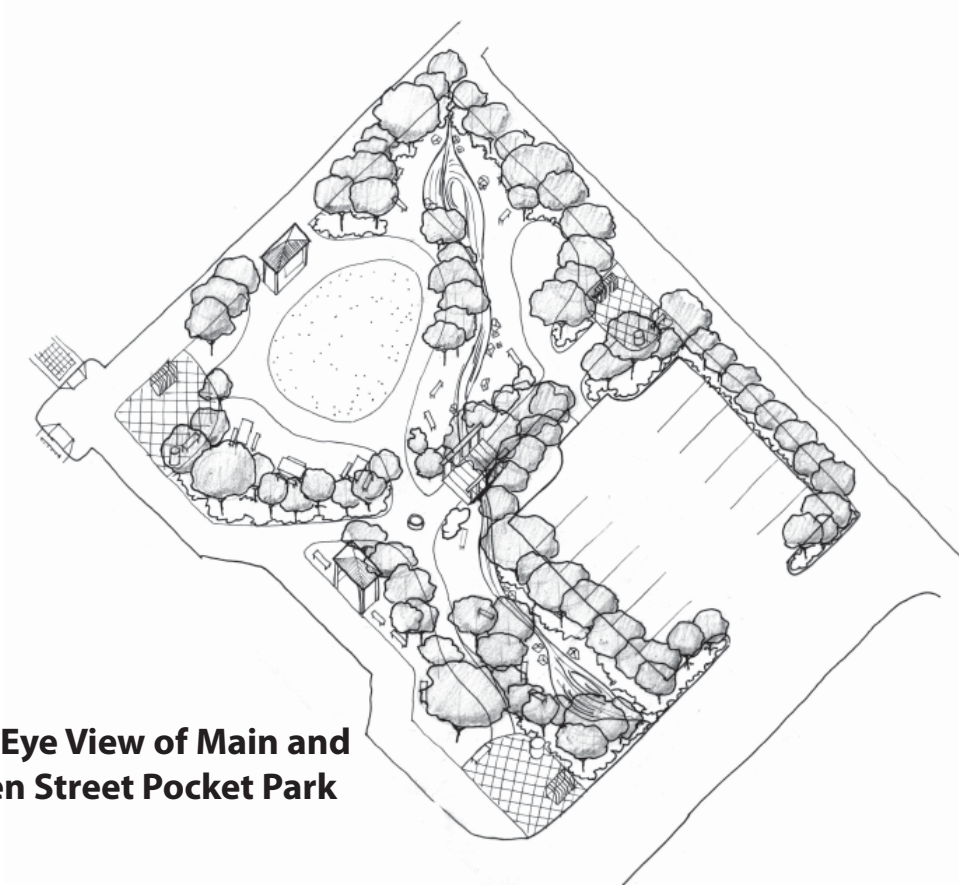
At the northeast corner of Main and Santa Fe, the open creek channel of Mill Creek ends and begins its westward flow underneath the downtown. At this location, opportunities may exist to create a small pocket park containing lawn area, picnic tables, lighting, trash cans, and a meandering pathway along Mill Creek connecting to the railroad park area. This portion of Mill Creek along with the railroad park area to the east could be restored with riparian vegetation and plantings and could be designed to maintain permanent water flow through the use of a re-circulating pump system that can be activated or deactivated depending on the seasonal flow. Adjacent commercial structures would have the opportunity to establish patios, decks and outdoor dining areas looking on to the creek way, potentially revitalizing existing industrial uses with restaurant and or other suitable retail establishments.



Plan View Sketch of Santa Fe and Main Street Pocket Park



Birds-Eye View of Santa Fe and Main Street Pocket Park



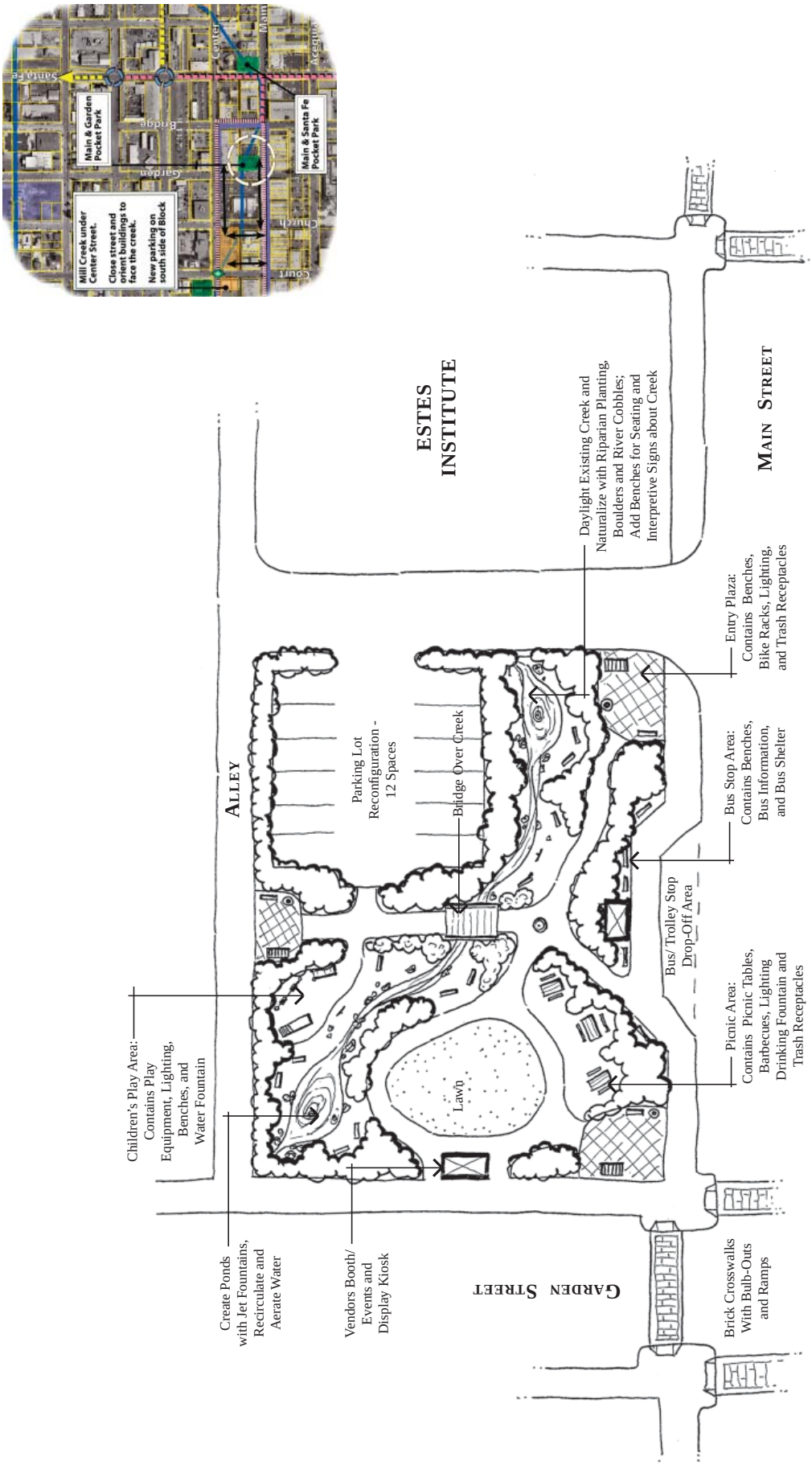
Birds-Eye View of Main and Garden Street Pocket Park

4. Main and Garden Pocket Park

On the northeast corner of Main and Garden, adjacent to the Estes Institute, an opportunity may exist to create another small pocket park in this transitional industrial area just east of the downtown core. In this location, Mill Creek again can be exposed and restored with riparian vegetation and plantings, employing a similar re-circulating water feature that may be activated or deactivated depending upon seasonal flow. Components of this pocket park may include small plaza areas at the intersection of Garden and Main, grass and tree planting areas, series of pathways and gardens, potential pedestrian bridge crossing over Mill Creek.

The previously described opportunity sites represent just a few examples of how Mill Creek can be uncovered, restored, and improved into functional and desirable small pocket parks and plaza space in downtown Visalia. Additional study of these conceptual ideas and other urban design goals will surely reveal additional possibilities to create attractive urban green spaces in the downtown.

Plan View Sketch of Main and Garden Street Pocket Park



C. WATERWAY AND TRAILS MASTER PLAN IMPLEMENTATION PLAN

RECOMMENDATION	REQUIRED ACTION	Who	When
Policy Changes (General Plan, Ordinances)			
Adopt Waterway & Trail Master Plan and Negative Declaration	Circulation of CEQA document and public hearing	Trail Coordinator	2004
Acquire and develop Railroad Park East and West, Mill Run greenway, Main St and Santa Fe pocket park, and Garden Street pocket park	1) Study each area to determine cost and feasibility. 2) Change zoning / land use designation for each site; 3) Incorporate recommendations into East Downtown Master Plan 4) Identify funding source for acquisition and development.	Park & Recreation; Planning; Redevelopment	2005-06
Encourage the development of single-loaded streets along waterways.	Amend subdivision & zoning ordinances to require single-loaded streets where feasible.	Planning	2005
Allow informal pocket park amenities and non-riparian landscaping within the waterway setback to serve adjacent development	Amend Waterway policy in COSP& R Element to allow park amenities.	Trail Coordinator	2004
Commercial / retail development should present a well-designed façade to the waterway setback. Service areas, loading docks, trash bins, and storage should be discouraged or screened from view. Access to service areas should not front directly on setback areas.	Amend development standards to incorporate recommendation	Planning	2005
Encourage “public areas” of adjacent development to front on setbacks. These may include patios, dining area, landscaping, etc to support the “linear park” theme.	Amend development standards to incorporate recommendation	Planning	2005
Where feasible require pedestrian connection to allow commuters access to adjacent commercial site from a Class I or II trail	Work with developer during site plan review process	Site Plan - Trail Coordinator	2005
Pocket parks patios, or plazas in commercial development should front onto the waterway trails supporting the “linear Park” theme through the City	Work with developer during site plan review process	Trail Coordinator & Site Plan Committee	On going
Require trash, storage areas, tank, mechanical equipment, etc to be screened from view from trail.	Ammend landscape development standards.	Trail Coordinator & Site Plan Committee	2005
Incorporate recommendations for Class One bike routes along Santa Fe Ave and Rd. 148 power line in the Bicycle Plan update	Update Bicycle Master Plan	Trail Coordinator	2004

RECOMMENDATION	REQUIRED ACTION	Who	When
Acquisition, Development & Funding			
Acquire land concurrent with adjoining development or annexation prior to changes in land use / zoning destinations	Trail Coordinator will review plans for development along waterways	Site Plan Committee & Trail Co-coordinator	On going
Acquire setbacks in advance of development	In October 2003 Council approved contracting for ROW agent to acquire setbacks	Trail Coordinator	On going
Establish the Waterway & Bicycle Committee as an advisory to the Council on matters related to these plans.	Council action	Trail Coordinator	When plan is adopted
Develop information brochure & map to promote trail activities and programs.	Identify funding.	Trail Committee	On going
Increase Park and Recreation Impact Fee to fund trail and setback development attributable to new development	Include analysis of trail development costs as a part of Maximus study	Maximus	Currently underway
Aggressively seek grants funding as they become available. Consider contracting for the services of a grant writer.	Annually identify grants and prioritize trial projects for funding.	Trail Coordinator	On going
Encourage developers to participate in the landscaping and construction of trails areas	During the site plan process, discuss the advantage of participating in the development of setback	Trail Coordinator	On going
Provide incentives in the form of “density bonus” when a developer incorporates the waterway setback and participates in the development of the setback.	Amend subdivision “density” bonuses.	Planning & Planning Commission	2005
Annually review and prioritize trail development projects.	Annually review and update the Waterway & Trail Capital Improvement Program budget.	Trail Coordinator, Committee, City Council	On going
Coordinate with the Park & Recreation Foundation to implement a program of chartable giving to support trail projects	Approval of Foundation Board of Directors	Park & Rec Director	On going

RECOMMENDATION	REQUIRED ACTION	Who	When
Trail Design Standards			
Adopt recommended Class I design standards as part of City Bicycle Plan	Incorporate trail design standards in Bicycle Plan	Trail Coordinator	2004
Review plans for trail & setback development to insure compliance with master plan.	Trail Coordinator will review plans for waterway setback development	Trail Coordinator & Trail Committee	On going
Maintenance & Operations			
Coordinate with Irrigation Districts and Kaweah Delta Water Conservation Dist when developing projects	Provide plans for review and comments, coordinate maintenance and development.	Trail Coordinator	
Develop trail maintenance standards and procedure manual	Staff to develop manual	Trail Coordinator	
Safety- Implement recommendation as identified in Trail Operation section.	None	Trail Coordinator	On going
Include setback maintenance in landscape & lighting district. Develop minimum maintenance standards for trails & setback areas.	Comments to this effect at Site Plan Review.	Site Plan Committee & Trail Coordinator	On going
Assign staff person to coordinate the implementation of the Master Plan and staff Trails Advisory Committee	City Manager assign staff	City manager	On going
Organize an adopt-a-trail program	Expand current Adopt-A-Park program to include trails	Trail and Bike Committee	On going
Recognize the Waterway & Trail Task Force as a Committee responsible for the ongoing implementation of the Master Plan	Recommendation to Council	Staff	2004

D. CALIFORNIA NATIVE PLANTS FOR RESTORATION OF STREAMSIDES AND ADJACENT AREAS

Scientific Name	Common Name	Water = + or ++	Native to Tul Co = *	Deciduous = d	Comments
Sequoia Sempervirens	Coast Redwood	+			
Heuchera Maxima	Island Alum Root & its hybrids	+			Afternoon shade needed
Legmus Triticoides	Creeping Wildrye Grass	+	*		Spreads underground; best if mowed yearly
Juncus Patens	California Gray Rush	+	*		Tolerate wet soil
Carex Tumulicola	Berkeley Sedge	+	*		Tolerate wet soil
Hibiscus Californicus or CA form of H. Lasciocarpus	Ca Rose - Mallow	+		d	Loves mud & full sun, clip to ground in winter
Cephalanthus Occidentalis	Buttonwillow	+	*	d	Tolerate wet soil
Platanus Racemosa	CA Sycamore	+	*	d	Tolerate wet soil
Calycanthus Occidentals	Western Spicebush	+	*	d	Tolerate wet soil
Rosa California	CA Wild Rose	+	*	d	Spreads Underground
Quercus Lobata	Water Oak or Valley Oak	+	*	d	
Aristolochia California	CA Pipevine	+		d	
Umbellularia California	Ca Bay Tree	+	*		The leaves can be used, sparingly, for flavoring soup, stew, toungue, etc
Cercis Occidentalis	Western Redbud	+	*	d	
Heteromeless Arbutifolia	Toyon	+	*		
H. Arbutifolia	Davis Gold, Yellow-Berry Toyon	+			
Eschscholzia California	CA Poppy	+	*		Mow to the ground
Lupinus Microcarpus var. Densiflorus	Ed Gedling, Davis Golden Lupine	++			Mow in late June and annual
Nassella Pulchra	Purple Needle Grass	++	*		Mow in late June or when tousled
Dichelostemma Capitatum	Blue Dicks	++	*	d	Also called brodiaea
Triteleia Laxa	Ithuriel's Spear	++	*	d	
Epilobium Canum	Ca Fuchsia or Zauc-schneria	+	*	d	Mow the taller firms in winter

E. Canum subspecies Latifolum	Everett's Choice	+		d	
Chiopsis Linearis	Desert-Willow	++		d	
Cercidium Floridum	CA Palo Verde	++			
Viguiera Parishii	Arroyo Golden-Eye	++			
Nolina Bigelovii	Bigelow's Beargrass	++			
Dendromecon Harfordii	Island Bush Poppy	++			Do not disturb its roots during planting
Quercus Douglasii	White Oak or Blue Oak	++	*	d	
Isomeris Arborea	Bladder Pod or Rattle Bush	++	*		
Washington Filitera	CA Fan Palm	++			Has weedy seedlings
Pinus Torreyana	Torrey Pine	++			
Carpenteria California	Carpenteria	+			
Achillea Millefolium (CA Selections)	CA Yarrow	+	*		Can be mowed monthly in summer
Ribes Viburifolium	Santa Catalina Is. Currant	+			Needs shade all afternoon
Anemopsis Californica	Hierba del Manso or Yerba Mansa	+	*	d	Spreads by runners
Aster Chilensis	Point Saint George's, Dwarf Wild Aster	+			
Baccharis Piluaris	Twin Peaks Two, Pigeon Point, Dwarf Coyote Bush	+			
Carex Obnupta	Spreading Sedge	+	*		Spreads underground
Cornus Glabra	Osier Dogwood	+	*	d	Purple and pale yellow fall color, maroon stems
Galvezia Speciosa	Island Snapdragon	+			
Iva Hayesiana	Spreading Sumpwort	+			
Lessingia	Silver Carpet, Spreading Corethrogyne	+			
Muhlenbergia Rigens	Deer Grass	+	*		Mow only when touseled
Parthenocissus Inserta	Kern Canyon Woodbine	+		d	Rampant
Quercus Engelmannii	Pasadena Oak or Mesa Oak	++			
Rhus Triloba	Sour berry	+	*	d	

Solidago Californica	CA Goldenrod	+	*		Mow once a year when looking shabby
Symphoricarpos Albus var. Laevigatus	Snowberry	+	*	d	
Verbena Lilacina	De La Mina, Cedros Island Verbena	+			Clip yearly to 6” high when looking rough
Vitis Californica	Roger’s Red, Raiche’s CA Grapevine	+		d	Rampant, red fall color
Key:					
d = Deciduous					
++ = No irrigation required once well establed					
+ = Does best with watering every 2 weeks					
* = Native to Tulare County					
Presented by Warren G. Roberts, Superintendent, U.C. Davis Arboretum					