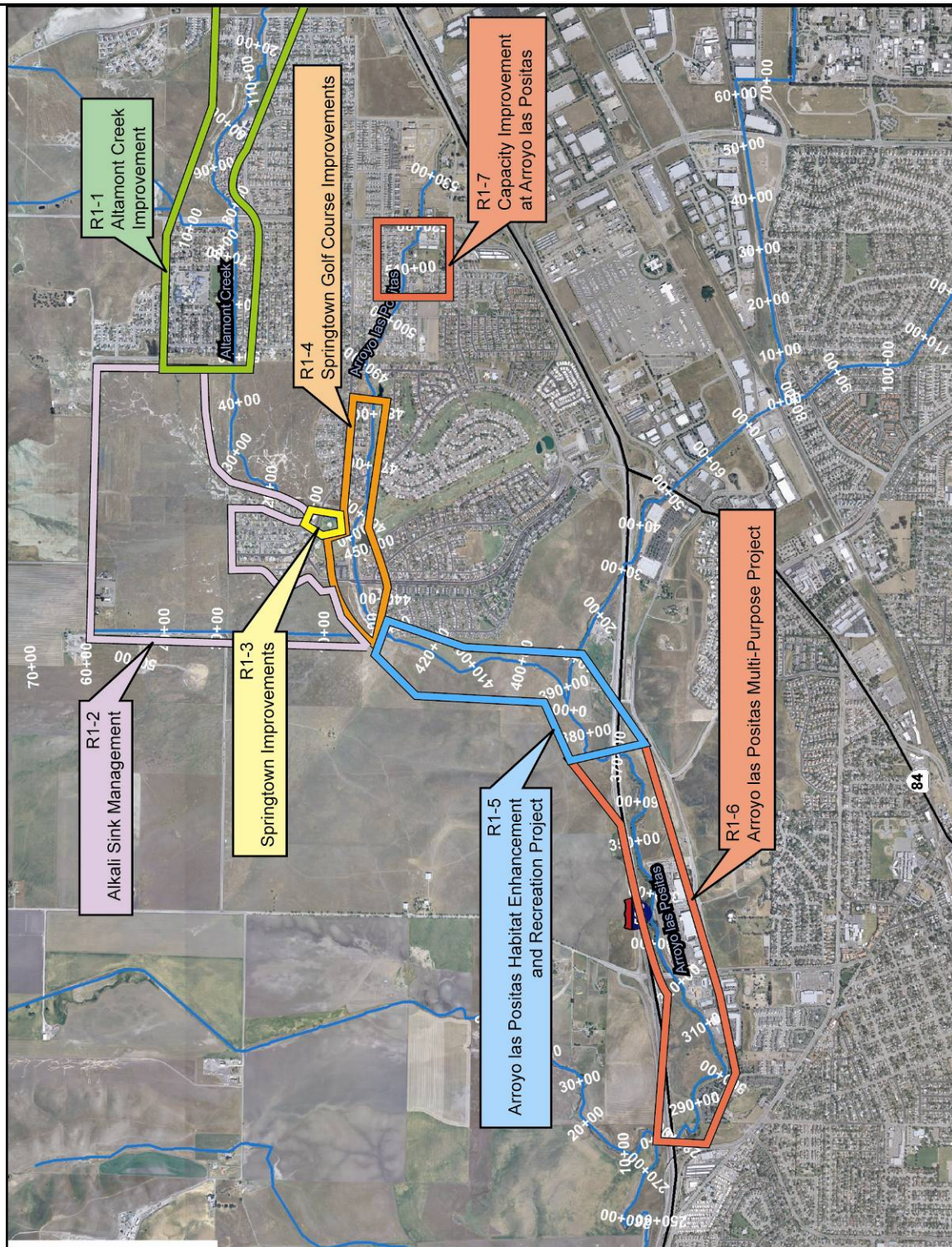


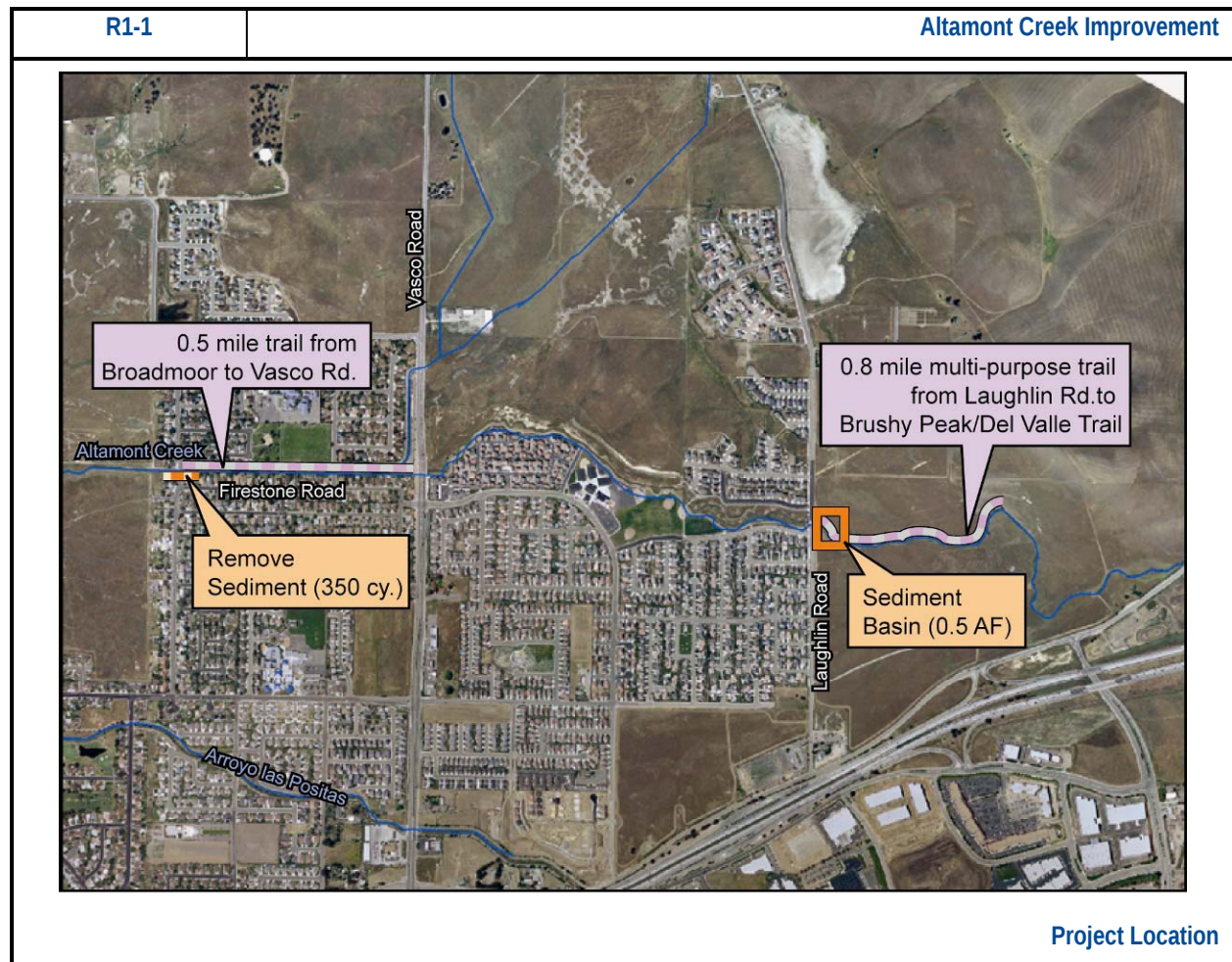
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Reach 1 Summary Map



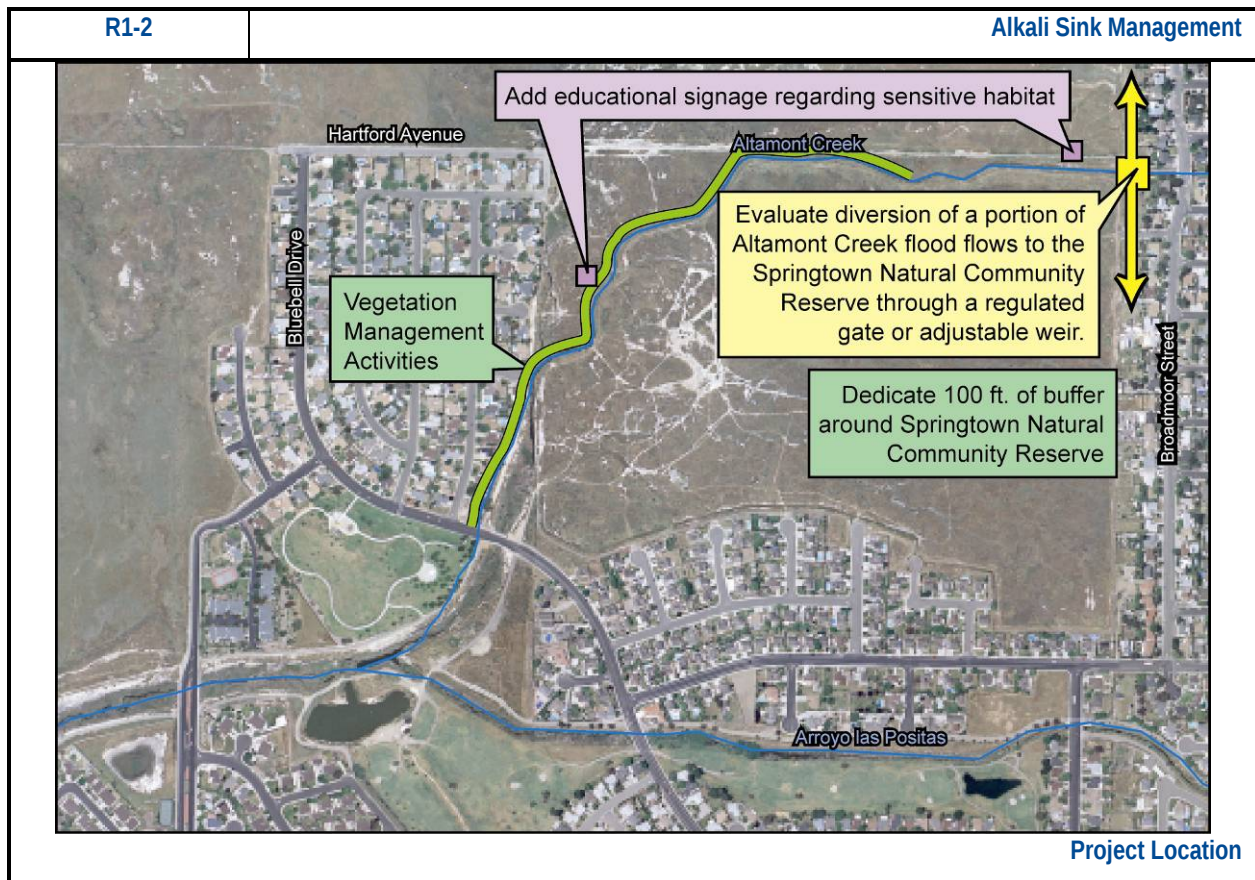
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| <b>Project Number</b>             | R1-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Project Name</b>               | Altamont Creek Improvement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Project Location</b>           | Altamont Creek between Brushy Peak/Del Valle Trail and Laughlin Road (STA 145+00 to 125+00).<br>Altamont Creek between Vasco Road and Broadmoor Street (STA 75+00 to 50+00).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Purpose</b>                    | Create a system of regional trails and provide connectivity between existing trails.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Project Components</b>         | <ol style="list-style-type: none"> <li>1. Construct a 0.5 mile trail from Broadmoor Street to Vasco Road.</li> <li>2. Construct a 0.8 mile multi-purpose trail from Laughlin Road to Brushy Peak/Del Valle Trail. The project includes acquisition of 1.4 acres for the trail component.</li> <li>3. Conduct sediment management activities including: <ul style="list-style-type: none"> <li>• Constructing a sediment basin in Altamont Creek just upstream of the Laughlin Road crossing. Sediment basin size estimated at 0.50 acre-feet (AF). The trail proposed under Project R.1-1 from Laughlin Road to Brushy Peak could be used as an access road for the sediment basin. The project includes acquisition of 0.5 acres for the sediment basin.</li> <li>• Removing sediment along 145 feet of Altamont Creek to restore the channel capacity. Sediment removal to be conducted immediately upstream and downstream of the Broadmoor Street crossing (approximately 350 CY). The project includes creation of 1.2 acres of wetlands as environmental mitigation for sediment management activities.</li> </ul> </li> </ol> |
| <b>Capital Cost Estimate</b>      | \$3,360,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Implementation Issues</b>      | <ul style="list-style-type: none"> <li>• Coordination with the City of Livermore, LARPD, and the County Mosquito Abatement District</li> <li>• Regulatory approval required for culvert arroyo/cantilever trail proposed between Broadmoor and Vasco Rd</li> <li>• Need to evaluate sediment sources and implement sediment management program before initiation of project</li> <li>• High habitat value for the special status species (bird's peak, California red legged frog, and California tiger salamander)</li> <li>• Permitting in compliance with Clean Water Act (CWA) Sections 401/404</li> <li>• Coordination with Department of Fish and Game, and U.S. Fish and Wildlife Service</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Project Precursors</b>         | There is a need to evaluate sediment issues through preparation of a Geomorphic Analysis and a subsequent Sediment Management Study for Altamont Creek, Arroyo las Positas, and Line S.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Project Benefits</b>           | <ul style="list-style-type: none"> <li>• Provide trail connectivity along Altamont Creek from confluence with Arroyo las Positas to Brushy Peak.</li> <li>• Restores a more natural stream hydrology in Altamont Creek.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Goals/Objectives Addressed</b> | Flood Protection & Drainage: none<br>Erosion and Sedimentation: C<br>Water Supply: none<br>Water Quality: C<br>Habitat & Environment: E<br>Recreation, Trails, and Public Education: C, D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Maintenance Activities</b>     | Maintenance of trails: <ul style="list-style-type: none"> <li>• Conduct annual inspection of trails.</li> <li>• Seal cracks and repair pavement on trails, as needed.</li> <li>• Clear debris and vegetation growth, as needed.</li> <li>• Repair signs and structures, as needed.</li> </ul> Maintenance of sediment basin: <ul style="list-style-type: none"> <li>• Conduct field inspections of the sediment basin.</li> <li>• Conduct sediment sampling prior to sediment removal and prepare Sediment Characterization Report.</li> <li>• If desilting activities are conducted in a "wet stream", conduct water quality</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

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|                                         | <p>sampling prior to and after sediment removal. Prepare a Water Quality Sampling Plan.</p> <ul style="list-style-type: none"><li>• Dewater site if desilting activities are conducted in a "wet stream". Conduct desilting activities.</li><li>• Store and transport dredged material to an off-site landfill facility.</li><li>• Conduct mitigation for sediment removal activities.</li></ul>                                                                                                                                                                                                                                                                             |
| <b>Annual Maintenance Cost Estimate</b> | \$96,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Notes</b>                            | <ul style="list-style-type: none"><li>• Identified as a high priority project (ranked 13 of 52) in City of Livermore Bikeways and Trails Master Plan (December 2001).</li><li>• One-time sediment removal at the Broadmoor Street crossing to be conducted in conjunction with the construction of the sediment basin upstream of Laughlin Road.</li><li>• Recommendation based on field visit triggered by Zone 7 comments and a West Yost Associates reference.</li><li>• Alternatives to sediment basins such as offline ponds with habitat bypass channels, wetlands, floodplain benches, and in-line pools can be considered as part of the pre-design phase.</li></ul> |
| <b>References</b>                       | <ul style="list-style-type: none"><li>• City of Livermore Bikeways and Trails Master Plan, Wilbur Smith Associates, December 11, 2001</li><li>• Flood Control MP, TM No. 5: Evaluation of Problem Areas &amp; Identification of Solutions, West Yost &amp; Associates, November 2001</li><li>• Communication with Zone 7 Water Agency, 2003</li></ul>                                                                                                                                                                                                                                                                                                                        |



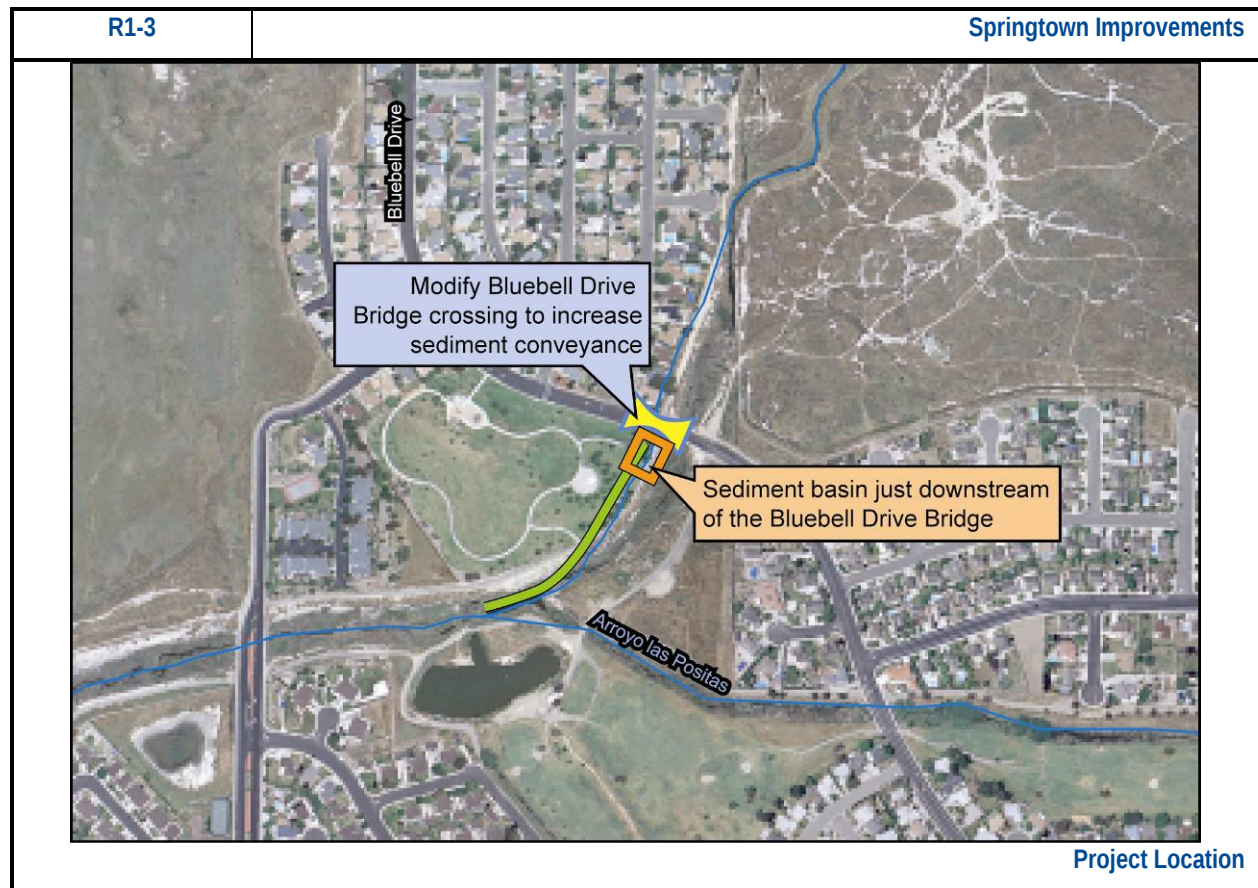
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| <b>Project Number</b>             | R1-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Project Name</b>               | Alkali Sink Management                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Project Location</b>           | Along Altamont Creek, from Broadmoor Street to the confluence of Arroyo las Positas (STA 50+00 to 10+00).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Purpose</b>                    | This project will protect and enhance the natural habitat in the preserve.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Project Components</b>         | <ol style="list-style-type: none"> <li>1. Dedicate 100 feet of buffer around the Springtown Natural Community Reserve (approximately 100 feet x 1 mile = 12 acres).</li> <li>2. Construct a regulated gate or adjustable weir to divert a portion of Altamont Creek flood flows into the Springtown Natural Community Reserve.</li> <li>3. Install additional educational signage/kiosk (2) regarding the preservation of the bird's beak habitat.</li> <li>4. Conduct vegetation management activities including invasive species control along 2,500 feet of both banks of Altamont Creek (STA 35+00 to 10+00).</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Capital Cost Estimate</b>      | \$4,745,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Implementation Issues</b>      | <ul style="list-style-type: none"> <li>• Permitting issues associated with special status species</li> <li>• Permitting in compliance with CWA Sections 401/404</li> <li>• Coordinate projects with resource agencies (RWQCB, CDFG, USFWS, etc.) due to the area designation as proposed critical habitat for the Red-Legged Frog. Coordination with County Mosquito Abatement District.</li> <li>• Coordination with City of Livermore, LARPD, County of Alameda, and US Bureau of Reclamation</li> <li>• Coordination with project biologists and regulatory agencies regarding flooding impacts on resident endangered species</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Project Precursors</b>         | <ul style="list-style-type: none"> <li>• Develop an Alkali Sink Management Plan to understand the impact of diverting flows to Alkali Sink.</li> <li>• Evaluate diversion of a portion of Altamont Creek flood flows to alkali sink through regulated gate or adjustable weir.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Project Benefits</b>           | <ul style="list-style-type: none"> <li>• Minimizes impacts of land use development on alkali habitat.</li> <li>• Provides flood protection to areas downstream of the Springtown Natural Community Reserve.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Goals/Objectives Addressed</b> | Flood Protection & Drainage: none<br>Erosion and Sedimentation: none<br>Water Supply: none<br>Water Quality: none<br>Habitat & Environment: B, C, D<br>Recreation, Trails, and Public Education: B, E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Maintenance Activities</b>     | <p>Inspect regulated gate or adjustable weir during wet weather flows.</p> <p>Develop a monitoring plan to identify changes in alkali sink habitat due to project implementation. A pre-project survey should be conducted to determine the baseline condition of the area. After project implementation, a survey of observed hydrologic regime, soil, and presence or absence of vernal pools or other special status species should be conducted annually to monitor the success of the project.</p> <p>Vegetation Maintenance:</p> <ul style="list-style-type: none"> <li>• Conduct annual inspection of planted riparian vegetation.</li> <li>• Conduct maintenance of riparian vegetation by utilizing a combination of methods including hand removal, mechanical or chemical clearing. The annual maintenance cost estimate is based on hand removal of riparian vegetation.</li> <li>• Collect and dispose of vegetation debris.</li> </ul> <p>Interpretive kiosk:</p> <ul style="list-style-type: none"> <li>• Inspect signage on an annual basis to make sure it is still in the appropriate</li> </ul> |

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|                                         | location and legible.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Annual Maintenance Cost Estimate</b> | \$119,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Notes</b>                            | <ul style="list-style-type: none"><li>• The Springtown Natural Communities Reserve includes areas of alkali sink scrub vegetation and vernal pools that support many special status species including bird's beak and California tiger salamander.</li><li>• Improvements to the Alkali Sink will be implemented as appropriate, based on the latest scientific findings and studies of the site including the Questa Engineering hydrologic analysis study conducted in November 1998. Livermore has noted that some water recirculation is occurring from the creek to the Alkali Sink Area.</li><li>• The buffer area may be greater than 100 feet, based on the biological value of the reserve.</li><li>• Design of the regulated gate should consider western pond turtle and associated habitat.</li><li>• Development of the Alkali Management Plan is critical to understanding the impacts of diverting water back into the reserve and proper management of the Alkali sink.</li></ul> |
| <b>References</b>                       | Existing Conditions and Sensitivities/Constraints Analysis for Arroyo Las Positas Stream Corridor Management Plan Phase I, Questa Engineering Corporation, March 1998                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

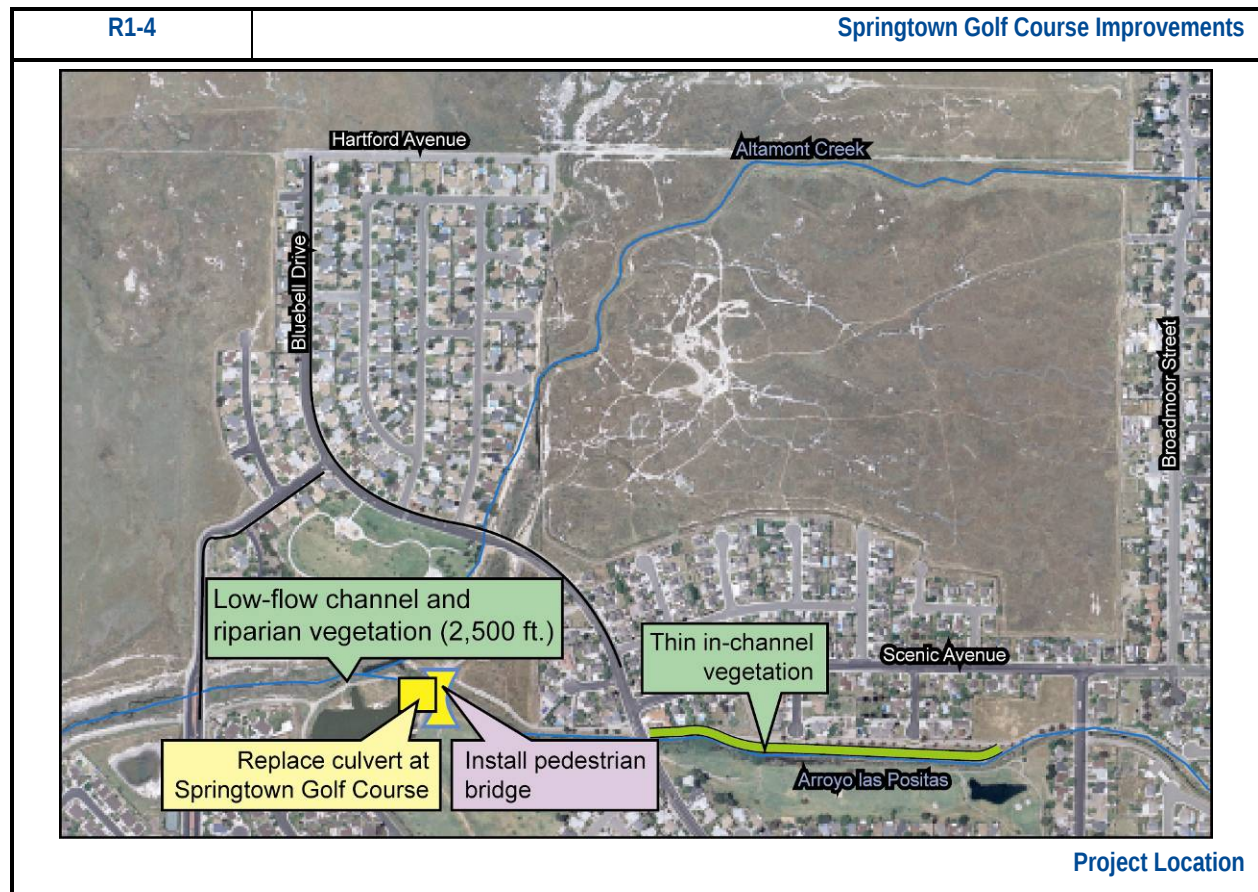


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| <b>Project Number</b>             | R1-3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Project Name</b>               | Springtown Improvements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Project Location</b>           | Altamont Creek from Bluebell Drive to the confluence with Arroyo las Positas (STA 10+00 to 0+00).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Purpose</b>                    | Curtail aggradation of Altamont Creek by trapping sediment loads from upstream in a sediment basin. Decrease potential for flooding in the vicinity of Bluebell Bridge during a 100-year flood event.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Project Components</b>         | <ol style="list-style-type: none"> <li>1. Construct a sediment basin in Altamont Creek just downstream of the Bluebell Drive Bridge. Sediment basin size estimated at 2.75 acre-feet. Project includes creation of approximately 1.4 acres of wetlands as environmental mitigation for creation of sediment basin.</li> <li>2. Modify bridge at Bluebell Drive crossing to increase sediment conveyance at bridge crossing.</li> <li>3. Conduct vegetation management activities including invasive species control along 1,000 feet of Altamont Creek (STA 10+00 to 0+00).</li> </ol>                                                                                                                                                                                                                            |
| <b>Capital Cost Estimate</b>      | \$2,710,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Implementation Issues</b>      | <ul style="list-style-type: none"> <li>• Traffic impacts associated with modification of the bridge at the Bluebell Drive crossing.</li> <li>• Permitting issues associated with potential construction impacts to special-status species such as bird's peak, California tiger salamander, and California red-legged frog.</li> <li>• Permitting in compliance with CWA Sections 401/404</li> <li>• Coordination with resource agencies (RWQCB, CDFG, etc.) and the City of Livermore</li> <li>• Coordination with the City of Livermore, the County of Alameda, and the U.S. Bureau of Reclamation on the proposed drainage plans for protection and restoration of the historic hydrologic functions of the Springtown Alkali Sink.</li> <li>• Coordination with County Mosquito Abatement District</li> </ul> |
| <b>Project Precursors</b>         | <ul style="list-style-type: none"> <li>• Evaluate need for a sediment basin based on results of project R.1-3 Springtown Improvements Phase I and drainage modifications proposed for the restoration of the Springtown Alkali Sink</li> <li>• Evaluate land use operations in upstream watershed to determine the effect on supply and transport of sediment into the stream.</li> <li>• Evaluate need for bridge modification at Bluebell Drive crossing based on results of project R.1-1 Springtown Improvements Phase I.</li> <li>• Sediment or hydraulic modeling required to aid in size determination of sediment basin.</li> </ul>                                                                                                                                                                       |
| <b>Project Benefits</b>           | <ul style="list-style-type: none"> <li>• Reduces sediment accumulation into Altamont Creek</li> <li>• Limits disturbance related to sediment removal activities to a specific location</li> <li>• Incorporates management measures into Altamont Creek operations</li> <li>• Conveys the 100-year flood event at Bluebell Drive Bridge</li> <li>• Minimizes impacts on habitat</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Goals/Objectives Addressed</b> | Flood Protection & Drainage: A, B, E<br>Erosion and Sedimentation: C<br>Water Supply: none<br>Water Quality: C<br>Habitat & Environment: C, E<br>Recreation, Trails, and Public Education: none                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Maintenance Activities</b>     | Maintenance of Sediment Basin: <ul style="list-style-type: none"> <li>• Conduct field inspections of the sediment basin.</li> <li>• Conduct sediment sampling prior to sediment removal and prepare Sediment Characterization Report.</li> <li>• If desilting activities are conducted in a "wet stream", conduct water quality sampling prior to and after sediment removal. Prepare a Water Quality Sampling Plan.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                   |

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|                                         | <ul style="list-style-type: none"> <li>• Dewater site if desilting activities are conducted in a "wet stream". Conduct desilting activities.</li> <li>• Store and transport dredged material to an off-site landfill facility.</li> <li>• Conduct mitigation for sediment removal activities.</li> </ul> <p>Vegetation Maintenance:</p> <ul style="list-style-type: none"> <li>• Conduct annual inspection of planted riparian vegetation.</li> <li>• Conduct maintenance of riparian vegetation by utilizing a combination of methods including hand removal, mechanical or chemical clearing. The annual maintenance cost estimate is based on hand removal of riparian vegetation.</li> <li>• Collect and dispose of vegetation debris.</li> </ul> |
| <b>Annual Maintenance Cost Estimate</b> | \$240,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Notes</b>                            | <ul style="list-style-type: none"> <li>• Monitor Springtown Phase I Improvements</li> <li>• The Springtown Phase II project improvements will be implemented as appropriate based on the Springtown Phase I monitoring results.</li> <li>• Alternatives to sediment basins such as offline ponds with habitat bypass channels, wetlands, floodplain benches, and in-line pools can be considered as part of the pre-design phase.</li> </ul>                                                                                                                                                                                                                                                                                                          |
| <b>References</b>                       | <ul style="list-style-type: none"> <li>• Flood Control MP, TM No. 5: Evaluation of Problem Areas &amp; Identification of Solutions, West Yost &amp; Associates, November 2001</li> <li>• Existing Conditions and Sensitivities/Constraints Analysis for Arroyo Las Positas Stream Corridor Management Plan Phase I, Questa Engineering Corporation, April 1998</li> </ul>                                                                                                                                                                                                                                                                                                                                                                             |

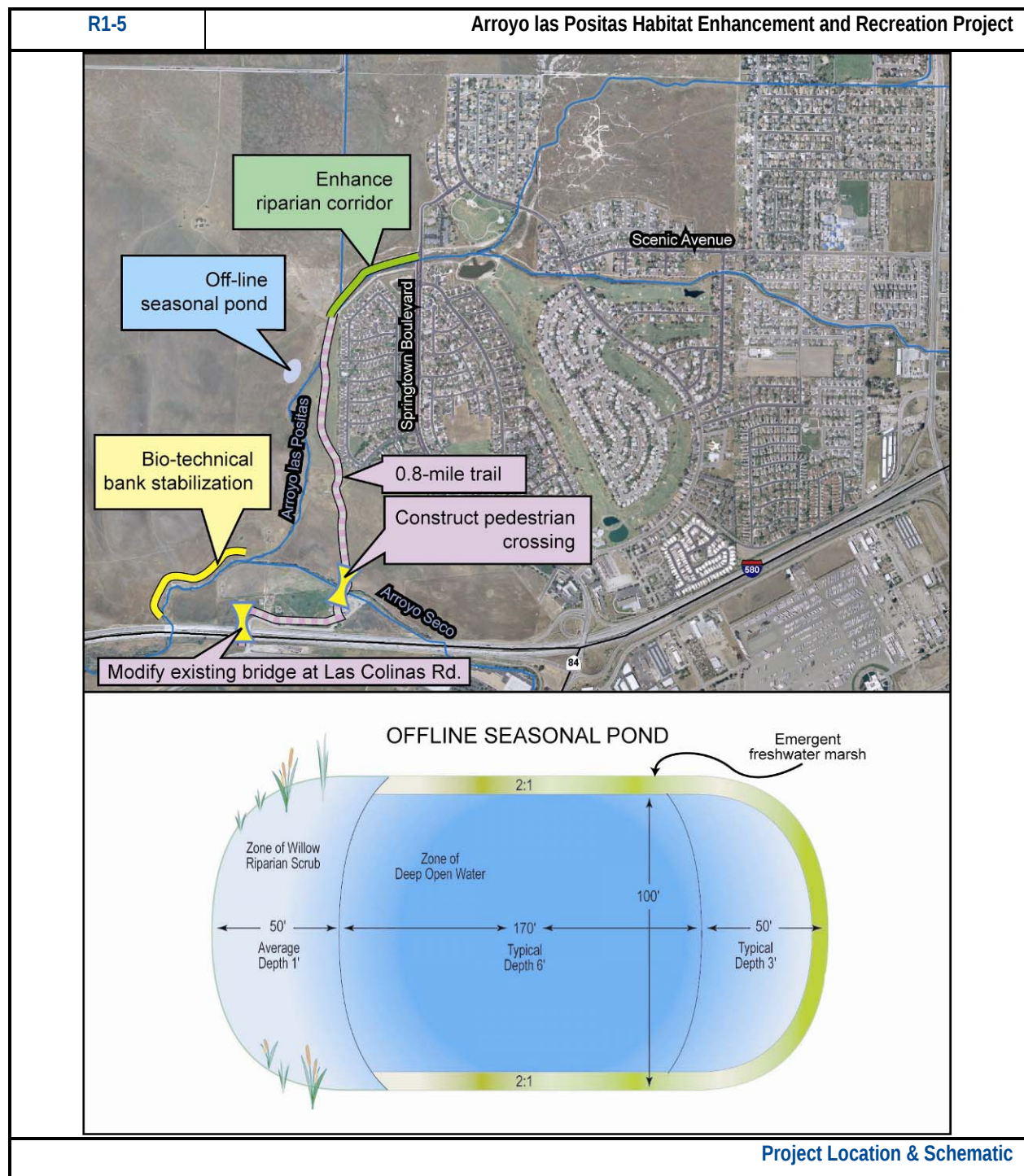


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| <b>Project Number</b>                   | R1-4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Project Name</b>                     | Springtown Golf Course Improvements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Project Location</b>                 | Springtown Golf Course along Arroyo las Positas from Heather Lane to the confluence with Altamont Creek (STA 490+00 to 430+00)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Purpose</b>                          | Implement improvements to protect the Springtown Golf Course from flooding during a 100-year flood event.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Project Components</b>               | <ol style="list-style-type: none"> <li>1. Replace double culvert barrel at Arroyo las Positas crossing with pedestrian bridge at Springtown Golf Course.</li> <li>2. Create a low-flow meandering channel (assuming a meandering ratio of 1.5) on Arroyo las Positas from STA 455+00 to 430+00 (2,500 feet) to enhance habitat for special-status species.</li> <li>3. Conduct in-stream vegetation management activities (recurring), including invasive species control and riparian vegetation planting at Arroyo las Positas for 3,500 feet (STA 490+00 to 455+00). Includes acquisition of 1.2 acres of stream for vegetation management.</li> <li>4. Conduct vegetation management activities (recurring), including invasive species control and riparian vegetation planting at Arroyo las Positas for 2,500 feet (STA 455+00 to 430+00).</li> </ol> |
| <b>Capital Cost Estimate</b>            | \$2,170,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Implementation Issues</b>            | <ul style="list-style-type: none"> <li>• High habitat value for the special status species (bird's peak, California red legged frog, and California tiger salamander)</li> <li>• Permitting in compliance with Clean Water Act (CWA) Sections 401/404</li> <li>• Coordination with the City of Livermore and the Livermore Area Recreation &amp; Park District (LARPD) for trail development</li> <li>• Coordination with Department of Fish and Game, and U.S. Fish and Wildlife Service</li> </ul>                                                                                                                                                                                                                                                                                                                                                         |
| <b>Project Precursors</b>               | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Project Benefits</b>                 | <ul style="list-style-type: none"> <li>• Addresses flooding upstream of culvert into golf course.</li> <li>• Improves Arroyo las Positas flood conveyance capacity by thinning out in-stream vegetation.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Goals/Objectives Addressed</b>       | Flood Protection & Drainage: A, E<br>Erosion and Sedimentation: none<br>Water Supply: none<br>Water Quality: none<br>Habitat & Environment: B, C, E<br>Recreation, Trails, and Public Education: none                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Maintenance Activities</b>           | In-stream vegetation management: <ul style="list-style-type: none"> <li>• Conduct annual inspection of planted riparian vegetation.</li> <li>• Conduct maintenance of riparian vegetation by utilizing a combination of methods including hand removal, mechanical or chemical clearing. The annual maintenance cost estimate is based on chemical clearing of invasive species which includes conducting a biological survey and implementing a water quality sampling plan.</li> <li>• Collect and dispose of vegetation debris.</li> </ul>                                                                                                                                                                                                                                                                                                                |
| <b>Annual Maintenance Cost Estimate</b> | \$137,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Notes</b>                            | Culvert replacement is listed in the City of Livermore's 20-year Capital Improvement Plan. Implementation of project will be conducted with coordination with the City of Livermore.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>References</b>                       | <ul style="list-style-type: none"> <li>• Flood Control MP, TM No. 5: Evaluation of Problem Areas &amp; Identification of Solutions, West Yost &amp; Associates, November 2001</li> <li>• City of Livermore 20-Year Capital Improvement Plan, 2004</li> <li>• Communication with Zone 7 Water Agency, 2003</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |



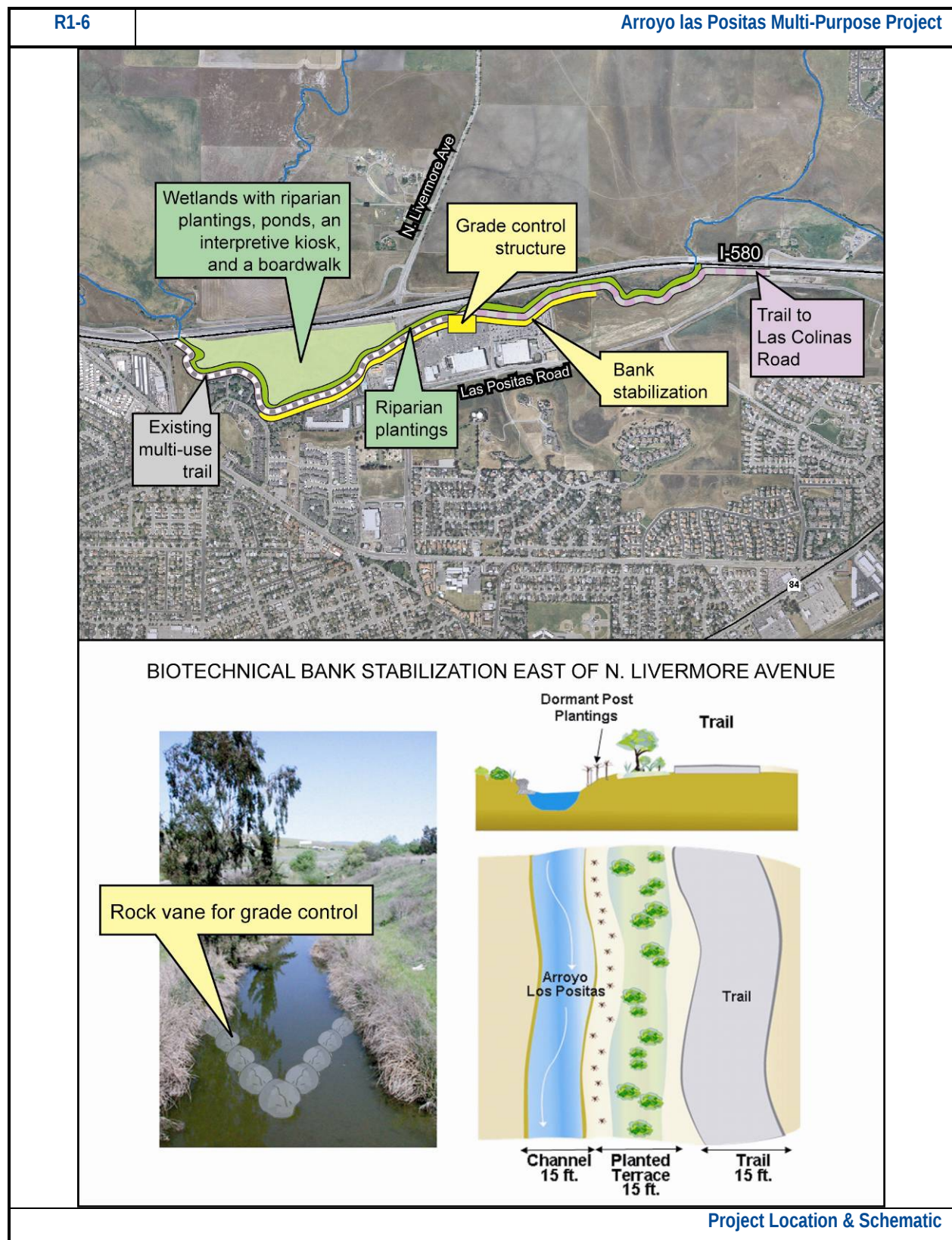
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| <b>Project Number</b>             | R1-5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Project Name</b>               | Arroyo las Positas Habitat Enhancement and Recreation Project                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Project Location</b>           | Along Arroyo las Positas north of I-580 and south of Springtown Avenue (STA 430+00 to 385+00).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Purpose</b>                    | Create a system of regional trails. Enhance upland and riparian habitat along Arroyo las Positas.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Project Components</b>         | <ol style="list-style-type: none"> <li>Implement trail enhancement projects including: <ul style="list-style-type: none"> <li>Construction of 0.8 miles of trail parallel to Arroyo las Positas from Las Colinas Road to Springtown Avenue including:</li> <li>Construction of one pedestrian bridge across Arroyo Seco; and</li> <li>Modification of I-580 pedestrian crossing at Las Colinas Road.</li> <li>Acquire 1.9 acres of land for trail.</li> </ul> </li> <li>Enhance 2.8 acres of riparian corridor by filling gaps in riparian vegetation using alkali plant elements in addition to classic riparian vegetation, from STA 430+00 to 410+00 (approximately 30 feet on each bank along 2,000 feet). Project includes acquisition of 2.8 acres for vegetation management.</li> <li>Implement habitat enhancement projects including: <ul style="list-style-type: none"> <li>Off-line seasonal ponds at STA 420+00 to create habitat for the California Red Legged Frog and California Tiger Salamander. Specific measures will be implemented to limit mosquito breeding in seasonal ponds.</li> <li>Install fencing along project perimeter (approximately 1,070 feet) to exclude cattle from the 1-acre pond and improve success of restoration efforts.</li> <li>Acquire 1 acre of land for pond and buffer area.</li> </ul> </li> <li>Construct bio-technical bank stabilization utilizing methods such as live cribwalls, live fascines, brush mattresses, or joint plantings (2,500 feet from STA 385+00 to 360+00). Project includes acquisition of 1.7 acres of land for bank stabilization.</li> </ol> |
| <b>Capital Cost Estimate</b>      | \$9,120,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Implementation Issues</b>      | <ul style="list-style-type: none"> <li>Coordinate trail construction with construction of the proposed school at confluence of Arroyo las Positas and Arroyo Seco</li> <li>Permitting in compliance with CWA Section 401/404</li> <li>Coordination with resource agencies (RWQCB, CDFG, etc.) on habitat creation</li> <li>Coordination with proposed school to develop an Adopt-a-Creek Program</li> <li>Coordination with the City of Livermore and LARPD</li> <li>Coordination with County Mosquito Abatement District to address issues with mosquito breeding in seasonal ponds</li> <li>Zone 7 purchase of right-of-way is necessary for enhancement implementation</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Project Precursors</b>         | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Benefits</b>                   | <ul style="list-style-type: none"> <li>Enhances upland habitat for special status species including the California Red Legged Frog and California Tiger Salamander.</li> <li>Provides trail connectivity between the proposed trail south of I-580 and the existing trail along Altamont Creek.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Goals/Objectives Addressed</b> | Flood Protection & Drainage: none<br>Erosion and Sedimentation: A<br>Water Supply: none<br>Water Quality: C<br>Habitat & Environment: B, C<br>Recreation, Trails, and Public Education: A, B, D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Maintenance Activities</b>     | <ol style="list-style-type: none"> <li>Maintenance of trails: <ul style="list-style-type: none"> <li>Conduct annual inspection of trails.</li> <li>Seal cracks and repair pavement on trails, as needed.</li> <li>Clear debris and vegetation growth, as needed.</li> <li>Repair signs and structures, as needed.</li> </ul> </li> <li>Vegetation maintenance:</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

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|                                          | <ul style="list-style-type: none"> <li>• Conduct annual inspection of planted riparian vegetation.</li> <li>• Conduct maintenance of riparian vegetation by utilizing a combination of methods including hand removal, mechanical or chemical clearing. The annual maintenance cost estimate is based on chemical clearing of invasive species which includes conducting a biological survey and implementing a water quality sampling plan.</li> <li>• Collect and dispose of vegetation debris.</li> </ul> <p>3. Maintenance of off-line seasonal ponds:</p> <ul style="list-style-type: none"> <li>• Develop a monitoring plan including pre- and post-project biological surveys to identify presence or absence of special-status species to monitor the success of the project.</li> </ul> <p>4. Maintenance of bank stabilization measures:</p> <ul style="list-style-type: none"> <li>• Conduct annual inspection of site.</li> <li>• Conduct repairs of bank stabilization measures, as needed.</li> </ul> |
| <b>Annual Maintenance Cost Estimates</b> | \$158,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Notes</b>                             | <ul style="list-style-type: none"> <li>• Development of an Adopt-a-Creek Program needs to be coordinated with the proposed school to be located at the confluence of Arroyo las Positas and Arroyo Seco.</li> <li>• Terracing can be evaluated as an alternative to bio-technical methods of stabilization</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>References</b>                        | <ul style="list-style-type: none"> <li>• Flood Control MP, TM No. 5: Evaluation of Problem Areas &amp; Identification of Solutions, West Yost &amp; Associates, November 2001</li> <li>• City of Livermore Bikeways and Trails Master Plan, Wilbur Smith Associates, December 11, 2001</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |



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| <b>Project Number</b>             | R1-6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Project Name</b>               | Arroyo las Positas Multi-Purpose Project                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Project Location</b>           | Arroyo las Positas along I-580 (STA 360+00 to 280+00)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Purpose</b>                    | Address in-stream and bank erosion along Arroyo las Positas. Create wetland to protect and enhance water quality and habitat. Provide connectivity between existing trail sections along Arroyo las Positas.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Project Components</b>         | <ol style="list-style-type: none"> <li>1. Stabilize channel banks by: <ul style="list-style-type: none"> <li>• Constructing bio-technical bank protection including dormant post plantings along Arroyo las Positas (STA 350+00 to 300+00)</li> <li>• Constructing bio-technical bank protection along Arroyo las Positas where washout occurred.</li> </ul> </li> <li>2. Stabilize channel bed by constructing a grade control structure such as a rock vane at STA 330+00.</li> <li>3. Construct 4,000 ft of multi-use trail along Arroyo las Positas from North Livermore Avenue to Las Colinas Road (proposed trail in R.1-6) (STA 360+00 to STA 320+00). The trail will include one road crossing at North Livermore Avenue (including 1 traffic signal and signage). Project includes acquisition of 1.8 acres of land for trail.</li> <li>4. Construct wetlands, including: <ul style="list-style-type: none"> <li>• Wetlands West of North Livermore Avenue (approximately 20 acres between STA 320+00 and 285+00). Wetlands include land acquisition, excavation, and riparian plantings.</li> <li>• Interpretive kiosk.</li> <li>• Approximately 3,000 feet of boardwalk.</li> </ul> </li> </ol> |
| <b>Capital Cost Estimate</b>      | \$32,110,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Implementation Issues</b>      | <ul style="list-style-type: none"> <li>• Permitting in compliance with CWA Section 401/404</li> <li>• Coordination with the City of Livermore, LARPD, and County Mosquito Abatement District</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Project Precursors</b>         | <ul style="list-style-type: none"> <li>• Evaluate need for construction of grade control structure at STA 330+00 based on the monitoring results of the Springtown Improvement Project (R.1-3).</li> <li>• Arroyo Plaza II project implemented by Signature Properties during summer 2003 (STA 350+00 – 365+00) and includes: <ul style="list-style-type: none"> <li>• Buried windrow of rip-rap placed behind channel banks in locations found to be susceptible to erosion; and</li> <li>• Approximately 2,000 feet of multi-use trail along stream.</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Project Benefits</b>           | <ul style="list-style-type: none"> <li>• Provides connectivity between existing trail sections along Arroyo las Positas from STA 280+00 to 325+00 and from STA 350+00 to 360+00.</li> <li>• Addresses bank erosion in unstable section of Arroyo las Positas.</li> <li>• Addresses bed degradation in unstable section of Arroyo las Positas.</li> <li>• Enhances habitat for special-status species along stream.</li> <li>• Improves water quality in Arroyo las Positas through wetland construction along creek.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Goals/Objectives Addressed</b> | Flood Protection & Drainage: none<br>Erosion and Sedimentation: A<br>Water Supply: none<br>Water Quality: B, C<br>Habitat & Environment: C, D<br>Recreation, Trails, and Public Education: B, C, D, E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Maintenance Activities</b>     | Maintenance of bank stabilization measures: <ul style="list-style-type: none"> <li>• Conduct annual inspection of site.</li> <li>• Conduct repairs of bank stabilization measures, as needed.</li> </ul><br>Maintenance of trails: <ul style="list-style-type: none"> <li>• Conduct annual inspection of trails.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

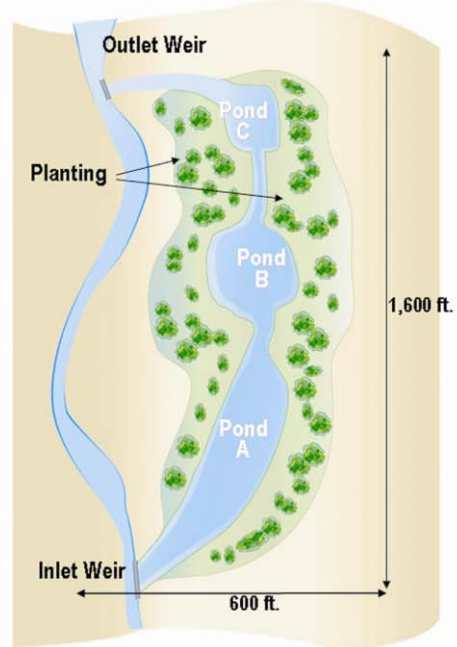
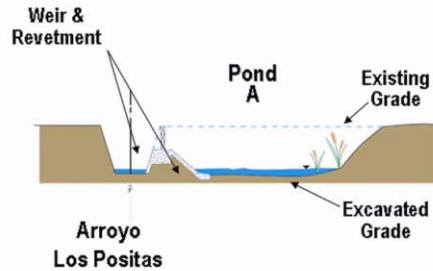
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|                                         | <ul style="list-style-type: none"> <li>• Seal cracks and repair pavement on trails, as needed.</li> <li>• Clear debris and vegetation growth, as needed.</li> <li>• Repair signs and structures, as needed.</li> </ul> <p>Maintenance of wetlands:</p> <ul style="list-style-type: none"> <li>• Conduct annual visual estimates of vegetative cover and species composition to estimate vegetative cover, species diversity, presence or absence of target and invasive species, and general abundance of individual plant species. Identify species survival rate.</li> <li>• Replace wetland vegetation, as needed, to maintain at least 50% surface area coverage after second growing season.</li> <li>• Conduct hand weeding of exotic plant species during the first three years to ensure there is no interference with the development and establishment of target wetland plant species.</li> <li>• Conduct annual routine maintenance activities including access road maintenance, and debris removal.</li> </ul> |
| <b>Annual Maintenance Cost Estimate</b> | \$358,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Notes</b>                            | <ul style="list-style-type: none"> <li>• Terracing can be evaluated as an alternative to bio-technical methods of stabilization.</li> <li>• The trail from Arroyo Plaza II to North Livermore Ave is planned for construction in spring 2006. CEQA documents are underway and are expected to be complete by July 2005. Measure B Bike and Pedestrian Funds were received to implement the project.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>References</b>                       | <ul style="list-style-type: none"> <li>• Flood Control MP, TM No. 5: Evaluation of Problem Areas &amp; Identification of Solutions, West Yost &amp; Associates, November 2001</li> <li>• Personal communication with Zone 7 Water Agency staff, August 2003</li> <li>• Personal communication with Joel Waxdeck (City of Livermore), April 2005</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |



R1-6

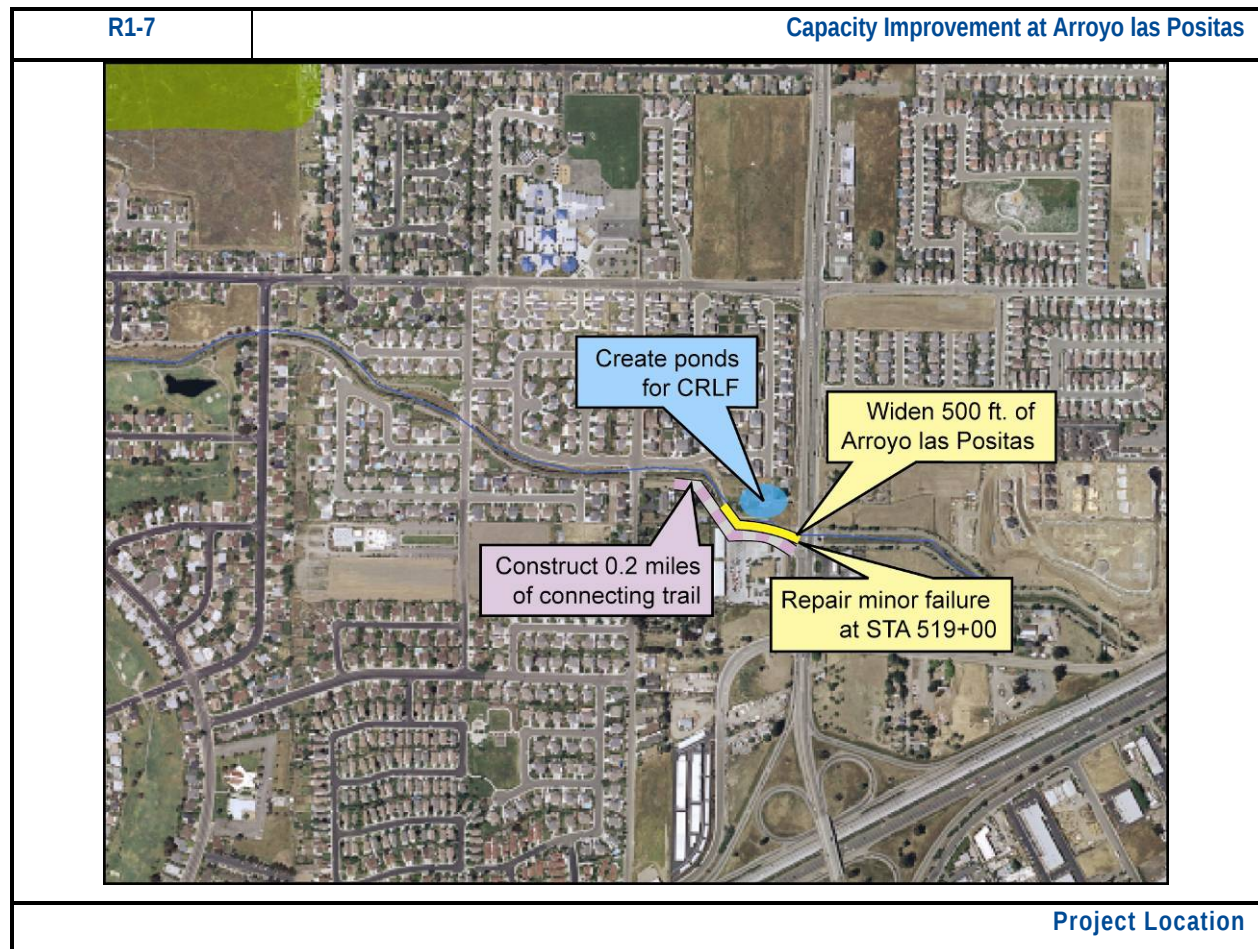
Arroyo las Positas Multi-Purpose Project

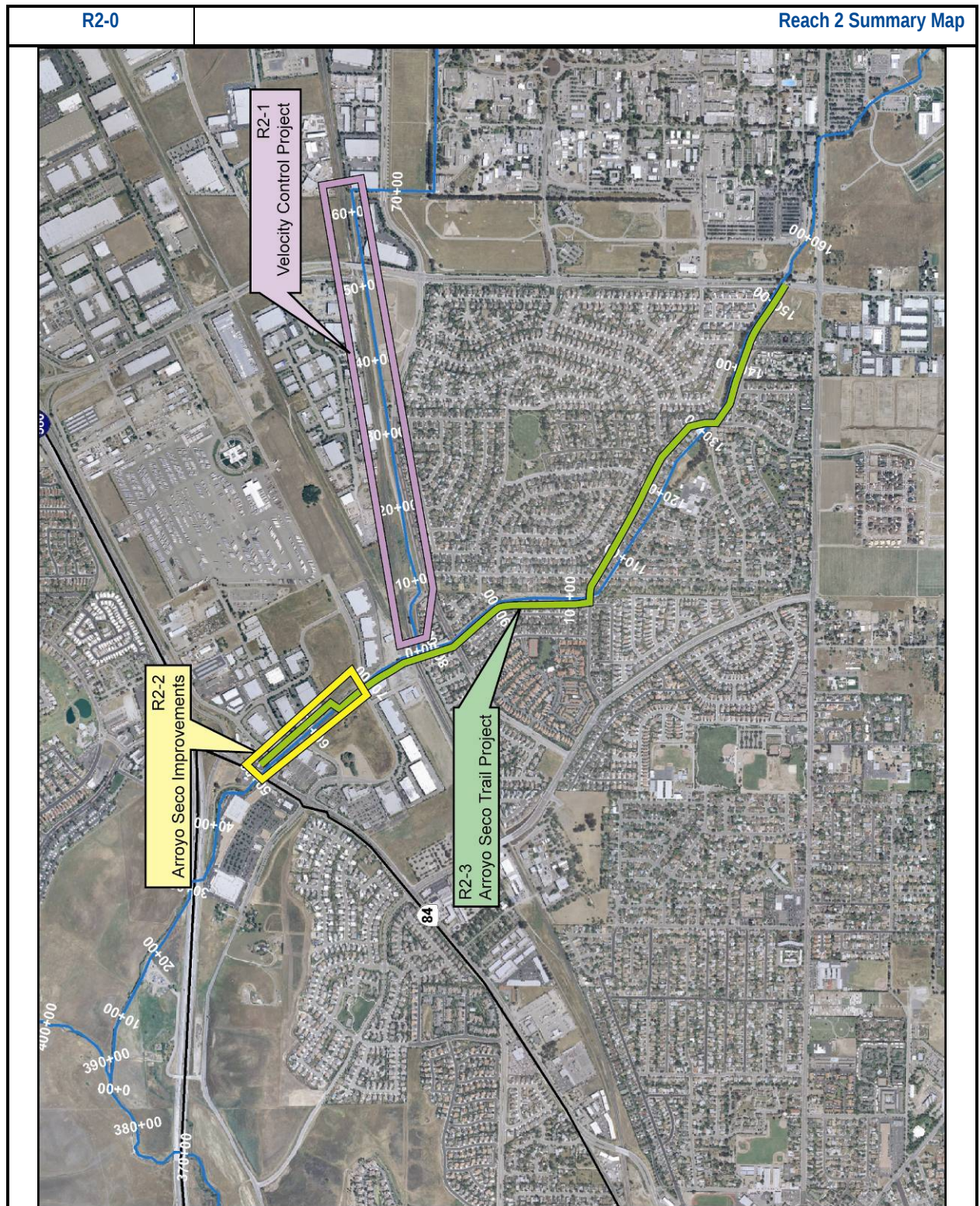
## ARROYO LAS POSITAS WETLAND WEST OF N. LIVERMORE AVENUE

Potential  
Wetland  
Location

Project Schematic

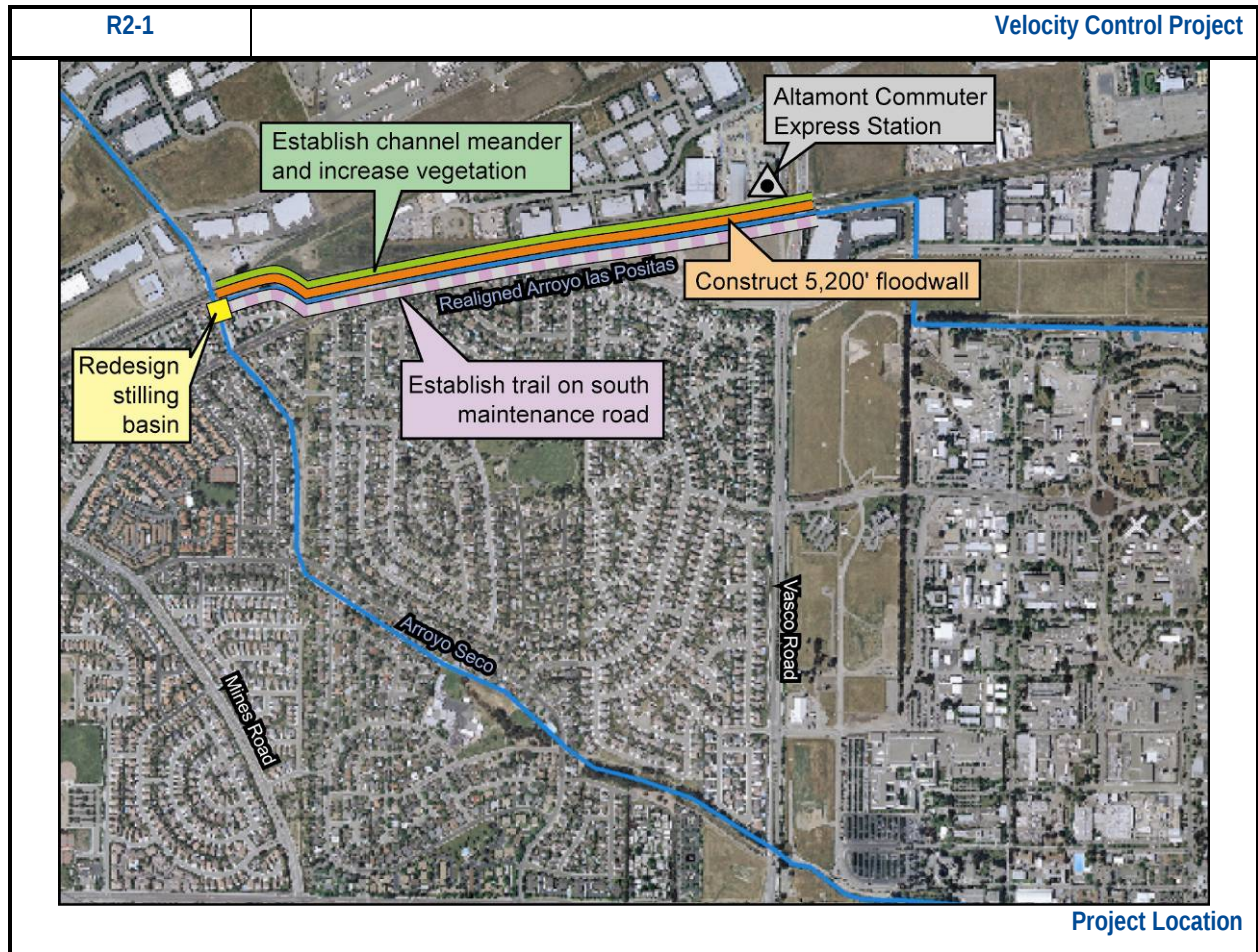
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| <b>Project Number</b>                   | R1-7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Project Name</b>                     | Capacity Improvement at Arroyo las Positas                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Project Location</b>                 | Arroyo las Positas, immediately west of Vasco Road (STA 520+00 to 515+00)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Purpose</b>                          | Increase the channel capacity of an undersized 500-foot reach of Arroyo las Positas so it equals the capacity of the reach immediately east of Vasco Road. Link the existing trail along Lobelia Way to the trail running along the north bank of Arroyo las Positas, immediately east of Vasco Road.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Project Components</b>               | <ol style="list-style-type: none"> <li>1. Widen channel to geometry of upstream reach of Arroyo las Positas (immediately west of Vasco Road). Project includes acquisition of 0.11 acres of land for channel widening. Project also includes creation of 0.14 acres of wetlands as environmental mitigation for channel widening.</li> <li>2. Repair a minor bank failure along the south bank of Arroyo las Positas (STA 518+00).</li> <li>3. Construct a 0.2 mile trail from Lobelia Way to the existing trail running along the north bank of Arroyo las Positas and starting immediately east of Vasco Road. Project includes acquisition of 0.2 acres for trail.</li> <li>4. Create off-line seasonal ponds to create habitat for the California Red Legged Frog and California Tiger Salamander. Specific measures will be implemented to limit mosquito breeding in seasonal ponds. Project includes acquisition of 0.5 acres of land for pond and buffer area.</li> </ol> |
| <b>Capital Cost Estimate</b>            | \$1,250,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Implementation Issues</b>            | <ul style="list-style-type: none"> <li>• Coordination with the City of Livermore, LARPD, and County Mosquito Abatement District.</li> <li>• Permit coordination</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Project Precursors</b>               | Zone 7 to coordinate with the City of Livermore on Right-of-Way along a 500-foot stretch of Arroyo las Positas.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Project Benefits</b>                 | <ul style="list-style-type: none"> <li>• Provide trail connectivity along Arroyo las Positas</li> <li>• Address local flooding issues</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Goals/Objectives Addressed</b>       | Flood Protection & Drainage: B, C<br>Erosion and Sedimentation: A<br>Water Supply: none<br>Water Quality: none<br>Habitat & Environment: D<br>Recreation, Trails, and Public Education: C, D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Maintenance Activities</b>           | Maintenance of bank stabilization measures: <ul style="list-style-type: none"> <li>• Conduct annual inspection of site.</li> <li>• Conduct repairs of bank stabilization measures, as needed.</li> </ul> Maintenance of trails: <ul style="list-style-type: none"> <li>• Conduct annual inspection of trails.</li> <li>• Seal cracks and repair pavement on trails, as needed.</li> <li>• Clear debris and vegetation growth, as needed.</li> <li>• Repair signs and structures, as needed.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Annual Maintenance Cost Estimate</b> | \$12,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Notes</b>                            | Project recommended by Zone 7.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>References</b>                       | City of Livermore Bikeways and Trails Master Plan, Wilbur Smith Associates, December 11, 2001                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |





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| <b>Project Number</b>             | R2-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Project Name</b>               | Velocity Control Project                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Project Location</b>           | Realigned Arroyo las Positas, from confluence with Arroyo Seco to Patterson Pass Crossing (STA 62+00 to 0+00)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Purpose</b>                    | <ul style="list-style-type: none"> <li>• Flood protection along Realigned Arroyo las Positas.</li> <li>• Address in-stream and bank erosion due to high velocity flood flows.</li> <li>• Create links to regional trails.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Project Components</b>         | <ol style="list-style-type: none"> <li>1. Construct 5,200 feet long, 4 feet high floodwall along the south bank of Realigned las Positas from confluence with Arroyo Seco (STA 0+00) to Shelley Street (STA 52+00).</li> <li>2. Construct velocity/erosion control measures (STA 62+00 to 10+00), including: <ul style="list-style-type: none"> <li>• Channel meander along 5,200' of Realigned Arroyo las Positas channel. Channel meander dimensions are 7,800 feet (1.25 x existing channel length of 5,200 feet).</li> <li>• Rock vane downstream of channel meander.</li> <li>• Reconfiguration of concrete weir stilling basin to provide better energy dissipation.</li> <li>• Increased vegetation along the channel sloped and banks.</li> </ul> </li> <li>3. Establish 5,300 feet of trail on existing south maintenance road from Vasco Road (STA 53+00) to confluence with Arroyo Seco (STA 0+00) to be linked to Regional Trails Project R.2-3.</li> </ol> |
| <b>Capital Cost Estimate</b>      | \$19,390,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Implementation Issues</b>      | <ul style="list-style-type: none"> <li>• Space constraints and potential utility conflicts.</li> <li>• Permitting in compliance with CWA Section 401/404.</li> <li>• Special-status species permit coordination.</li> <li>• Coordination with City of Livermore and LARPD on trail development.</li> <li>• This area designated as critical habitat for CRLF.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Project Precursors</b>         | <ul style="list-style-type: none"> <li>• Hydrologic/hydraulic/geomorphic modeling.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Project Benefits</b>           | <ul style="list-style-type: none"> <li>• Remove area along realigned Arroyo las Positas from FEMA 100-year flood zone.</li> <li>• Reduces erosion.</li> <li>• Improves riparian conditions through re-vegetation.</li> <li>• Provides regional trail connectivity.</li> <li>• In combination with Regional Trails Project R.2-5, provides non-vehicular travel between neighborhoods, transit centers (Altamont Commuter Express Vasco station), and job centers.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Goals/Objectives Addressed</b> | Flood Protection and Drainage: B, C, D<br>Erosion and Sedimentation: A, C<br>Water Supply: none<br>Water Quality: C<br>Habitat & Environment: A<br>Recreation, Trails, and Public Education: C, D, G                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

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| Maintenance Activities           | <ul style="list-style-type: none"><li>• Vegetation Maintenance:<ul style="list-style-type: none"><li>• Conduct annual inspection of planted riparian vegetation.</li><li>• Conduct maintenance of riparian vegetation by utilizing a combination of methods including hand removal, mechanical or chemical clearing. The annual maintenance cost estimate is based on hand removal of riparian vegetation.</li><li>• Collect and dispose of vegetation debris.</li></ul></li><li>• Trail Maintenance:<ul style="list-style-type: none"><li>• Conduct annual inspection of trails.</li><li>• Seal cracks and repair pavement on trails, as needed.</li><li>• Clear debris and vegetation growth, as needed.</li><li>• Repair signs and structures, as needed.</li></ul></li></ul> |
| Annual Maintenance Cost Estimate | \$95,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Notes                            | <ul style="list-style-type: none"><li>• The area is designated as proposed critical habitat for California Red-Legged Frog.</li><li>• Velocity control structures and other construction work will be designed to protect special-status species, including California Red-Legged Frog.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| References                       | <ul style="list-style-type: none"><li>• City of Livermore Bikeways and trails Master Plan, Wilbur Smith Associates, December 11, 2001.</li><li>• Special Drainage Area 7-1 Fee Structure Update, Schaaf &amp; Wheeler, June 30, 2000.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

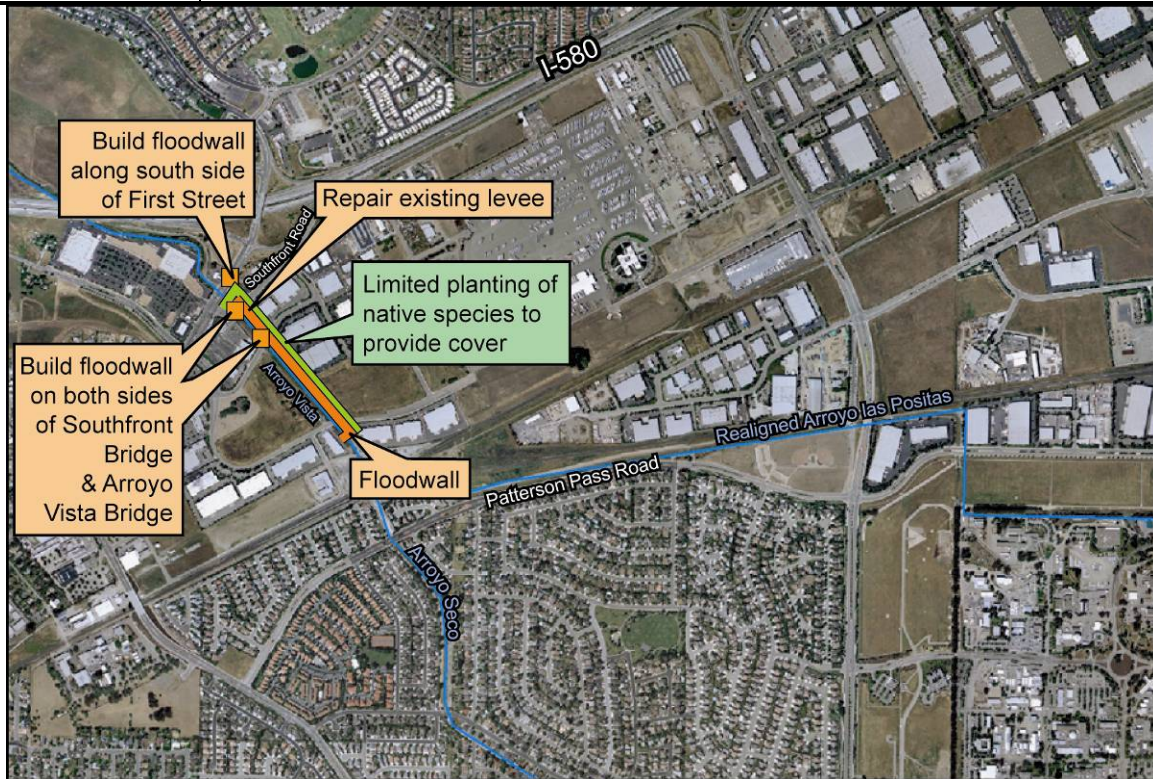


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| <b>Project Number</b>             | R2-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Project Name</b>               | Arroyo Seco Improvements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Project Location</b>           | Arroyo Seco from First Street crossing to Las Positas Road (STA 68+00 to 50+00)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Purpose</b>                    | Allow Arroyo Seco to convey 100-year flows at built-out conditions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Project Components</b>         | <ol style="list-style-type: none"> <li>Construct floodwalls, including: <ul style="list-style-type: none"> <li>1 feet-high walls along the three bridges to provide adequate freeboard under built-out conditions. The floodwall along First Street Bridge would be on its south side. Floodwalls along the Southfront and Arroyo Vista bridges would be on both sides. There would be a total of five walls built along the three bridges.</li> <li>1,530 feet of 2 feet high floodwall along the east bank of Arroyo Seco between First Street and Las Positas Road.</li> </ul> </li> <li>Repair the existing levees along the east bank of Arroyo Seco between the Southfront Road and Arroyo Vista bridges. Repair work would be conducted along 500 feet of levees.</li> <li>Perform limited plantings of native species to provide cover and shade through reach. Conduct vegetation planting along 1,400 feet of levee.</li> <li>Construct bio-technical bank stabilization along 1,400 feet of stream on both banks.</li> </ol> |
| <b>Capital Cost Estimate</b>      | \$3,320,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Implementation Issues</b>      | <ul style="list-style-type: none"> <li>Coordination with Caltrans and the City of Livermore on design and implementation of improvements.</li> <li>Permitting in compliance with CWA Section 401/404.</li> <li>Special-status species permitting coordination.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Project Precursors</b>         | <ul style="list-style-type: none"> <li>City of Livermore General Plan update.</li> <li>Model capacity of individual bridges. The need for the proposed improvements will depend on results of modeling study.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Project Benefits</b>           | <ul style="list-style-type: none"> <li>Reduces flooding damage and liability.</li> <li>Provides regional trail connectivity.</li> <li>Increases habitat value through riparian plantings.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Goals/Objectives Addressed</b> | Flood Protection and Drainage: B, C, D, E<br>Erosion and Sedimentation: A<br>Water Supply: none<br>Water Quality: none<br>Habitat & Environment: C<br>Recreation, Trails, and Public Education: none                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Maintenance Activities</b>     | <ul style="list-style-type: none"> <li>Levee Maintenance: <ul style="list-style-type: none"> <li>Conduct annual inspection</li> <li>Repair levee as needed</li> </ul> </li> <li>Vegetation Maintenance: <ul style="list-style-type: none"> <li>Conduct annual inspection of planted riparian vegetation.</li> <li>Conduct maintenance of riparian vegetation by utilizing a combination of methods including hand removal, mechanical or chemical clearing. The annual maintenance cost estimate is based on hand removal of riparian vegetation.</li> <li>Collect and dispose of vegetation debris.</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                             |

|                                         |                                                                                                                                                                                                                                                                      |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Annual Maintenance Cost Estimate</b> | \$119,000                                                                                                                                                                                                                                                            |
| <b>Notes</b>                            | <ul style="list-style-type: none"><li>• This project has been revised to account for reduced future development as per Livermore's General Plan.</li><li>• Improvements will be designed to include protection for special-status species, including CRLF.</li></ul> |
| <b>References</b>                       | <ul style="list-style-type: none"><li>• Flood Control MP, TM No. 5: Evaluation of Problem Areas &amp; Identification of Solutions, West Yost &amp; Associates, November 2001</li><li>• City of Livermore General Plan 2003-2005, February 2004</li></ul>             |

R2-2

Arroyo Seco Improvements



Project Location

|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Project Number</b>                   | R2-3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Project Name</b>                     | Arroyo Seco Trail Project                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Project Location</b>                 | Along Arroyo Seco from Charlotte Way to First Street (STA 130+00 to 30+00)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Purpose</b>                          | Create a system of regional trails.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Project Components</b>               | <ol style="list-style-type: none"> <li>1. Upgrade 6,000 feet of maintenance road to trail along Arroyo Seco (STA 105+00 to 45+00).</li> <li>2. Conduct bike trail touch-ups on existing bike trails along Arroyo Seco from the first to the second Charlotte Way crossings (STA 130+00 to 110+00).</li> <li>3. Construct a cantilever bridge to route the Arroyo Seco trail over the railroad tracks.</li> <li>4. Install two signs for safety at each side of the cantilever bridge.</li> <li>5. Construct a cantilever bridge over Re-aligned Arroyo las Positas (STA 0+00) to tie-in to Arroyo Seco trail.</li> <li>6. Acquire approximately 0.35 acres of land for bike trail touch-ups (2,000 feet x 8 feet).</li> </ol> |
| <b>Capital Cost Estimate</b>            | \$1,650,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Implementation Issues</b>            | <ul style="list-style-type: none"> <li>• Coordinate with Southern Pacific to obtain permissions to cross railroad right of way (ROW).</li> <li>• Coordination with LARPD, the City of Livermore and other agencies with responsibility over public safety.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Project Precursors</b>               | <ul style="list-style-type: none"> <li>• Develop liability and use agreement for use existing maintenance roads as trails.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Project Benefits</b>                 | <ul style="list-style-type: none"> <li>• Provides regional trail connectivity.</li> <li>• In combination with the Velocity Control Project R.2-2, provides non-vehicular travel between neighborhoods, transit centers (Altamont Commuter Express Vasco station), and job centers.</li> <li>• Increases public awareness of streams.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Goals/Objectives Addressed</b>       | Flood Protection and Drainage: none<br>Erosion and Sedimentation: none<br>Water Supply: none<br>Water Quality: none<br>Recreation, Trails, and Public Education: C, D, F, G                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Maintenance Activities</b>           | <ul style="list-style-type: none"> <li>• Trail Maintenance: <ul style="list-style-type: none"> <li>• Conduct annual inspection of trails.</li> <li>• Seal cracks and repair pavement on trails, as needed.</li> <li>• Clear debris and vegetation growth, as needed.</li> <li>• Repair signs and structures, as needed.</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Annual Maintenance Cost Estimate</b> | \$30,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

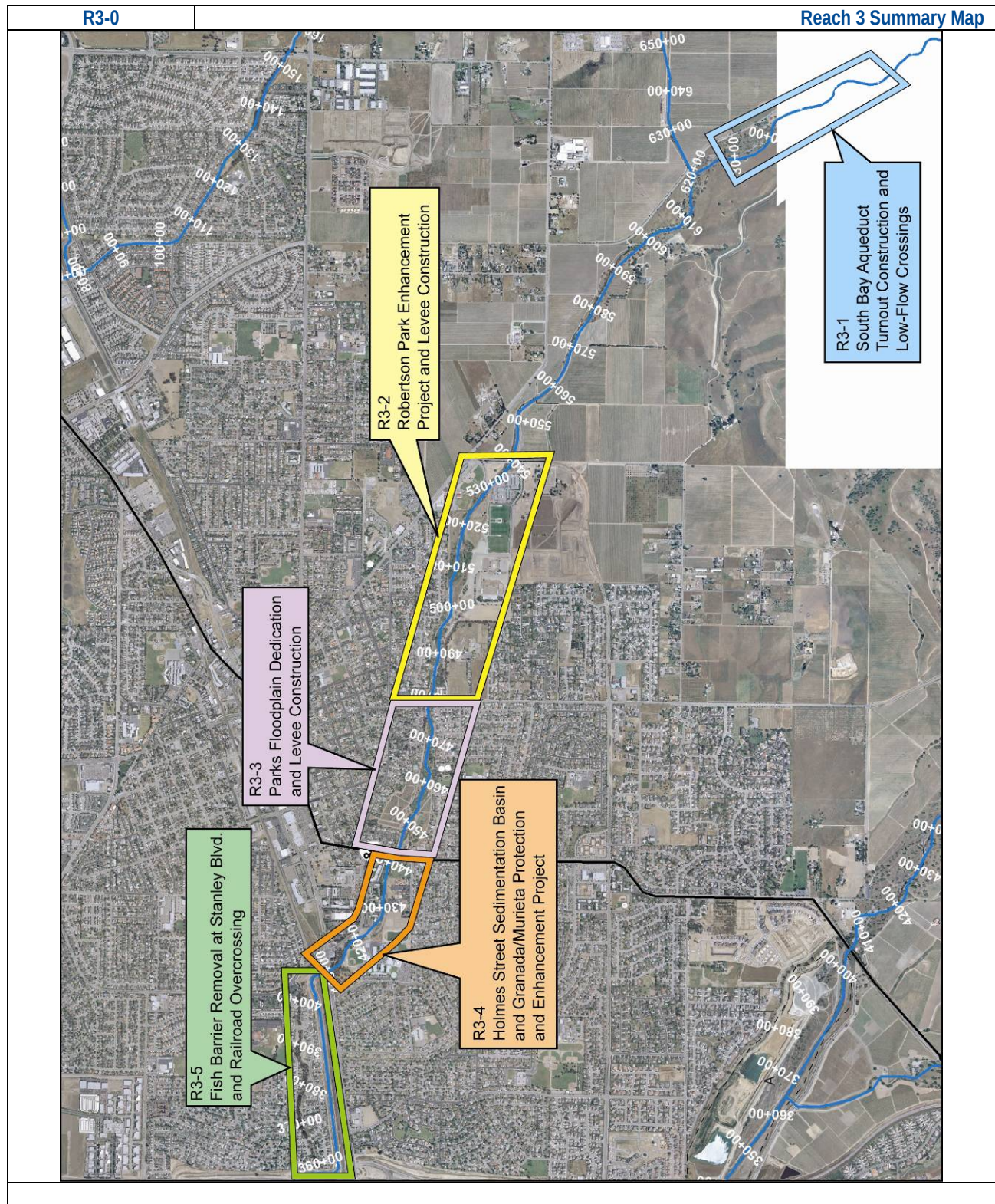
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| <b>Notes</b>      | <ul style="list-style-type: none"><li>• Construction of the trail section along Arroyo Seco, from the Arroyo Vista Bridge to the First Street Bridge should be coordinated with Arroyo Seco Bridge Improvement project R.2-4.</li><li>• Trails should be designed to be ADA compliant in order to qualify for grant money available for trails development.</li><li>• Evaluate possibility of establishing a signaled crossing across the railroad tracks.</li></ul> |
| <b>References</b> | <ul style="list-style-type: none"><li>• Arroyo Management Plan, Kent Watson &amp; Associates, March 1985</li><li>• Flood Control MP, TM No. 5: Evaluation of Problem Areas &amp; Identification of Solutions, West Yost &amp; Associates, November 2001</li><li>• City of Livermore Bikeways and Trails Master Plan, Wilbur Smith Associates, December 11, 2001</li></ul>                                                                                            |

R2-3

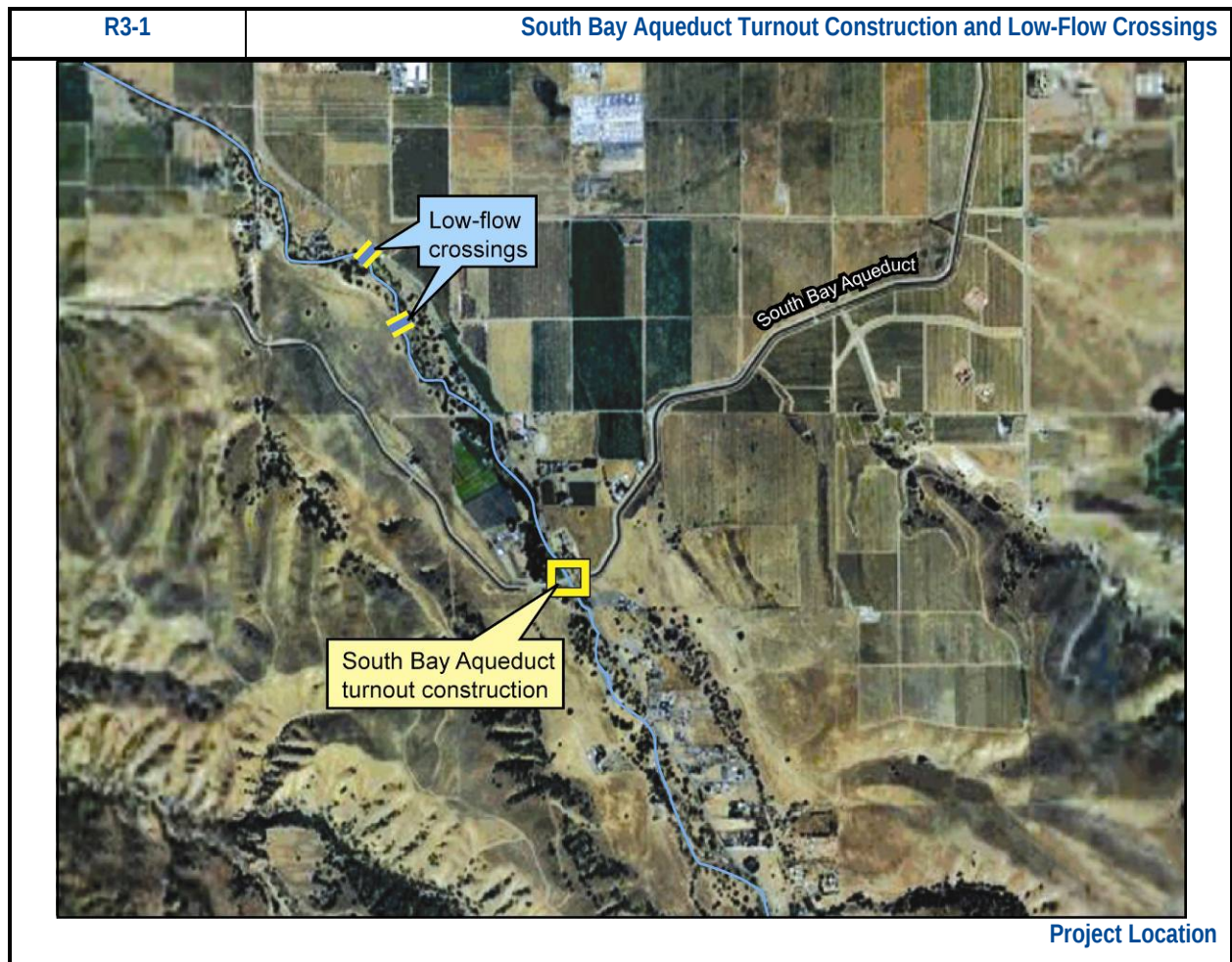
Arroyo Seco Trail Project



Project Location



|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Project Number</b>                   | R3-1                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Project Name</b>                     | South Bay Aqueduct Turnout Construction and Low-Flow Crossings                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Project Location</b>                 | Arroyo Mocho from the South Bay Aqueduct (SBA) to STA 636+00                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Purpose</b>                          | This project proposes to increase groundwater recharge along Arroyo Mocho by constructing a turnout to transfer water from the SBA. The project also includes construction of two low-flow crossings along Arroyo Mocho.                                                                                                                                                                                                                                        |
| <b>Project Components</b>               | <ol style="list-style-type: none"> <li>1. Construction of SBA turnout (STA 672+00)</li> <li>2. Replace existing low-flow crossing (residential driveway) at 3949 Mines Road with an elevated ford design crossing (approximately 100 feet by 12 feet in width)</li> <li>3. Replace existing low-flow crossing (residential driveway) at 4351 Mines Road with an elevated ford design or clear span crossing (design and dimensions to be determined)</li> </ol> |
| <b>Capital Cost Estimate</b>            | \$1,230,000                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Implementation Issues</b>            | <ul style="list-style-type: none"> <li>• Coordination with the Department of Water Resources</li> <li>• Potential permitting issues for compliance with Clean Water Act Sections 401/404</li> <li>• Coordination with residents for driveway replacement</li> </ul>                                                                                                                                                                                             |
| <b>Project Precursors</b>               | Hydraulic/hydrologic modeling and capacity studies                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Project Benefits</b>                 | <ul style="list-style-type: none"> <li>• Provides additional flexibility for the Zone 7 Stream Recharge Program</li> <li>• Provides additional capacity to accommodate water from the SBA</li> <li>• Incorporates public outreach and education component</li> </ul>                                                                                                                                                                                            |
| <b>Goals/Objectives Addressed</b>       | Flood Protection and Drainage: none<br>Erosion and Sedimentation: none<br>Water Supply: B, E, F<br>Water Quality: none<br>Habitat & Environment: A<br>Recreation, Trails, and Public Education: none                                                                                                                                                                                                                                                            |
| <b>Maintenance Activities</b>           | <ul style="list-style-type: none"> <li>• Inspect SBA turnout annually</li> <li>• Conduct annual routine maintenance activities including crossing maintenance, and debris removal</li> </ul>                                                                                                                                                                                                                                                                    |
| <b>Annual Maintenance Cost Estimate</b> | \$35,000                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Notes</b>                            | Arroyo Mocho contributes significantly to groundwater recharge, especially downstream of the intersection with the SBA. Arroyo Mocho will be increasingly used as a recharge channel as part of the Zone 7 Artificial Stream Recharge Program.                                                                                                                                                                                                                  |
| <b>References</b>                       | <ul style="list-style-type: none"> <li>• Personal communication with David Lunn, Zone 7 Water Agency, 2003</li> <li>• Email communication with Matt Katen, Zone 7 Water Agency, 2005</li> </ul>                                                                                                                                                                                                                                                                 |

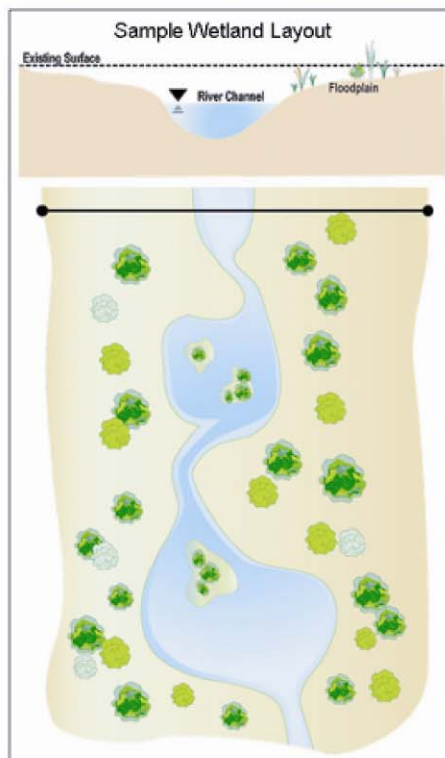
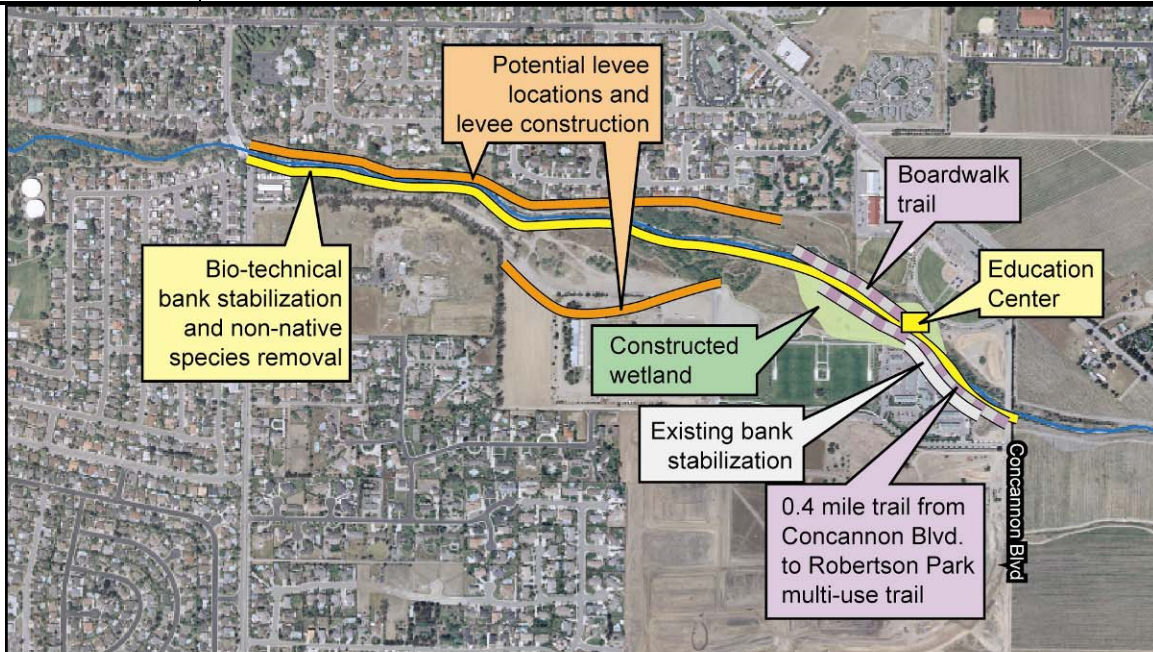


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|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Project Number</b>        | R3-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Project Name</b>          | Robertson Park Enhancement Project and Levee Construction                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Project Location</b>      | Robertson Park at Arroyo Mocho from Concannon Blvd. to Arroyo Road (STA 540+00 to 480+00)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Purpose</b>               | Curtail erosion along Arroyo Mocho by implementing bank stabilization activities. Create wetlands to improve water quality and enhance critical habitat.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Project Components</b>    | <ol style="list-style-type: none"> <li>Construct wetland, including: <ul style="list-style-type: none"> <li>Creation of meandering channel. Meandering channel length is 750 feet or 1.5 times the wetland length (i.e. 500 feet, from STA 520+00 to 525+00).</li> <li>Excavation of up to 8 acres of land to accommodate 100-year flood.</li> <li>Downstream grade control to keep area wet.</li> <li>Breeding/habitat pools.</li> <li>Native trees, brush, and grasses as habitat, shade, and cover for species.</li> </ul> </li> <li>Construct biotechnical bank stabilization measures as needed along 6,000 feet of stream channel between Concannon Blvd and Arroyo Road (STA 540+00 to 480+00).</li> <li>Manage vegetation by removing non-native species along 6,000 feet on both banks of stream, over 8.3 acres between Concannon Blvd and Arroyo Road (STA 540+00 to 480+00).</li> <li>Recreational features include: <ul style="list-style-type: none"> <li>Education center/indoor classroom. The size is estimated to be 1,200 square feet.</li> <li>500 feet of boardwalk trail above wetland.</li> <li>0.40 mile trail to link the existing Concannon Blvd. trail to the existing Robertson Park multi-use trail along Arroyo Mocho. Trail will link east of Arroyo Mocho to existing pedestrian/bike bridge over Arroyo Mocho, east of the Concannon Blvd. Bridge.</li> </ul> </li> <li>Build levees, including: <ul style="list-style-type: none"> <li>3,500 feet of levee along the north bank (STA 515+00 to 480+00).</li> <li>1,000 feet of levee along the south bank (STA 510+00 to 500+00).</li> </ul> </li> <li>Dedicate approximately 35 acres of land within levees as 100-year floodplain park/open space to prevent development within floodplain. Area is 100-year floodplain within the levees between Concannon Blvd and Arroyo Road (STA 540+00 to 480+00).</li> </ol> |
| <b>Capital Cost Estimate</b> | \$28,040,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Implementation Issues</b> | <ul style="list-style-type: none"> <li>Diversion of flow or stop artificial flow during construction period</li> <li>Wetland space requirements</li> <li>Permitting in compliance with Clean Water Act Sections 401/404</li> <li>Coordination with RWQCB, CDFG, LARPD, County Mosquito Abatement District, and local property owners</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Project Precursors</b>    | <ul style="list-style-type: none"> <li>Hydrologic/hydraulic modeling</li> <li>Identify ongoing funding sources for educational programs and public outreach</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Project Benefits</b>      | <p>Constructed wetland</p> <ul style="list-style-type: none"> <li>Improves water quality.</li> <li>Creates habitat opportunities for California red legged frog, California tiger salamander, and western pond turtle.</li> <li>Provides flood detention.</li> </ul> <p>Bank stabilization</p> <ul style="list-style-type: none"> <li>Creates habitat opportunities for California red legged frog, California tiger salamander, and western pond turtle.</li> <li>Reduces local erosion and downstream deposition.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

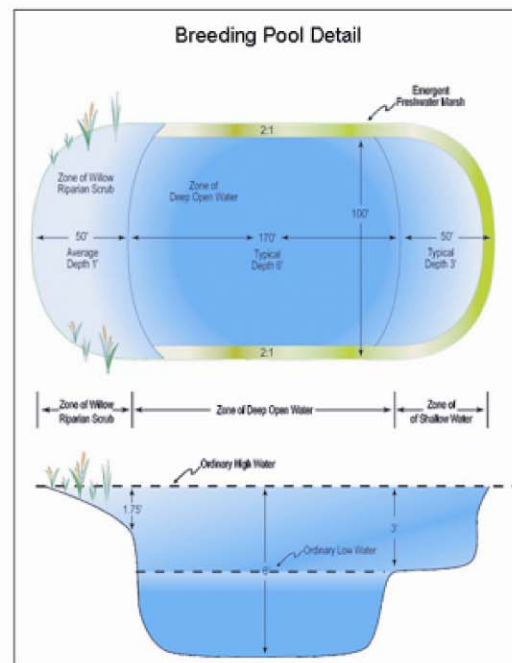
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|                                         | <ul style="list-style-type: none"> <li>Slows bank migration.</li> </ul> <p>Education Center</p> <ul style="list-style-type: none"> <li>Provides an education and public outreach opportunity.</li> </ul> <p>Trail</p> <ul style="list-style-type: none"> <li>Provides regional trail connectivity.</li> </ul> <p>Levee Maintenance</p> <ul style="list-style-type: none"> <li>Conduct annual inspection of site.</li> <li>Conduct repairs of levee, as needed.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Goals/Objectives Addressed</b>       | <p>Flood Protection and Drainage: A, B, C, D, E</p> <p>Erosion and Sedimentation: A</p> <p>Water Supply: none</p> <p>Water Quality: B, C, E, F</p> <p>Habitat &amp; Environment: A, B, C, D, E, F</p> <p>Recreation, Trails, and Public Education: A, B, C, D, G</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Maintenance Activities</b>           | <p>Maintenance of wetlands:</p> <ul style="list-style-type: none"> <li>Conduct annual visual estimates of vegetative cover and species composition to estimate vegetative cover, species diversity, presence or absence of target and invasive species, and general abundance of individual plant species. Identify species survival rate.</li> <li>Replace wetland vegetation, as needed, to maintain at least 50% surface area coverage after second growing season.</li> <li>Conduct hand weeding of exotic plant species during the first three years to ensure there is no interference with the development and establishment of target wetland plant species.</li> <li>Conduct annual routine maintenance activities including access road maintenance, and debris removal.</li> </ul> <p>Maintenance of bank stabilization measures:</p> <ul style="list-style-type: none"> <li>Conduct annual inspection of site.</li> <li>Conduct repairs of bank stabilization measures, as needed.</li> </ul> <p>Maintenance of trails:</p> <ul style="list-style-type: none"> <li>Conduct annual inspection of trails.</li> <li>Seal cracks and repair pavement on trails, as needed.</li> <li>Clear debris and vegetation growth, as needed.</li> <li>Repair signs and structures, as needed.</li> </ul> |
| <b>Annual Maintenance Cost Estimate</b> | \$511,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Notes</b>                            | <ul style="list-style-type: none"> <li>Coordination with the City of Livermore and LARPD on project implementation and trails funding.</li> <li>The education center/indoor classroom will be similar to size/function of that at Tyson Lagoon/Tule Pond in Fremont.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>References</b>                       | <ul style="list-style-type: none"> <li>Arroyo Mocho &amp; Arroyo Las Positas Management Plans: Initial Findings and Recommendations, Philip Williams &amp; Associates Ltd., December 8, 2000</li> <li>Joyce Blueford, Ph.D Geologist – Instructor for Tule Pond Workshops, 2003</li> <li>City of Livermore Bikeways and Trails Master Plan, Wilbur Smith Associates, December 11, 2001</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

R3-2

## Robertson Park Enhancement Project and Levee Construction



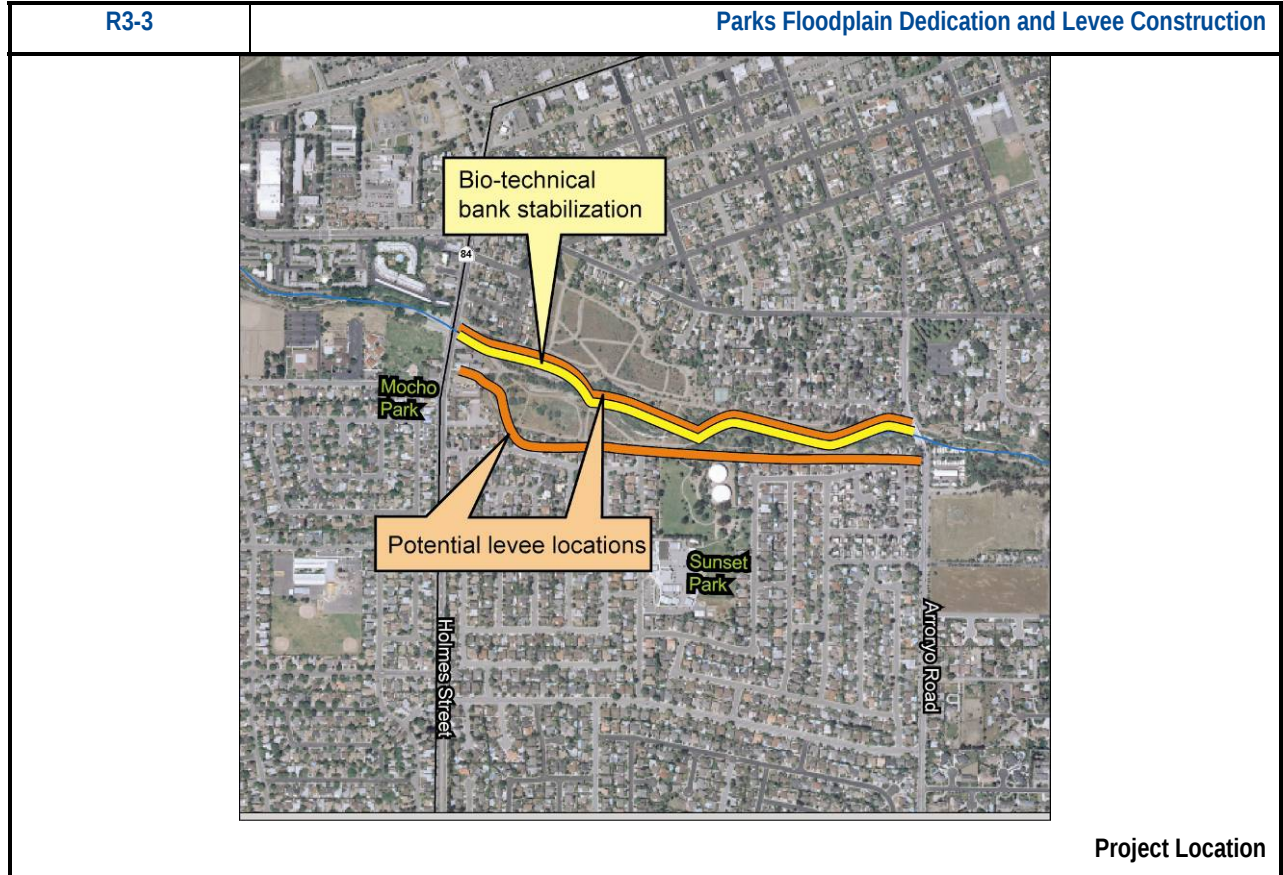
## Wetland Details



Project Location and Schematic

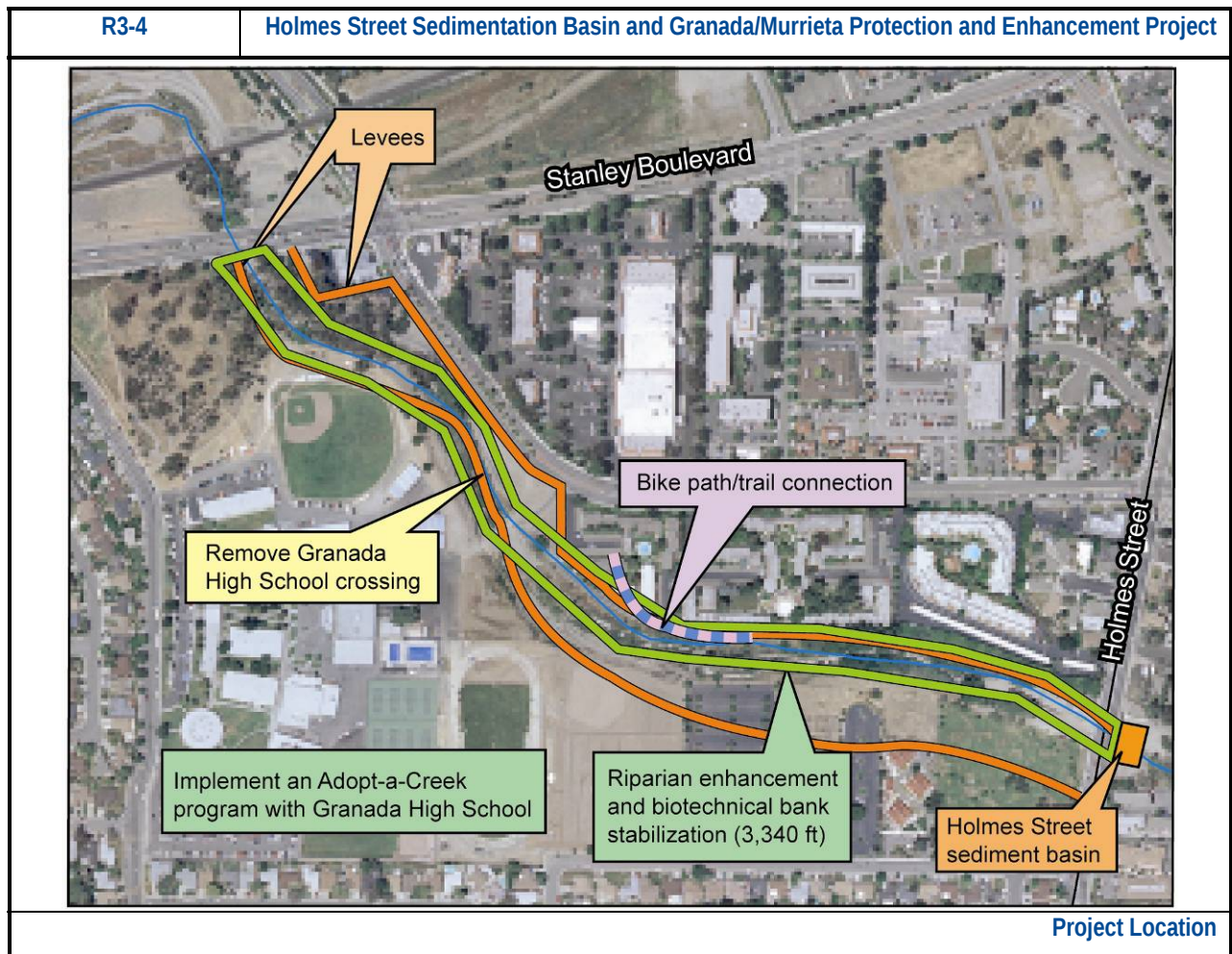
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|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Project Number</b>                   | R3-3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Project Name</b>                     | Parks Floodplain Dedication and Levee Construction                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Project Location</b>                 | Arroyo Mocho from Arroyo Road to upstream of Holmes Street (i.e. between STA 480+00 and 443+40); Along Chain of Parks including Madeiros Parkway, and Mocho Park.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Purpose</b>                          | Dedicate floodplain to attenuate 100-year flood flows at build-out conditions. Protect existing development from 100-year flood event.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Project Components</b>               | <ol style="list-style-type: none"> <li>1. Dedicate approximately 36 acres of land within levees as 100-year floodplain park/open space to prevent development within floodplain. Floodplain extends from STA 480+00 to 443+00 between levees.</li> <li>2. Levees construction includes: <ul style="list-style-type: none"> <li>• 3,660 feet of levees (along south bank from STA 480+00 to 443+40; and along north bank from STA 480+00 to 443+40) to protect existing development.</li> <li>• Rerouting of 3,660 feet of maintenance road (especially emergency access routes) to be outside of flood area.</li> <li>• Revegetation of levees with native species along 3,660 feet of levees, on each bank, over 5 acres.</li> </ul> </li> <li>3. Construct bio-technical bank stabilization measures as needed from Arroyo Road to just upstream of Holmes Street along 3,660 feet of stream channel (STA 480+00 to 443+40).</li> </ol> |
| <b>Capital Cost Estimate</b>            | \$18,860,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Implementation Issues</b>            | Coordination with the City of Livermore, LARPD, and property owners.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Project Precursors</b>               | <ul style="list-style-type: none"> <li>• Coordinate with the City of Livermore to obtain and review the updated General Plan Land use.</li> <li>• Conduct hydraulic/hydrologic modeling under updated build-out conditions.</li> <li>• Robertson Park Enhancement Project and Levee Construction (R.3-2)</li> <li>• Holmes Street Sedimentation Basin and Granada/Murrieta Protection and Enhancement Project (R.3-4)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Project Benefits</b>                 | <ul style="list-style-type: none"> <li>• Attenuates flood flow</li> <li>• Provides healthy ecosystem by providing a continuous riparian corridor</li> <li>• Limits land use change, maintains open space</li> <li>• Since most of build-out flooding would occur within park boundaries the need for levees would be minimal if development within the parks was not allowed.</li> <li>• Earthen levees can be planted and become part of the park features and boundaries</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Goals/Objectives Addressed</b>       | Flood Protection and Drainage: A, B, C, D, E<br>Erosion and Sedimentation: A<br>Water Supply: none<br>Water Quality: none<br>Habitat & Environment: B, C<br>Recreation, Trails, and Public Education: none                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Maintenance Activities</b>           | Maintenance of bank stabilization measures: <ul style="list-style-type: none"> <li>• Conduct annual inspection of site.</li> <li>• Conduct repairs of bank stabilization measures, as needed.</li> </ul><br>Levee Maintenance <ul style="list-style-type: none"> <li>• Conduct annual inspection of site.</li> <li>• Conduct repairs of levee, as needed.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Annual Maintenance Cost Estimate</b> | \$223,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Notes</b>                            | <ul style="list-style-type: none"> <li>• Floodplain dedication can be done after modeling. Levee construction should be done after upstream and downstream projects.</li> <li>• Levee construction may not be necessary if build-out floodplain is within park boundaries</li> <li>• Levee construction will be necessary only to protect properties at build-out flood</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

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|                   | conditions <ul style="list-style-type: none"><li>• Levees may impact upstream and downstream flooding conditions</li></ul> |
| <b>References</b> | -                                                                                                                          |



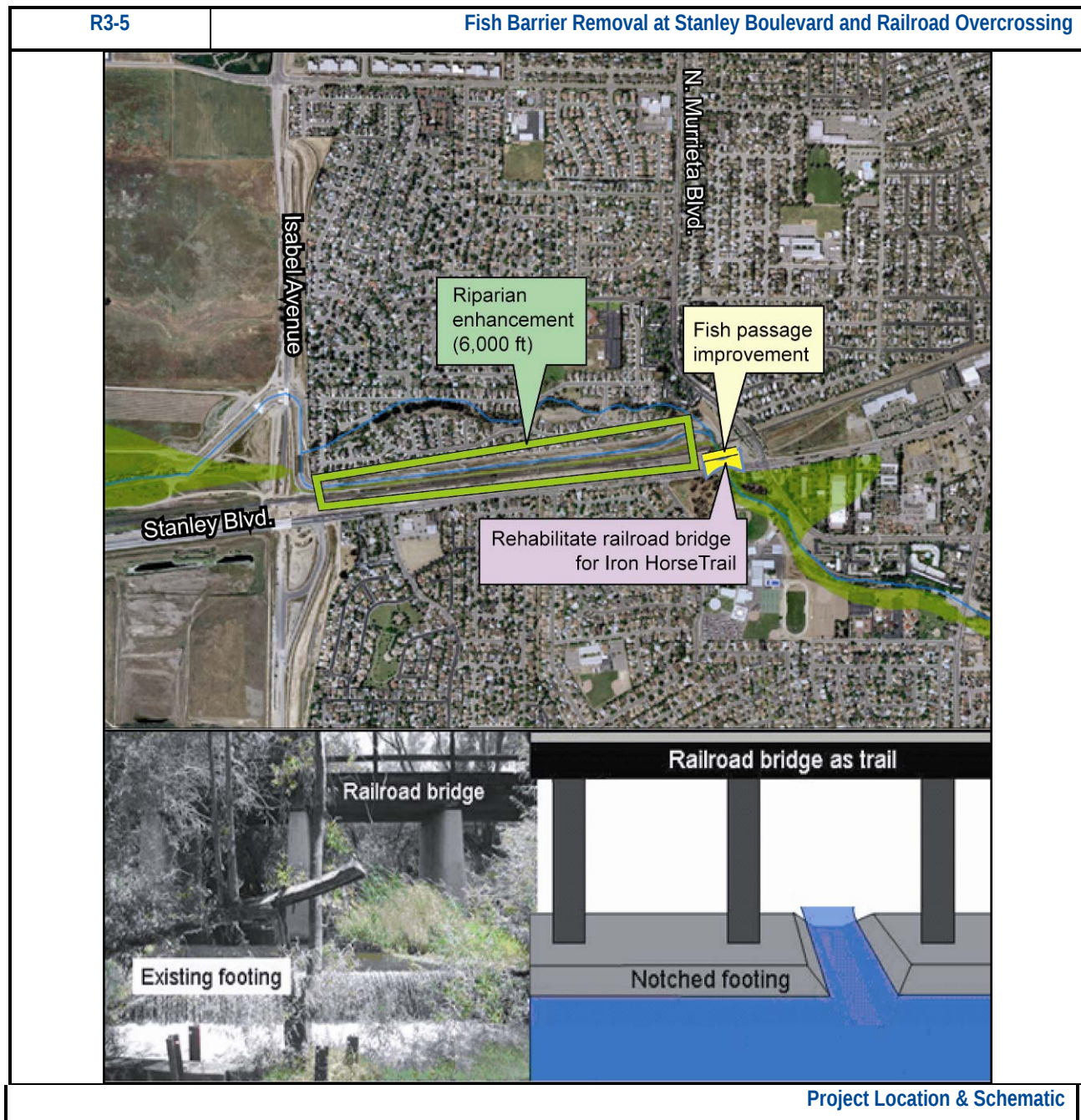
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| <b>Project Number</b>             | R3-4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Project Name</b>               | Holmes Street Sedimentation Basin and Granada/Murrieta Protection and Enhancement Project                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Project Location</b>           | Arroyo Mocho from immediately upstream of Holmes Street Bridge crossing to Stanley Blvd (STA 443+40 to STA 410+00)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Purpose</b>                    | The purpose of this project is to curtail aggradation of Arroyo Mocho by trapping the sediment loads in a sediment basin, to protect existing development from 100-year flood event through levee construction, and provide connectivity between regional trails.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Project Components</b>         | <ol style="list-style-type: none"> <li>1. Construct a sedimentation basin just upstream of Holmes Street between STA 443+40 and 440+00 on Arroyo Mocho. The estimated size is 1.9 AF. Project includes creation of 0.95 acres of wetlands as environmental mitigation for sediment basin construction.</li> <li>2. Levees construction includes: <ul style="list-style-type: none"> <li>• 3,340 feet of levees along the north and south banks of Arroyo Mocho from Holmes Street to Stanley Blvd (STA 443+40 to STA 410+00).</li> <li>• Routing of approximately 0.1 miles of trail along top of northern levee until existing trail separates from levee alignment (STA 430+00 to 425+00).</li> </ul> </li> <li>3. Dedicate approximately 25 acres of land within levees as 100-year floodplain park/open space to prevent development within floodplain. Area is floodplain between levees from Holmes Street to Stanley Blvd (STA 443+40 to 410+00).</li> <li>4. Conduct approximately 3,340 feet of riparian enhancement along both banks of Arroyo Mocho from the Holmes Street sedimentation basin to Stanley Blvd, including along levees. Incorporate bio-technical bank stabilization measures (approximately 4.6 acres).</li> <li>5. Remove existing Granada High School crossing which is a potential fish barrier. Replace existing crossing with a pedestrian bridge.</li> </ol> |
| <b>Capital Cost Estimate</b>      | \$13,590,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Implementation Issues</b>      | <ul style="list-style-type: none"> <li>• Cost/Benefit ratio needs to be analyzed</li> <li>• Permitting in compliance with Clean Water Act Section 401/404</li> <li>• Coordination with RWQCB, CDFG, City of Livermore, Livermore school system, and the County Mosquito Abatement District</li> <li>• Levee aesthetics</li> <li>• Safety issues associated with the levees</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Project Precursors</b>         | <ul style="list-style-type: none"> <li>• Model sediment transport characteristics for Holmes Street bridge.</li> <li>• City of Livermore General Plan</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Project Benefits</b>           | <ul style="list-style-type: none"> <li>• Reduce maintenance costs for sediment removal</li> <li>• Reduce flooding potential at Holmes Street bridge crossing</li> <li>• Improved regional trail connectivity due to less deposition on bike path</li> <li>• Improved habitat conditions around Holmes Street bridge and along Mocho</li> <li>• Removes Murrieta Plaza businesses and potentially hospital and support buildings from floodplain</li> <li>• Removes fish migration blockage at current Granada High School crossing</li> <li>• Aesthetically enhances a well-traveled road and trail</li> <li>• Provides educational opportunities through Adopt-a-Creek and the Outdoor Classroom</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Goals/Objectives Addressed</b> | Flood Protection and Drainage: A, B, C, D, E<br>Erosion and Sedimentation: A, C<br>Water Supply: none<br>Water Quality: C, E, F<br>Habitat & Environment: A, B, C, E, F<br>Recreation, Trails, and Public Education: A, B, C, D, E, G                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Maintenance Activities</b>     | Maintenance of Sediment Basin: <ul style="list-style-type: none"> <li>• Conduct field inspections of the sediment basin.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

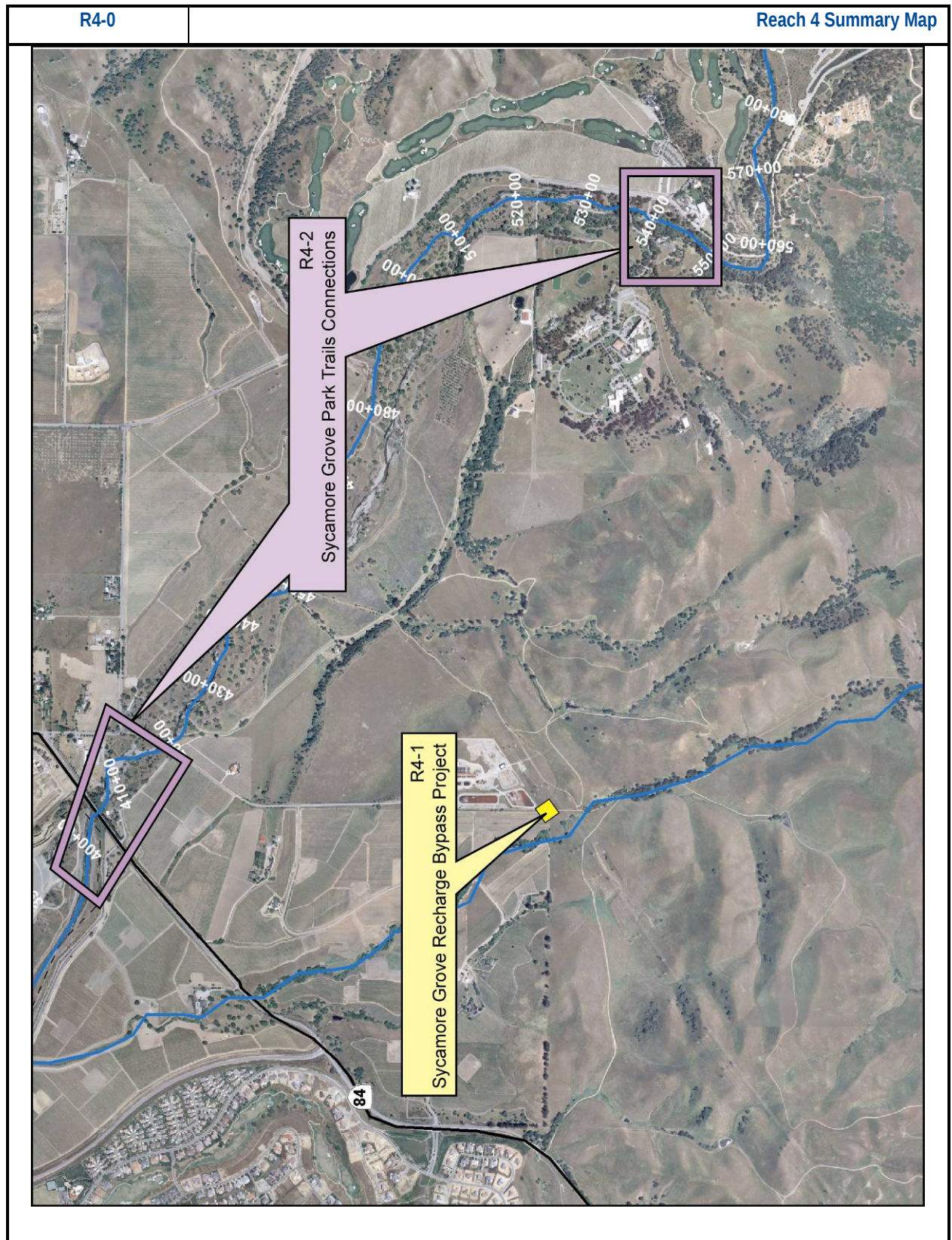
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|                                         | <ul style="list-style-type: none"> <li>• Conduct sediment sampling prior to sediment removal and prepare Sediment Characterization Report.</li> <li>• If desilting activities are conducted in a "wet stream", conduct water quality sampling prior to and after sediment removal. Prepare a Water Quality Sampling Plan.</li> <li>• Dewater site if desilting activities are conducted in a "wet stream". Conduct desilting activities.</li> <li>• Store and transport dredged material to an off-site landfill facility.</li> <li>• Conduct mitigation for sediment removal activities.</li> </ul> <p>Vegetation Maintenance:</p> <ul style="list-style-type: none"> <li>• Conduct annual inspection of planted riparian vegetation.</li> <li>• Conduct maintenance of riparian vegetation by utilizing a combination of methods including hand removal, mechanical or chemical clearing. The annual maintenance cost estimate is based on chemical clearing of invasive species which includes conducting a biological survey and implementing a water quality sampling plan.</li> <li>• Collect and dispose of vegetation debris.</li> </ul> <p>Levee Maintenance</p> <ul style="list-style-type: none"> <li>• Conduct annual inspection of site.</li> <li>• Conduct repairs of levee, as needed.</li> </ul>                                                                                                                                                                                                                                                                                    |
| <b>Annual Maintenance Cost Estimate</b> | \$213,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Notes</b>                            | <ul style="list-style-type: none"> <li>• Bed load source needs to be determined through sediment transport modeling. If it is further upstream then the upstream sedimentation basin could provide a short term solution.</li> <li>• Benefit/cost analysis needs to be complete for all options to determine whether additional cost yields additional benefit and over what time frame.</li> <li>• Sediment removal upstream of Holmes Street is currently conducted by the City of Livermore. According to Mr. Richard Frazer, from the City of Livermore, the City dredges the channel once every other year or every year depending on the frequency of rain storms. On average, they dredge approximately 800 to 1,000 CY although they have removed up to 1,500 CY of sediment from the stream.</li> <li>• Alternatives to sediment basins such as offline ponds with habitat bypass channels, wetlands, floodplain benches, and in-line pools can be considered as part of the pre-design phase.</li> <li>• LARPD would manage an Adopt-a-Creek program with Granada High School.</li> <li>• Friends of the Arroyos (FOTA) completed the 1-acre native vegetation park in Spring 2004. Related efforts should be coordinated.</li> <li>• The Granada High School crossing will be removed, but not replaced at the request of the School District which is gating off of the high school's back entrance, and "closing" the campus at lunch time.</li> <li>• The culvert crossing at Stanley Blvd is under capacity and can be improved as an alternative to constructing levees.</li> </ul> |
| <b>References</b>                       | <ul style="list-style-type: none"> <li>• Arroyo Mocho &amp; Arroyo Las Positas Management Plans: Initial Findings and Recommendations, Philip Williams &amp; Associates Ltd., December 8, 2000</li> <li>• Personal communication with Mr. Richard Frazer, City of Livermore (June 10, 2004)</li> <li>• Personal communication with Louann Tung, FOTA, 2003</li> <li>• Personal communication with Carol Mahoney, Zone 7 Water Agency, 2003</li> <li>• Personal communication with Matt Katen, Zone 7 Water Agency, 2004 and 2005</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |



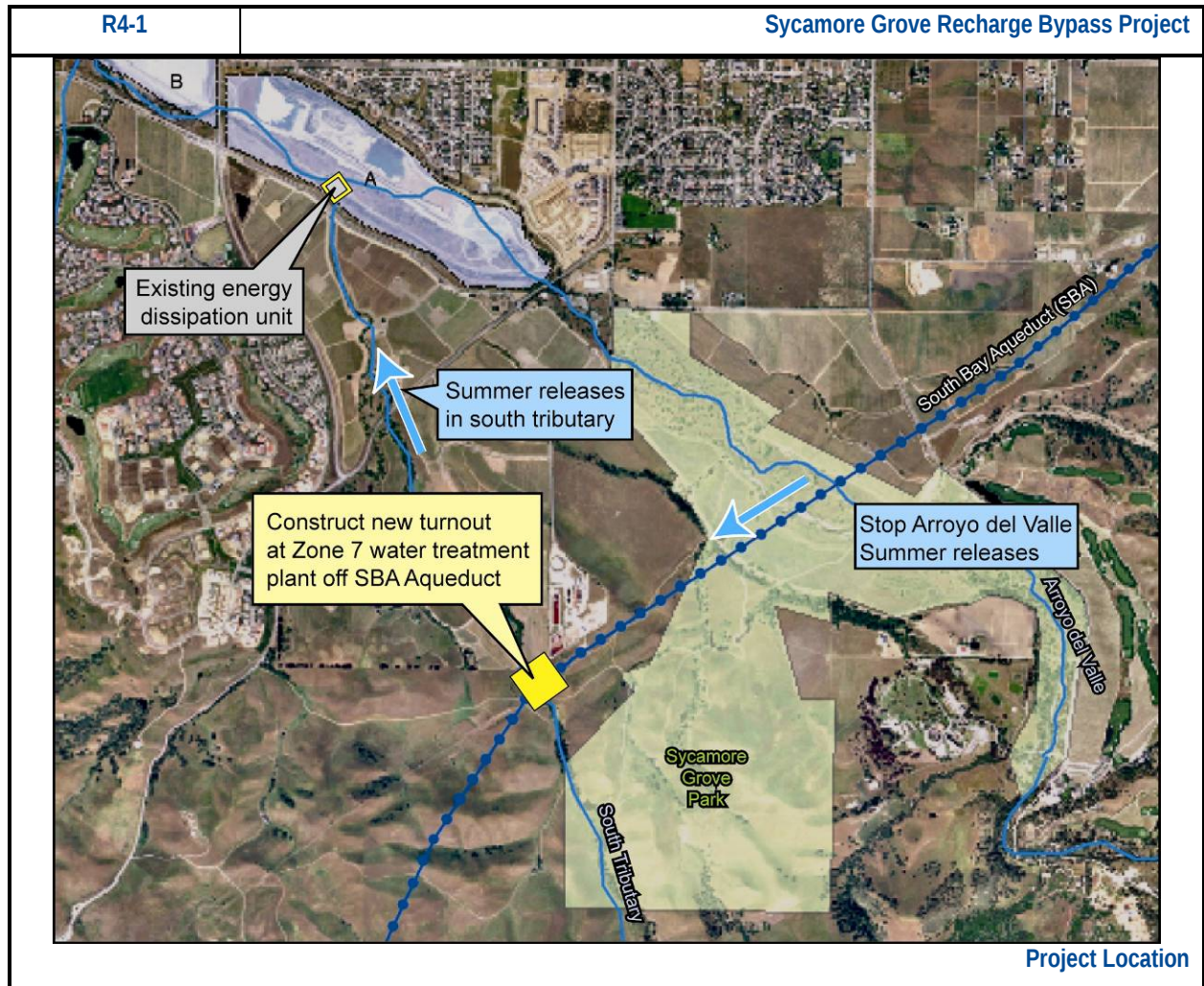
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| <b>Project Number</b>                   | R3-5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Project Name</b>                     | Fish Barrier Removal at Stanley Boulevard and Railroad Overcrossing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Project Location</b>                 | Arroyo Mocho at the abandoned railroad Right-of-Way (ROW) crossing to Isabel Avenue (STA 409+00 to 350+00)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Purpose</b>                          | Arroyo Mocho has been identified as a future corridor for steelhead migration. The purpose of this project is to restore Arroyo Mocho as a fish migration corridor by removing a fish barrier at the abandoned railroad ROW crossing near Stanley Blvd (STA 409+00), and improving riparian habitat along Arroyo Mocho from Stanley Blvd to Isabel Avenue.                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Project Components</b>               | <ol style="list-style-type: none"> <li>1. Modify railroad bridge footing for fish passage purposes. Modification will include removal of a portion of concrete slab and addition of appropriate energy dissipation features (STA 409+00).</li> <li>2. Rehabilitate abandoned railroad bridge as part of Iron Horse Trail (STA 409+00).</li> <li>3. Conduct approximately 6,000 feet of riparian enhancement along both banks of realigned Mocho (flood control channel) from Stanley Blvd to the Isabel Bridge crossing (approximately 8.3 acres).</li> </ol>                                                                                                                                                                                                                                                                      |
| <b>Capital Cost Estimate</b>            | \$7,870,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Implementation Issues</b>            | <ul style="list-style-type: none"> <li>• Cost/Benefit ratio needs to be analyzed</li> <li>• Coordination with Southern Pacific Railroad, LARPD, Caltrans, CDFG, RWQCB</li> <li>• Permitting in compliance with Clean Water Act Section 401/404</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Project Precursors</b>               | Analysis of structural needs of the railroad bridge and feasibility of removing a section of the footing.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Project Benefits</b>                 | <ul style="list-style-type: none"> <li>• Relieve major fish barrier along Arroyo Mocho</li> <li>• Alleviates local sediment accumulation</li> <li>• Increases regional connectivity by providing an off-road stream crossing</li> <li>• Improved habitat conditions along Mocho between Stanley Blvd and Isabel Ave</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Goals/Objectives Addressed</b>       | Flood Protection and Drainage: none<br>Erosion and Sedimentation: none<br>Water Supply: none<br>Water Quality: none<br>Habitat & Environment: A, B, C<br>Recreation, Trails, and Public Education: D, G                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Maintenance Activities</b>           | Maintenance of trails: <ul style="list-style-type: none"> <li>• Conduct annual inspection of trails.</li> <li>• Seal cracks and repair pavement on trails, as needed.</li> <li>• Clear debris and vegetation growth, as needed.</li> <li>• Repair signs and structures, as needed.</li> </ul> Vegetation maintenance: <ul style="list-style-type: none"> <li>• Conduct annual inspection of planted riparian vegetation.</li> <li>• Conduct maintenance of riparian vegetation by utilizing a combination of methods including hand removal, mechanical or chemical clearing. The annual maintenance cost estimate is based on chemical clearing of invasive species which includes conducting a biological survey and implementing a water quality sampling plan.</li> <li>• Collect and dispose of vegetation debris.</li> </ul> |
| <b>Annual Maintenance Cost Estimate</b> | \$80,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Notes</b>                            | Other alternatives exist which would remove the migration barrier. These include: <ul style="list-style-type: none"> <li>• Install a Denil fishway or other suitable fish ladder through this reach of Arroyo Mocho. This would involve coordination with the City of Livermore and the ROW owner. This would not provide and trail or recreational use of the location. The cost is estimated to be \$740,000.</li> <li>• Completely remove the abandoned railroad bridge and footing. This would involve coordination with the City of Livermore and the ROW owner. This option</li> </ul>                                                                                                                                                                                                                                       |

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|                   | would preclude trail and recreational use of the bridge. The cost is estimated to be \$1,140,000.                                                                                                                                                                                                           |
| <b>References</b> | <ul style="list-style-type: none"><li>• An Assessment of the Potential for Restoring a Viable Steelhead Trout Population in the Alameda Creek Watershed, Gunther et al., February 7, 2000</li><li>• City of Livermore Bikeways and Trails Master Plan, Wilbur Smith Associates, December 11, 2001</li></ul> |

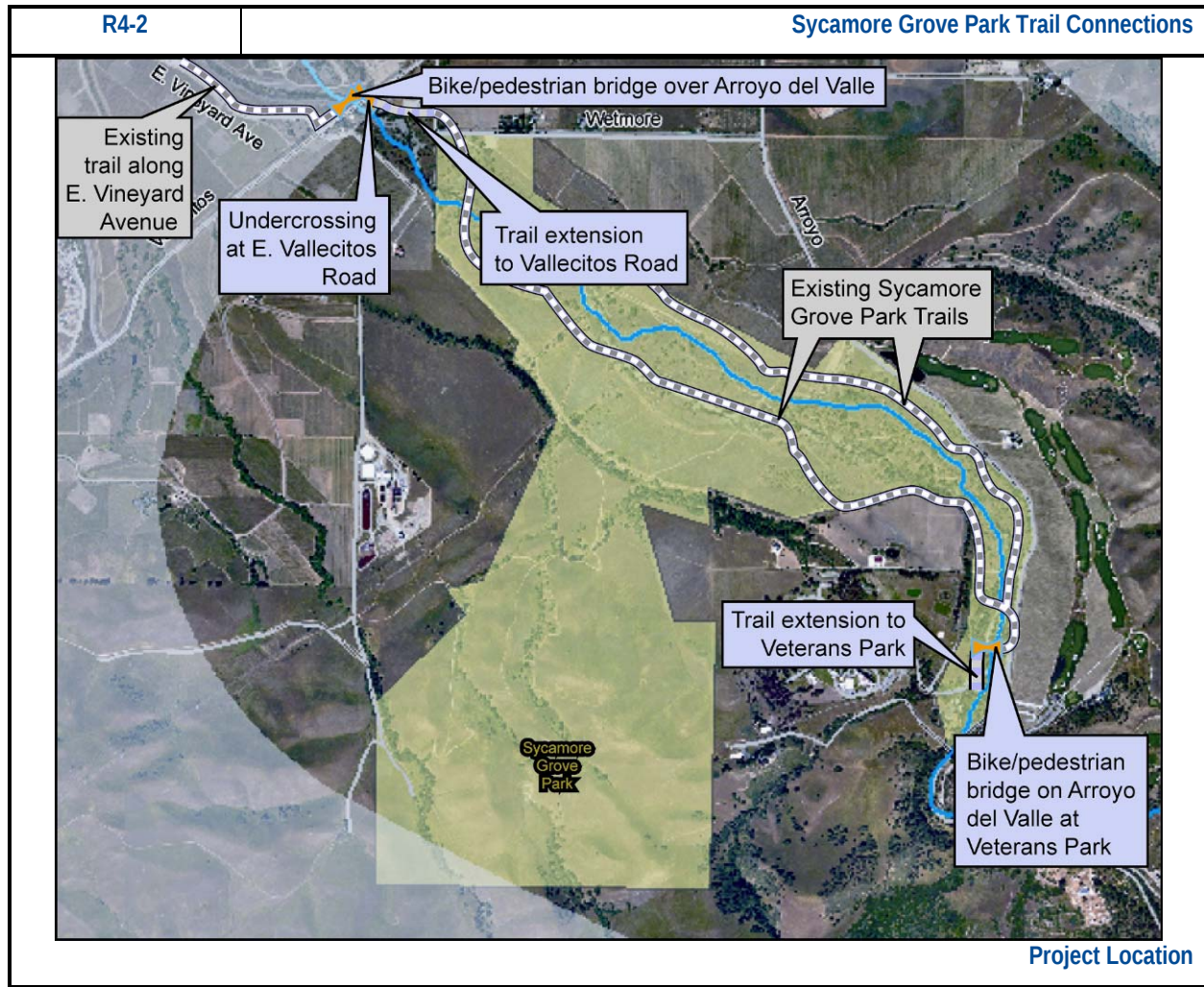


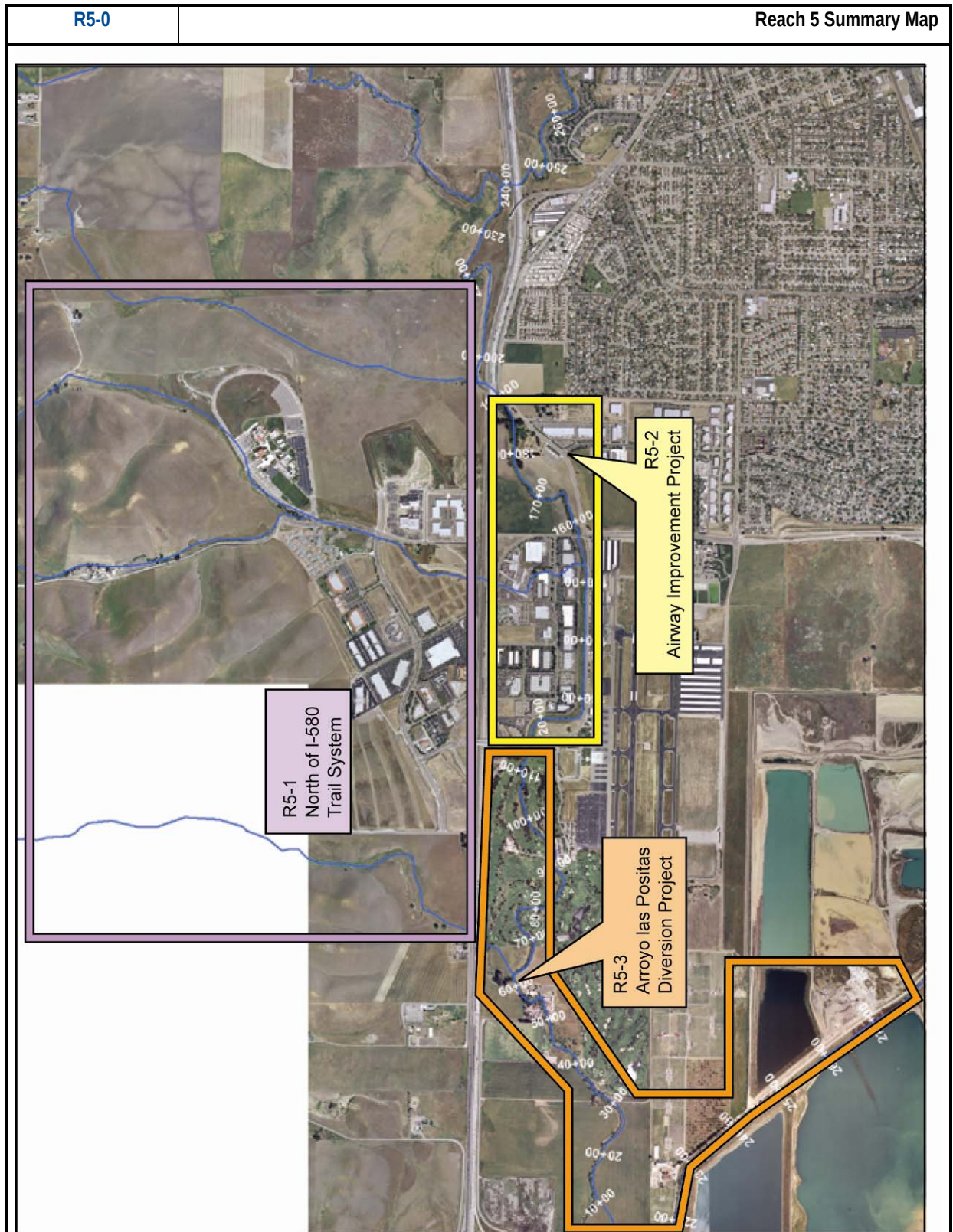


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| <b>Project Number</b>                   | R4-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Project Name</b>                     | Sycamore Grove Recharge Bypass Project                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Project Location</b>                 | Sycamore Grove Park, from the Zone 7 Water Treatment Plant to Lake A.                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Purpose</b>                          | Replace existing summer-time water releases from Del Valle Reservoir into Arroyo del Valle with releases from South Bay Aqueduct (SBA) into South Tributary.                                                                                                                                                                                                                                                                                                                                                            |
| <b>Project Components</b>               | 1. Modify valving of existing blow-up at Zone 7 Water Treatment plant and transform into new SBA turnout.                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Capital Cost Estimate</b>            | \$1,200,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Implementation Issues</b>            | <ul style="list-style-type: none"> <li>• Permitting and coordination with California Department of Fish and Game (CDFG).</li> <li>• Coordination with LARPD.</li> <li>• Potential conflict with beneficial uses associated with current releases from Del Valle Reservoir.</li> <li>• Potential impacts to habitat along South Tributary.</li> </ul>                                                                                                                                                                    |
| <b>Project Precursors</b>               | <ul style="list-style-type: none"> <li>• Completion of Sycamore Grove Recovery Program studies jointly funded by Zone 7 and LARPD.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Project Benefits</b>                 | <ul style="list-style-type: none"> <li>• Provide flexibility in operation of del Valle releases.</li> <li>• Provide flexibility in management of Sycamore Grove Park hydrology.</li> <li>• Provide groundwater recharge.</li> </ul>                                                                                                                                                                                                                                                                                     |
| <b>Goals/Objectives Addressed</b>       | Flood Protection & Drainage: none<br>Erosion and Sedimentation: none<br>Water Supply: A<br>Water Quality: none<br>Habitat & Environment: A, B, F<br>Recreation, Trails, and Public Education: none                                                                                                                                                                                                                                                                                                                      |
| <b>Maintenance Activities</b>           | Turnout Maintenance: <ul style="list-style-type: none"> <li>• Annual inspection of turnout structure and associated appurtenances.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Annual Maintenance Cost Estimate</b> | \$33,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Notes</b>                            | The Sycamore Grove Recovery Program Phase 1 Technical Report initiated by Zone 7 and LARPD was completed in December 2004. The study identified that the main causes of the sycamore decline during the 1980s and 1990s may have been due to coinciding hydrologic and climatic factors. During the period 1985-1993, tree growth was the poorest on record, a pattern that suggests the possibility that the range of natural variability in tree growth has expanded under the modified Arroyo del Valle flow regime. |
| <b>References</b>                       | <ul style="list-style-type: none"> <li>• Sycamore Grove Recovery Program Phase I Technical Report, Preliminary Findings, Sycamore Associates LCC et al., December 22, 2004</li> <li>• Sycamore Grove Park Draft Resources Maintenance Plan, Vol. 1 and 2, Sycamore Associates LLC, May 2002</li> </ul>                                                                                                                                                                                                                  |

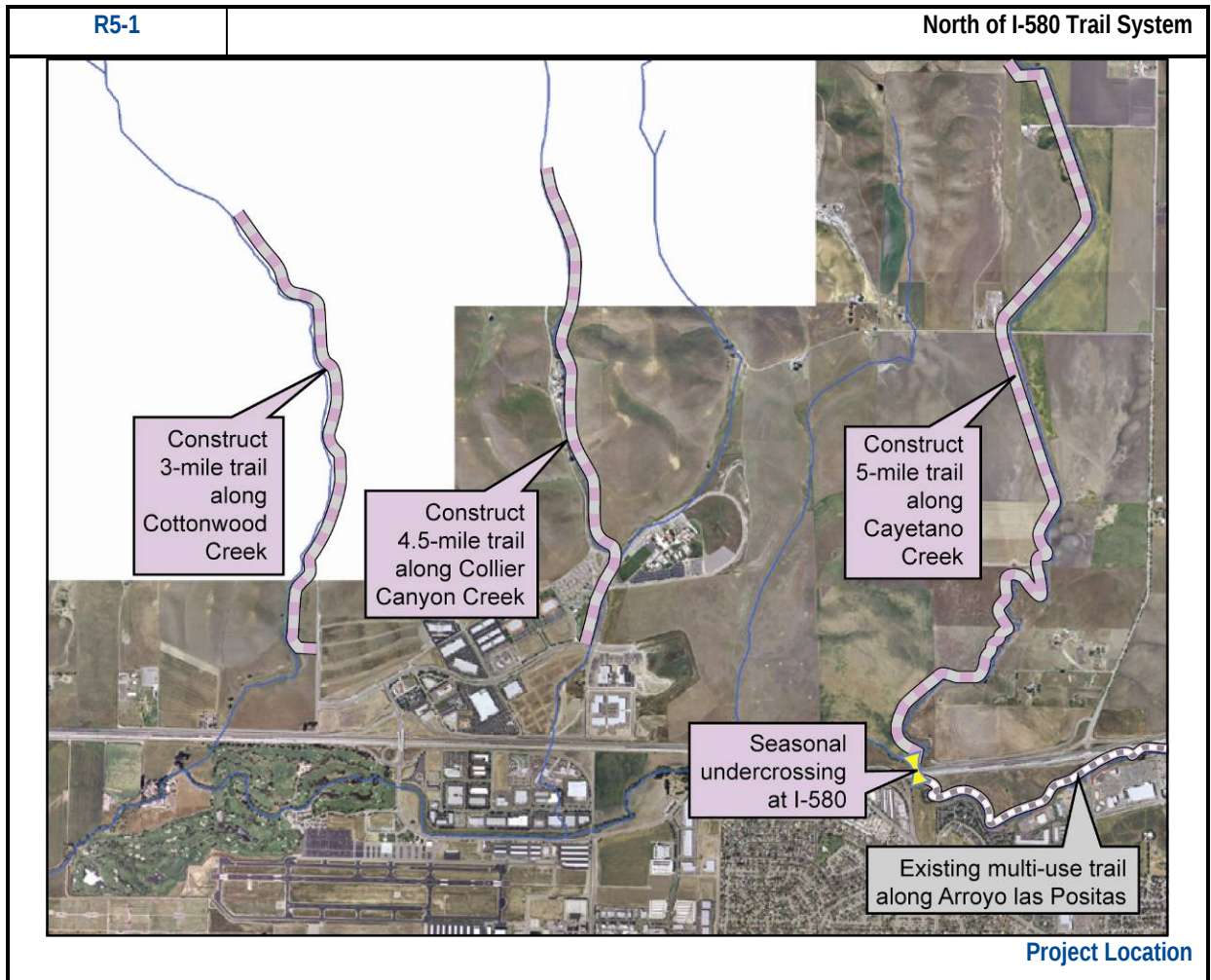


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| <b>Project Number</b>                   | R4-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Project Name</b>                     | Sycamore Grove Park Trail Connections                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Project Location</b>                 | Sycamore Grove Park from Vallecitos Road to Veterans Park                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Purpose</b>                          | Create a system of regional trails by filling in regional trail corridor gaps.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Project Components</b>               | <ol style="list-style-type: none"> <li>1. Link the existing Sycamore Grove Park trail to EBRPD's trail along East Vineyard Avenue by: <ul style="list-style-type: none"> <li>• Constructing a 0.25 mile trail extension of Westmore Road trail to Vallecitos Road.</li> <li>• Constructing a pedestrian bridge (alternatively an undercrossing) at Vallecitos Bridge to cross E. Vallecitos Road.</li> <li>• Adding signage at the E. Vallecitos Road crossing.</li> <li>• Constructing a bike/pedestrian bridge over Arroyo del Valle</li> <li>• Constructing 0.2 mile of trail from bridge to proposed trail along E.Vineyards Avenue from Isabel Parkway to Vallecitos Road.</li> </ul> </li> <li>2. Link the existing Sycamore Grove park trail to Veterans Park by: <ul style="list-style-type: none"> <li>• Construct a bike/pedestrian bridge at Veterans Park.</li> <li>• Construct a trail extension of 0.2 mile from the existing Sycamore Grove Park trail (STA 525+00) to the Veterans Park (STA 535+56).</li> <li>• Adding signage at the Veterans Park road crossing.</li> </ul> </li> <li>3. Acquire approximately 1.5 acres of land for trail construction (3,230 feet x 20 feet).</li> </ol> |
| <b>Capital Cost Estimate</b>            | \$2,260,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Implementation Issues</b>            | Coordination with Caltrans, EBRPD, and LARPD.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Project Precursors</b>               | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Project Benefits</b>                 | Provide connectivity to regional trail system.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Goals/Objectives Addressed</b>       | Flood Protection & Drainage: none<br>Erosion and Sedimentation: none<br>Water Supply: none<br>Water Quality: none<br>Habitat & Environment: none<br>Recreation, Trails, and Public Education: B, C, D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Maintenance Activities</b>           | Trail Maintenance: <ul style="list-style-type: none"> <li>• Conduct annual inspection of trails.</li> <li>• Seal cracks and repair pavement on trails, as needed.</li> <li>• Clear debris and vegetation growth, as needed.</li> <li>• Repair signs and structures, as needed.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Annual Maintenance Cost Estimate</b> | \$29,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Notes</b>                            | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>References</b>                       | <ul style="list-style-type: none"> <li>• City of Livermore Bikeways and trails Master Plan, Wilbur Smith Associates, December 11, 2001</li> <li>• Sycamore Grove Park Draft Resources Maintenance Plan, Vol. 1 and 2, Sycamore Associates LLC, May 2002</li> <li>• Personal communication with City of Livermore, Summer 2003</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |



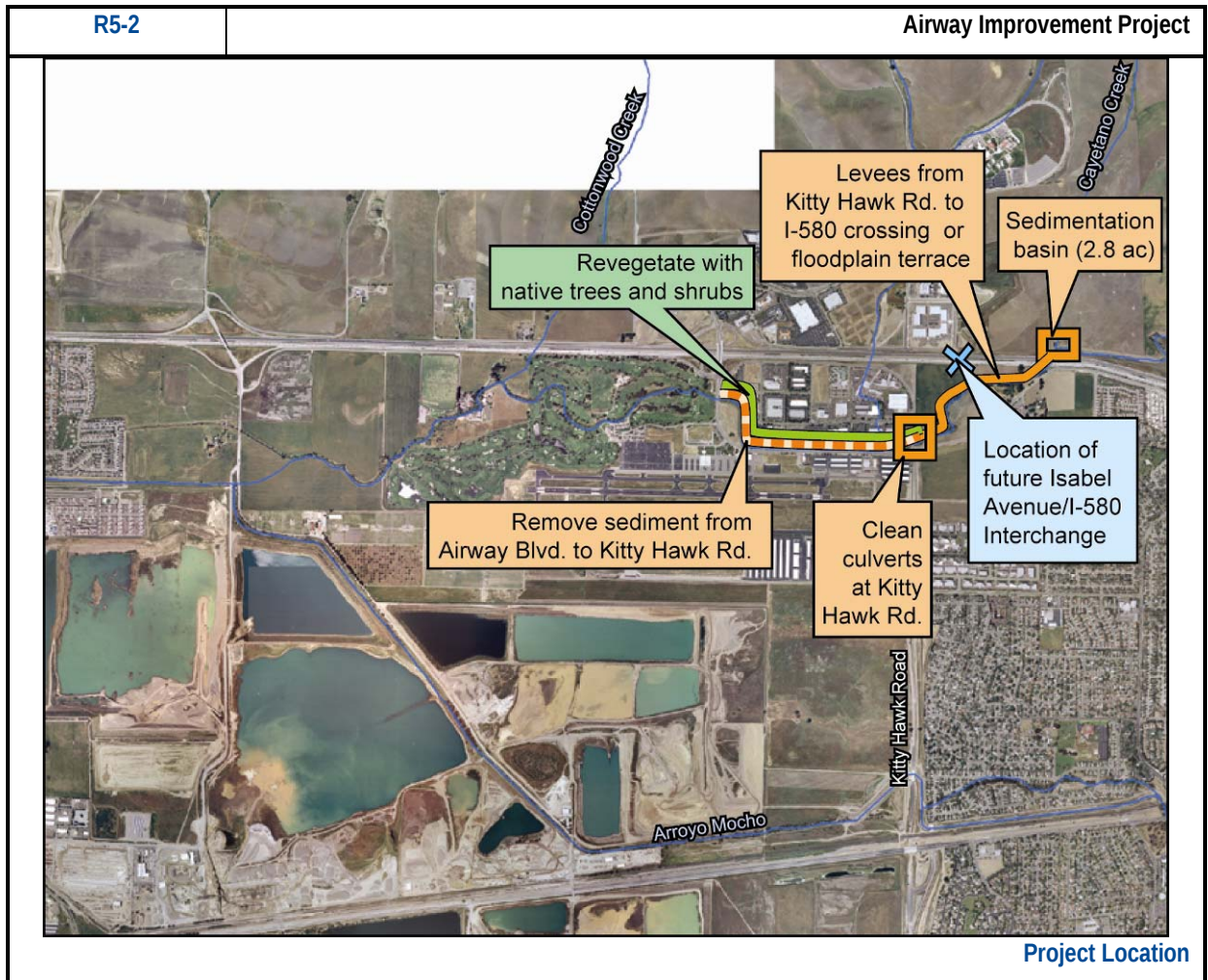


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| <b>Project Number</b>                   | R5-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Project Name</b>                     | North of I-580 Trail System                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Project Location</b>                 | Cottonwood Creek, Collier Creek, and Cayetano Creek.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Purpose</b>                          | Promote recreational corridors along Arroyo las Positas tributaries north of I-580 and create a system of regional trails.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Project Components</b>               | <ol style="list-style-type: none"> <li>1. Cottonwood Trail: <ul style="list-style-type: none"> <li>• Construct a 3 mile trail along Cottonwood Creek starting at its intersection with N. Canyons Parkway.</li> </ul> </li> <li>2. Collier Canyon Trail: <ul style="list-style-type: none"> <li>• Construct an approximately 4.5 mile trail parallel to Collier Canyon Creek starting at North Canyons Parkway Trail and continuing north.</li> </ul> </li> <li>3. Cayetano Trail: <ul style="list-style-type: none"> <li>• Construct a 5 mile trail along Cayetano Creek starting at the confluence with Arroyo las Positas.</li> <li>• Construct seasonal undercrossing at I-580 to connect to existing trail along Arroyo las Positas, west of N. Livermore Avenue. The undercrossing could also provide connectivity to potential future BART Station.</li> </ul> </li> <li>4. Install 1,500 feet of fencing to exclude cattle from the creeks (assume 500 feet needed for each creek).</li> <li>5. Acquire 30.3 acres of land for trails.</li> </ol> |
| <b>Capital Cost Estimate</b>            | \$22,390,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Implementation Issues</b>            | Coordination with LARPD, City of Livermore, and landowners in vicinity of projects. Coordination with BART.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Project Precursors</b>               | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Project Benefits</b>                 | Expands trail system north of I-580.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Goals/Objectives Addressed</b>       | Flood Protection & Drainage: none<br>Erosion and Sedimentation: none<br>Water Supply: none<br>Water Quality: E<br>Habitat & Environment: C<br>Recreation, Trails, and Public Education: C, D, G                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Maintenance Activities</b>           | Maintenance of trails: <ul style="list-style-type: none"> <li>• Conduct annual inspection of trails.</li> <li>• Seal cracks and repair pavement on trails, as needed.</li> <li>• Clear debris and vegetation growth, as needed.</li> <li>• Repair signs and structures, as needed.</li> </ul> Fencing maintenance: <ul style="list-style-type: none"> <li>• Inspect and repair fencing as needed, on an annual basis.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Annual Maintenance Cost Estimate</b> | \$569,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Notes</b>                            | <ul style="list-style-type: none"> <li>• Determine exact location of fencing needs in design phase.</li> <li>• Exact trail alignment and destination point has not yet been determined and should be evaluated in the future (Livermore Bikeways and Trails Master Plan, 2001).</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>References</b>                       | City of Livermore Bikeways and Trails Master Plan, Wilbur Smith Associates, December 11, 2001                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |



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| <b>Project Number</b>             | R5-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Project Name</b>               | Airway Improvement Project                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Project Location</b>           | Arroyo las Positas from the Airway Boulevard crossing, eastward to just upstream of the I-580 crossing (STA 220+00 to 145+00).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Purpose</b>                    | The capacity deficiency of Arroyo las Positas is exacerbated by the aggradation of the channel due to excessive sediment deposition upstream of the Las Positas Golf Course. The project purpose is to restore the reach capacity and curtail future aggradation by trapping sediment loads in a sediment basin located upstream of I-580.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Project Components</b>         | <ol style="list-style-type: none"> <li>1. Remove sediment accumulated at culverts in Kitty Hawk Road.</li> <li>2. Remove sediment along Airway Blvd (STA 185+00 to 145+00).</li> <li>3. Construct a 2.8 acre sediment basin north of I-580 and downstream of confluence of Arroyo las Positas with Cayetano Creek.</li> <li>4. Carry out mitigation for sediment removal. Assuming approximately 10.6 acres of land is needed for mitigation purposes.</li> <li>5. Construct levees starting upstream of the Kitty Hawk Road crossing and ending at the I-580 crossing (STA 220+00 to 195+00). As an alternative, construct floodplain terrace incorporating bank stabilization measures and native species plantings around proposed BART station. For cost estimating purposes, levees were assumed.</li> <li>6. Plant shaded riverine aquatic cover along 4,000 feet of channel banks (STA 185+00 to 145+00).</li> </ol>                                                                                                                        |
| <b>Capital Cost Estimate</b>      | \$24,960,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Implementation Issues</b>      | <ul style="list-style-type: none"> <li>• Ensuring that local drainage is not impacted by levees upstream of Kitty Hawk Road.</li> <li>• Permitting in compliance with CWA Section 401/404.</li> <li>• Coordination of improvements with Caltrans Isabel Road Interchange Project and potential future BART extension including identified mitigation measures.</li> <li>• Coordination of construction of sediment basin north of I-580 with Caltrans storm water compliance program.</li> <li>• Coordination of use of access road for seasonal trail under I-580 with Caltrans, City of Livermore and LARPD.</li> <li>• Coordinate with private landowners on right of way (ROW) issues.</li> <li>• If sediment basin upstream of I-580 is deemed unfeasible due to right-of-way restrictions, consider implementation of sediment basin downstream of the I-580 crossing at Station 185+00. Phasing of project implementation must consider downstream improvements.</li> <li>• Coordination with County Mosquito Abatement District</li> </ul> |
| <b>Project Precursors</b>         | <ul style="list-style-type: none"> <li>• Conduct sediment balance analysis for Arroyo las Positas.</li> <li>• Conduct hydrologic/hydraulic analysis to define channel capacity with proposed improvements.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Project Benefits</b>           | <ul style="list-style-type: none"> <li>• Restores conveyance capacity of Arroyo las Positas upstream of Airway Boulevard.</li> <li>• Reduces sediment accumulation into Arroyo las Positas upstream of Airway Boulevard.</li> <li>• Provides trail connectivity between areas south and north of 580.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Goals/Objectives Addressed</b> | Flood Protection & Drainage: A, B, C<br>Erosion and Sedimentation: A, B, C<br>Water Supply: none<br>Water Quality: C<br>Habitat & Environment: E<br>Recreation, Trails, and Public Education: none                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Maintenance Activities</b>     | Maintenance of sediment basin: <ul style="list-style-type: none"> <li>• Conduct field inspections of the sediment basin.</li> <li>• Conduct sediment sampling prior to sediment removal and prepare Sediment Characterization Report.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

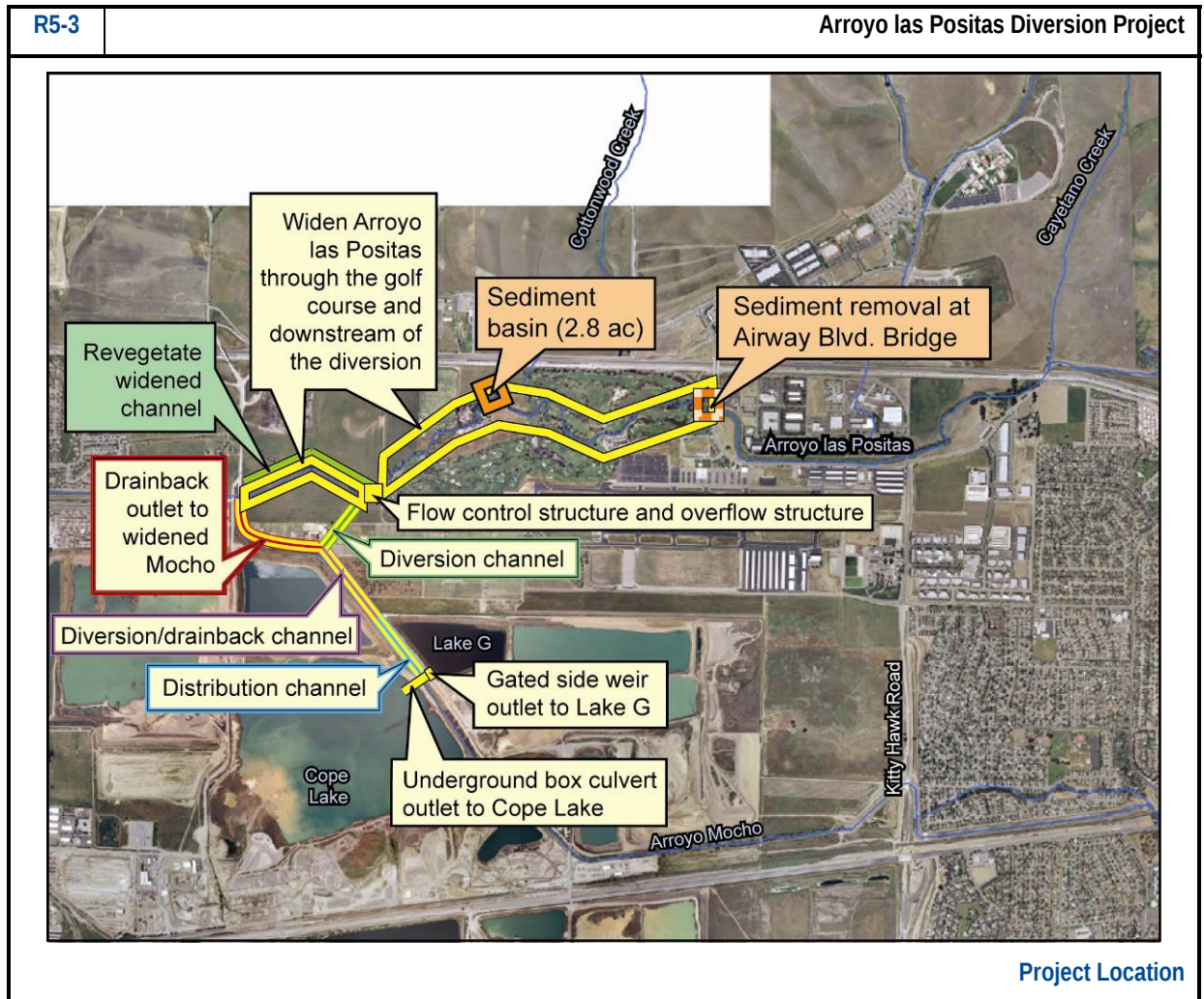
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|                                         | <ul style="list-style-type: none"> <li>• If desilting activities are conducted in a “wet stream”, conduct water quality sampling prior to and after sediment removal. Prepare a Water Quality Sampling Plan.</li> <li>• Dewater site if desilting activities are conducted in a “wet stream”. Conduct desilting activities.</li> <li>• Store and transport dredged material to an off-site landfill facility.</li> <li>• Conduct mitigation for sediment removal activities.</li> </ul> <p>Levee Maintenance:</p> <ul style="list-style-type: none"> <li>• Conduct annual inspection of site.</li> <li>• Conduct repairs of levee, as needed.</li> </ul> <p>Vegetation maintenance:</p> <ul style="list-style-type: none"> <li>• Conduct annual inspection of planted riparian vegetation.</li> <li>• Conduct maintenance of riparian vegetation by utilizing a combination of methods including hand removal, mechanical or chemical clearing. The annual maintenance cost estimate is based on chemical clearing of invasive species which includes conducting a biological survey and implementing a water quality sampling plan.</li> <li>• Collect and dispose of vegetation debris.</li> </ul> |
| <b>Annual Maintenance Cost Estimate</b> | \$279,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Notes</b>                            | <ul style="list-style-type: none"> <li>• Channel improvements proposed upstream of Kitty Hawk Road should be re-assessed once the BART and Caltrans improvements are defined.</li> <li>• Alternatives to sediment basins such as offline ponds with habitat bypass channels, wetlands, floodplain benches, and in-line pools can be considered as part of the pre-design phase.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>References</b>                       | <ul style="list-style-type: none"> <li>• Existing Conditions and Sensitivities/Constraints Analysis for Arroyo Las Positas Stream Corridor Management Plan Phase I, Questa Engineering Corporation, April 1998</li> <li>• Arroyo Mocho &amp; Arroyo Las Positas Management Plans: Initial Findings and Recommendations, Philip Williams &amp; Associates Ltd., December 8, 2000</li> <li>• Flood Control MP, TM No. 5: Evaluation of Problem Areas &amp; Identification of Solutions, West Yost &amp; Associates, November 2001</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

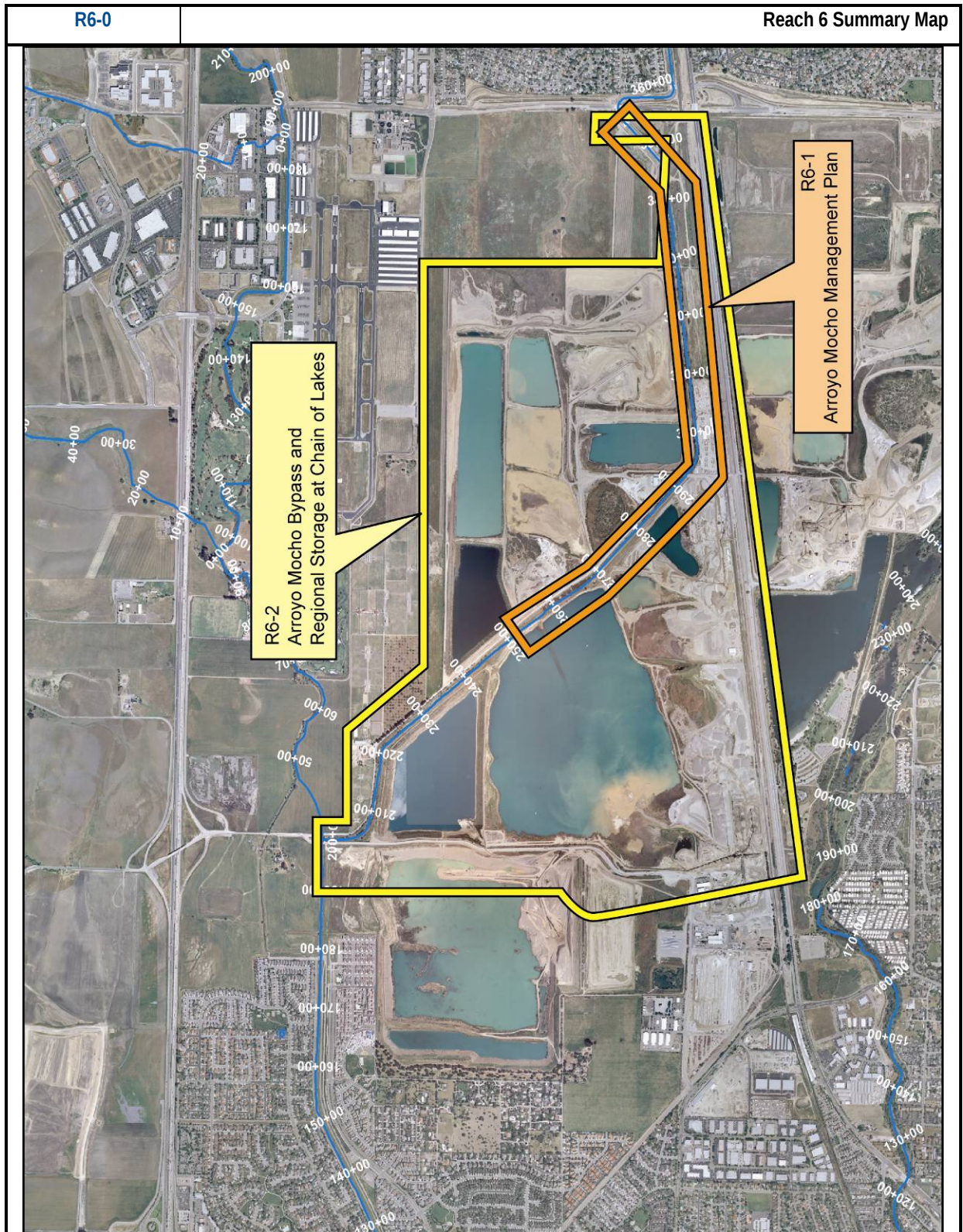


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| <b>Project Number</b>        | R5-3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Project Name</b>          | Arroyo las Positas Diversion Project                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Project Location</b>      | The Arroyo las Positas diversion is proposed at Station 60+00, downstream of Las Positas Golf Course. The diversion channel extends to Lake G and Cope Lake. Widening of Arroyo las Positas occurs from the Airway Boulevard crossing through Las Positas Golf Course to the Mocho confluence.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Purpose</b>               | Alleviate capacity deficiency at Arroyo Las Positas through Las Positas Golf Course and downstream of the diversion structure to protect adjacent property from potential flooding. The existing capacity at Las Positas Golf Course is approximately 1,800 cfs, and will be improved to accommodate the estimated design flow under projected build-out conditions of approximately 10,100 cfs. The reach downstream of the Golf Course will also be widened by terracing, to convey approximately 3,700 cfs. Provide detention storage at Chain of Lakes as part of a regional flood protection solution for the Livermore-Amador Valley.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Project Components</b>    | <p>A. <u>Arroyo las Positas Diversion Channel</u><br/>Construct a diversion channel to divert Arroyo las Positas flood flows to Lake G and Cope Lake of the Chain of Lakes. The diversion channel will convey approximately 6,400 to 9,400 cfs of flood flows from Arroyo las Positas, and 3,400 cfs from Arroyo Mocho totaling 9,800 to 12,800 cfs; and will include:</p> <ol style="list-style-type: none"> <li>1. Flow control structure with automated gates and an overflow structure <ul style="list-style-type: none"> <li>• Generator and housing as standby power for gates</li> </ul> </li> <li>2. Diversion/Drainback Channel <ul style="list-style-type: none"> <li>• Approximately 3,000 feet of earthen-lined, excavated-cut channel</li> </ul> </li> <li>3. Distribution Channel <ul style="list-style-type: none"> <li>• Approximately 1,750 feet of concrete channel</li> <li>• Gated outlets to Lake G (side weir) and Cope Lake (box culvert)</li> </ul> </li> <li>4. Box culvert under Arroyo Mocho between Lake G and Cope Lake</li> <li>5. Drainback outlet to widened Mocho <ul style="list-style-type: none"> <li>• Flow control structure with gates</li> </ul> </li> <li>6. Land acquisition (approximately 40 acres)</li> </ol> <p>B. <u>Widening of Arroyo las Positas through the Golf Course:</u><br/>Widen Arroyo las Positas to convey approximately 10,100 cfs through the golf course to the diversion location. The widening of the Arroyo las Positas will include:</p> <ol style="list-style-type: none"> <li>1. Lowering channel invert by 5 feet for a length of 10,000 feet through the Las Positas Golf Course;</li> <li>2. Widening of channel and re-design of Las Positas Golf Course in vicinity of channel</li> <li>3. Conduct sediment removal at Airway Boulevard Bridge to increase hydraulic capacity.</li> <li>4. Construct a sediment basin (2.8 acres) downstream of the confluence of Arroyo las Positas and Cottonwood Creek.</li> <li>5. Carry out mitigation for sediment removal. Assuming approximately 1.4 acres of land is needed for mitigation purposes.</li> </ol> <p>C. <u>Widening of Arroyo las Positas Downstream of the Diversion:</u><br/>Widen Arroyo las Positas utilizing terracing to convey approximately 3,700 cfs from the proposed diversion structure (Station 60+00) to the improved section of Arroyo las Positas just above the confluence with Arroyo Mocho (beginning at Station 45+00). Also includes improvements to the capacity at the fish ladder. Terraced section will be replanted.</p> <ol style="list-style-type: none"> <li>1. Assumes terraces will be constructed at a width of 25 feet on each bank to a depth of 10 feet, for a channel length of 1,500 feet.</li> <li>2. Revegetation will be completed for 25 feet on each bank for a channel length of 1,500 feet.</li> </ol> <p>D. Creation of approximately 9 acres of wetland as a mitigation measure for this project (R.5-3).</p> |
| <b>Capital Cost Estimate</b> | \$148,870,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

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| <b>Implementation Issues</b>            | <ul style="list-style-type: none"> <li>• Coordination with City of Livermore, Livermore Airport, County Mosquito Abatement District, and Las Positas Golf Course.</li> <li>• Permitting in compliance with CWA Section 401/404.</li> <li>• Operations and Control Plan Studies</li> <li>• Coordinate with Pleasanton Gravel Company on permits, cost, and agreements.</li> <li>• Coordination with Crosswinds Church.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Project Precursors</b>               | <ul style="list-style-type: none"> <li>• Conduct facilities and operations planning for detention storage in the Chain of Lakes.</li> <li>• Prepare plans for Las Positas Golf Course modifications to accommodate widening of Arroyo las Positas.</li> <li>• Conduct sediment balance analysis for Arroyo las Positas.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Project Benefits</b>                 | <ul style="list-style-type: none"> <li>• Addresses Arroyo las Positas capacity deficiency</li> <li>• Addresses flooding of Las Positas Golf Course</li> <li>• Conveys flood flows to Chain of Lakes for storage</li> <li>• Minimizes flooding in downstream reach of Arroyo de la Laguna through the use of regional storage of flood flows.</li> <li>• Provides regional storage for the Livermore-Amador Valley</li> <li>• Restores conveyance capacity of Arroyo las Positas upstream of Airway Boulevard.</li> <li>• Reduces sediment accumulation into Arroyo las Positas upstream of Airway Boulevard.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Goals/Objectives Addressed</b>       | <p>Flood Protection &amp; Drainage: A, B, C, E<br/> Erosion and Sedimentation: A, B, C<br/> Water Supply: A, C, D, E, F<br/> Water Quality: C<br/> Habitat &amp; Environment: none<br/> Recreation, Trails, and Public Education: none</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Maintenance Activities</b>           | <p>For components A through C, a maintenance procedure will be developed in the design phase.</p> <p>Maintenance of sediment basin:</p> <ul style="list-style-type: none"> <li>• Conduct field inspections of the sediment basin.</li> <li>• Conduct sediment sampling prior to sediment removal and prepare Sediment Characterization Report.</li> <li>• If desilting activities are conducted in a "wet stream", conduct water quality sampling prior to and after sediment removal. Prepare a Water Quality Sampling Plan.</li> <li>• Dewater site if desilting activities are conducted in a "wet stream". Conduct desilting activities.</li> <li>• Store and transport dredged material to an off-site landfill facility.</li> <li>• Conduct mitigation for sediment removal activities.</li> </ul> <p>Maintenance of wetlands:</p> <ul style="list-style-type: none"> <li>• Conduct annual visual estimates of vegetative cover and species composition to estimate vegetative cover, species diversity, presence or absence of target and invasive species, and general abundance of individual plant species. Identify species survival rate.</li> <li>• Replace wetland vegetation, as needed, to maintain at least 50% surface area coverage after second growing season.</li> <li>• Conduct hand weeding of exotic plant species during the first three years to ensure there is no interference with the development and establishment of target wetland plant species.</li> <li>• Conduct annual routine maintenance activities including access road maintenance, and debris removal.</li> </ul> |
| <b>Annual Maintenance Cost Estimate</b> | \$2,216,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

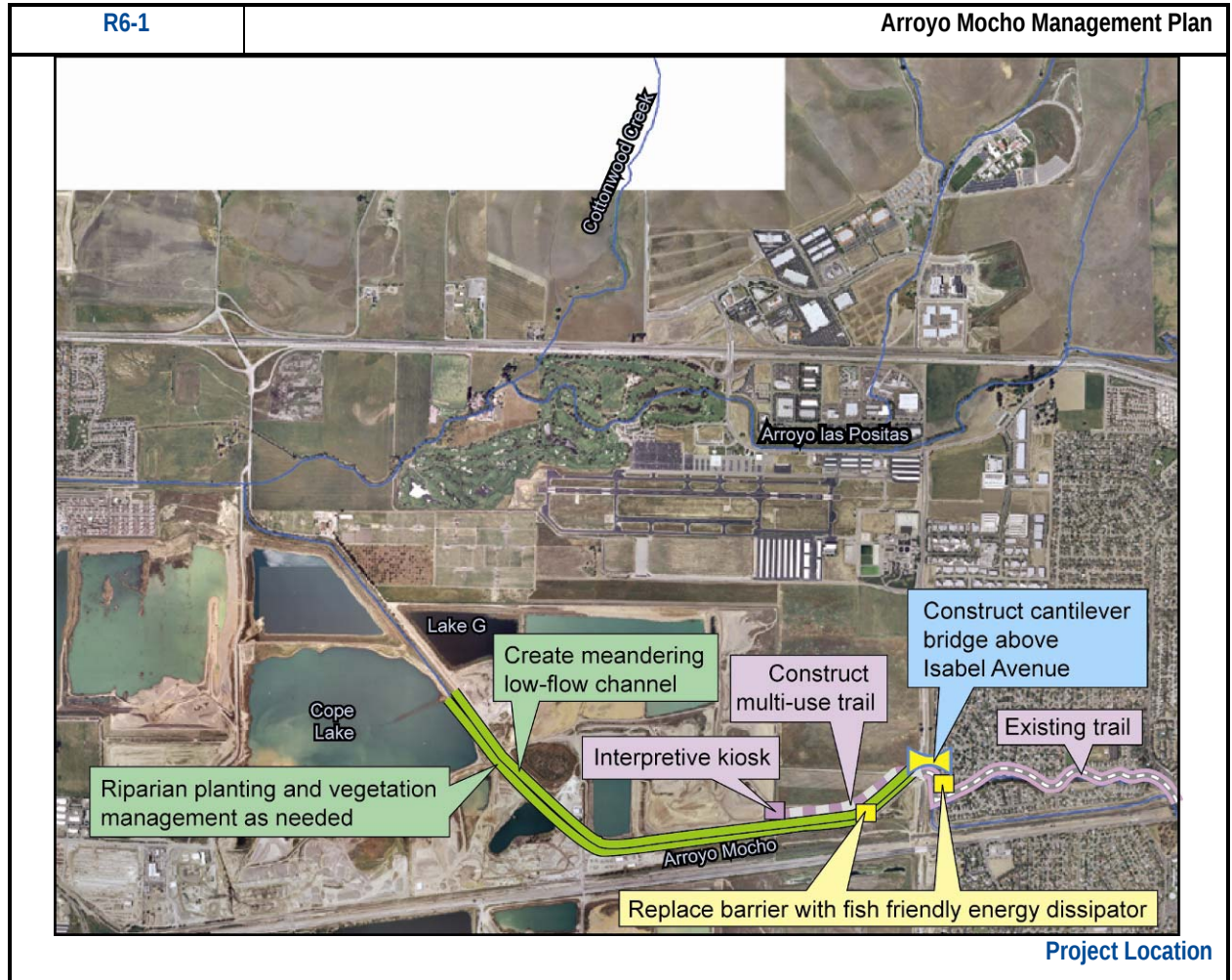
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| <b>Notes</b>      | <ul style="list-style-type: none"><li>• Alternatives to sediment basins such as offline ponds with habitat bypass channels, wetlands, floodplain benches, and in-line pools can be considered as part of the pre-design phase.</li><li>• To avoid transferring the current FEMA floodplain from the Chain of Lakes area to other locations downstream, capacity improvements to Arroyo las Positas through the golf course and the diversion structure described above must not be constructed prior to completion of the regional detention storage improvements.</li><li>• Project component location, sizing, and other design details were developed to an appropriate level for planning purposes and will be finalized closer to project implementation.</li></ul> |
| <b>References</b> | Flood Control MP, TM No. 5: Evaluation of Problem Areas & Identification of Solutions, West Yost & Associates, November 2001                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |





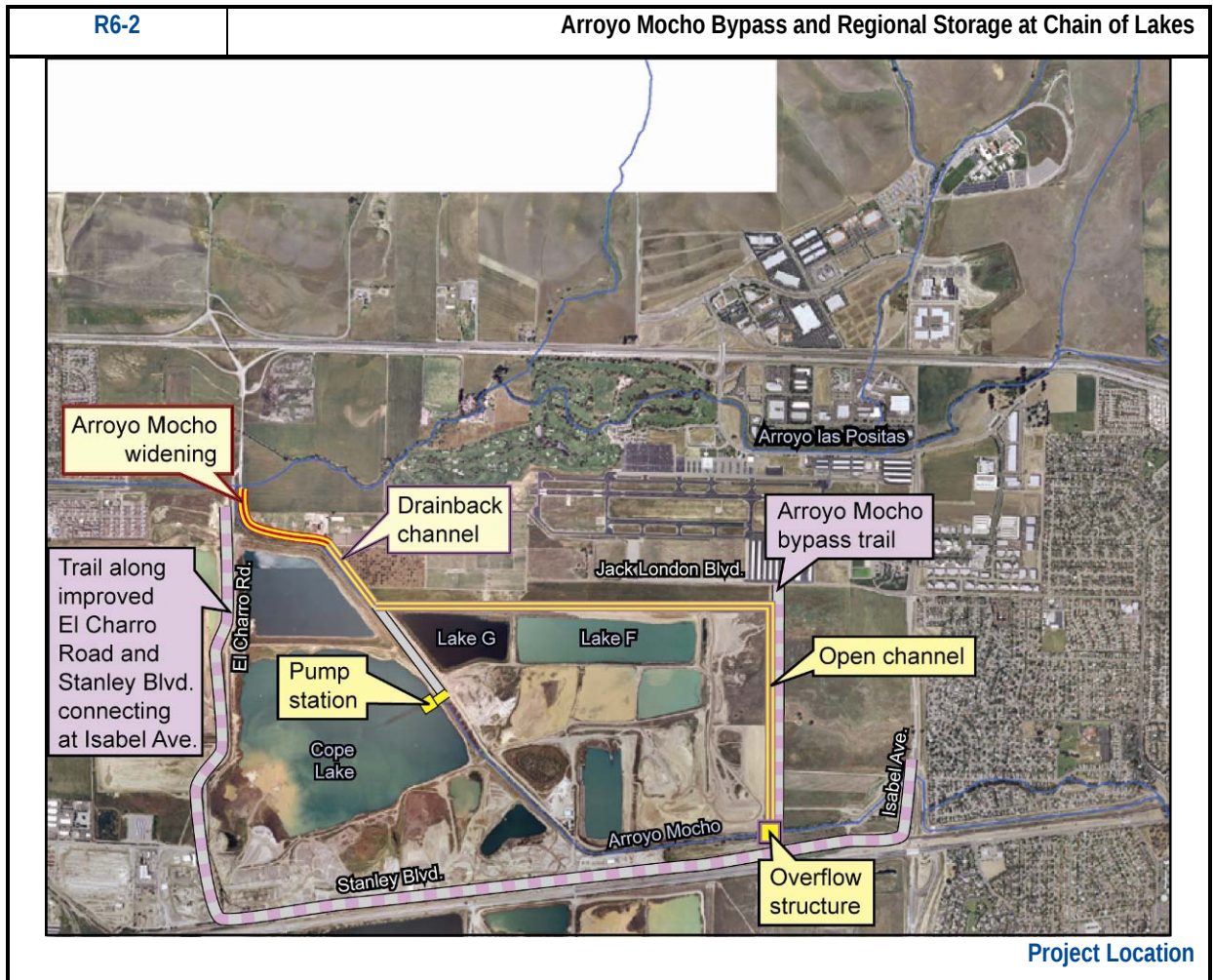
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| <b>Project Number</b>             | R6-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Project Name</b>               | Arroyo Mocho Management Plan                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Project Location</b>           | Arroyo Mocho along the Chain of Lakes, STA 350+00 to 200+00.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Purpose</b>                    | The proposed project is expected to protect and enhance the stream habitat and improve the riparian value of the stream. Another purpose is to create a recreational corridor along Arroyo Mocho and link this recreational corridor to the regional trail system.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Project Components</b>         | <ol style="list-style-type: none"> <li>Conduct habitat enhancement, including: <ul style="list-style-type: none"> <li>Vegetation management west of Lake E along 7,500 feet of bank for 20 feet on each side to improve conveyance from 900 cfs to 1,300 cfs (STA 350+00 to 275+00).</li> <li>Meandering low-flow channel along 7,500 feet of Arroyo Mocho (STA 350+00 to 275+00) assuming a 1.25 meandering ratio. Project includes acquisition of 10.3 acres required for habitat improvements.</li> </ul> </li> <li>Modify 2 existing fish barriers (dragon's teeth-energy dissipation units) upstream and downstream of Isabel Avenue to make them passable to fish.</li> <li>Recreation features include: <ul style="list-style-type: none"> <li>2,500 feet of trail along and north of Arroyo Mocho, south of Oak Business Park.</li> <li>Link between proposed trail to the trail east of Isabel Avenue. A pedestrian bridge or trail undercrossing will be evaluated at pre-design stage.</li> <li>1 interpretive kiosk at location of proposed Arroyo Mocho bypass.</li> </ul> </li> </ol> |
| <b>Capital Cost Estimate</b>      | \$11,030,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Implementation Issues</b>      | <ul style="list-style-type: none"> <li>Space constraints along existing Arroyo Mocho alignment and constraints associated with the Arroyo Mocho to Lake H diversion.</li> <li>Coordination with Pleasanton Gravel Company on permits, cost, and agreements.</li> <li>Coordination with the City of Livermore, LARPD, and City of Pleasanton.</li> <li>Permitting in compliance with CWA Section 401/404.</li> <li>Coordination with RWQCB, CDFG</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Project Precursors</b>         | <ul style="list-style-type: none"> <li>Conduct facilities/operations planning for Arroyo Mocho diversion and detention storage in Chain of Lakes.</li> <li>Conduct hydrologic/hydraulic modeling to determine if proposed improvements for this project are adequate to increase the capacity of the current Arroyo Mocho channel from 900 cfs to 1,300 cfs (flow remaining after diversion to storage).</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Project Benefits</b>           | <ul style="list-style-type: none"> <li>Enhance Arroyo Mocho as potential future steelhead corridor.</li> <li>Use Arroyo Mocho as a recreation corridor. Provide connectivity to regional trails system.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Goals/Objectives Addressed</b> | Flood Protection & Drainage: none<br>Erosion and Sedimentation: none<br>Water Supply: none<br>Water Quality: none<br>Habitat & Environment: A, C<br>Recreation, Trails, and Public Education: B, C, D, E, F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

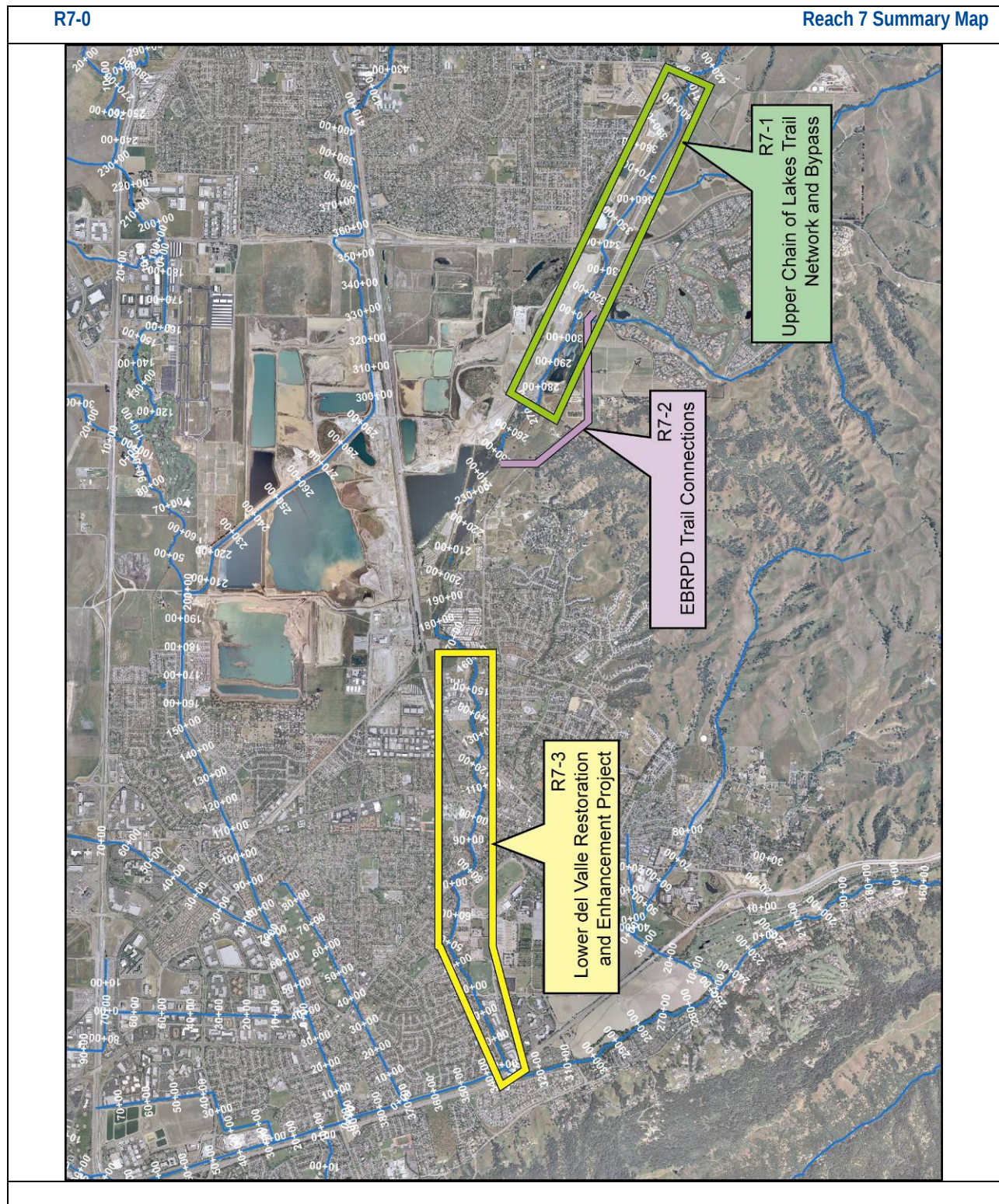
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| <b>Maintenance Activities</b>           | <p>Vegetation maintenance:</p> <ul style="list-style-type: none"> <li>• Conduct annual inspection of planted riparian vegetation.</li> <li>• Conduct maintenance of riparian vegetation by utilizing a combination of methods including hand removal, mechanical or chemical clearing. The annual maintenance cost estimate is based on chemical clearing of invasive species which includes conducting a biological survey and implementing a water quality sampling plan.</li> <li>• Collect and dispose of vegetation debris.</li> </ul> <p>Maintenance of trails:</p> <ul style="list-style-type: none"> <li>• Conduct annual inspection of trails.</li> <li>• Seal cracks and repair pavement on trails, as needed.</li> <li>• Clear debris and vegetation growth, as needed.</li> <li>• Repair signs and structures, as needed.</li> </ul> |
| <b>Annual Maintenance Cost Estimate</b> | \$290,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Notes</b>                            | <ul style="list-style-type: none"> <li>• Existing wetland west of Isabel Avenue should be utilized as part of the stream habitat.</li> <li>• An undercrossing can be evaluated phase as an option to the construction of a pedestrian bridge (Project Component 6).</li> <li>• Assumes stream would be dry during construction activities and therefore dewatering would not be required.</li> <li>• Assumes vegetation management will restore capacity in Arroyo Mocho to 1,300 cfs based on reduction in channel roughness; a detailed analysis should be done as part of pre-design.</li> </ul>                                                                                                                                                                                                                                              |
| <b>References</b>                       | <ul style="list-style-type: none"> <li>• Arroyo Mocho &amp; Arroyo Las Positas Management Plans: Initial Findings and Recommendations, Philip Williams &amp; Associates Ltd., December 8, 2000</li> <li>• Flood Control MP, TM No. 5: Evaluation of Problem Areas &amp; Identification of Solutions, West Yost &amp; Associates, November 2001</li> <li>• Specific Plan for Livermore-Amador Valley Quarry Reclamation, 1981</li> <li>• RMC Draft TM: Project Refinements - Frequency of Storage, September 8, 2004</li> <li>• City of Livermore Bikeways and Trails Master Plan, Wilbur Smith Associates, December 11, 2001</li> </ul>                                                                                                                                                                                                          |



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| <b>Project Number</b>        | R6-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Project Name</b>          | Arroyo Mocho Bypass and Regional Storage at Chain of Lakes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Project Location</b>      | Arroyo Mocho bypass will be at Station 340+00. Arroyo Mocho bypass alignment will parallel the western end of the Oak Business Park development, around Lake E and north of Lakes F and G into Lake G and Cope Lake.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Purpose</b>               | Arroyo Mocho is currently undersized, with a capacity of 900 cfs compared to projected future 100-year storm flows of approximately 4,800 cfs. The proposed project is expected to alleviate flooding along Arroyo Mocho by diverting and detaining 3,500 cfs of Arroyo Mocho flows into the Chain of Lakes. In addition, the proposed project would provide regional storage for the Livermore-Amador Valley and reduce downstream flooding along Arroyo de la Laguna.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Project Components</b>    | <p>A. Arroyo Mocho Bypass:</p> <ol style="list-style-type: none"> <li>1. Construct a passive overflow structure at Station 340+00 on Arroyo Mocho such as a broad crested ogee-type weir.</li> <li>2. Construct approximately 11,000 feet of new earthen-lined, excavated-cut channel along east side of Lake E, along north side of Lakes F and G, and into Cope Lake and Lake G independently.</li> <li>3. Land acquisition (approximately 50 acres)</li> </ol> <p>B. Storm Water Return from Cope Lake and Lake G:</p> <ol style="list-style-type: none"> <li>1. Install Cope Lake Pump Station (including fish screens).</li> <li>2. Widen Arroyo Mocho downstream of Cope Lake.</li> </ol> <p>C. Arroyo Mocho Trail System:</p> <ol style="list-style-type: none"> <li>1. Construct approximately 4,500 feet of multi-purpose trail along Arroyo Mocho bypass connecting to Jack London Blvd with access to the public park planned for the Oaks Business Park.</li> <li>2. Construct 4.2 miles of trail (along the road) from the Isabel Ave. cantilever bridge along Isabel Ave., Stanley Blvd, and improved El Charro Rd. to connect to existing trail along Arroyo Mocho (STA 190+00 to 0+00).</li> </ol> |
| <b>Cost Estimate</b>         | \$129,400,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Implementation Issues</b> | <ul style="list-style-type: none"> <li>• Coordination with plans for mining new lakes with Pleasanton Gravel Company.</li> <li>• Coordination with Pleasanton Gravel Company on permits, costs, and agreements.</li> <li>• Addressing potential conflicting uses of the Chain of Lakes.</li> <li>• Coordination with transportation plans along current Arroyo Mocho alignment.</li> <li>• Right-of-way issues in COL area.</li> <li>• Coordination with local developments along the Chain of Lakes (such as the Oak Business Development) and local agencies to allocate the existing space to solve the regional flooding problem.</li> <li>• Permitting in compliance with CWA Section 401/404.</li> <li>• Coordination with City of Pleasanton regarding Rancho El Charro, and the proposed improvements to El Charro Road (Figure III-5: Schedule of Roadway Improvements, General Plan - August 6, 1996).</li> <li>• Development of SMP 38, SMP 39, and SMP 40.</li> </ul>                                                                                                                                                                                                                                  |
| <b>Project Precursors</b>    | <ul style="list-style-type: none"> <li>• Conduct facilities/operations planning for Arroyo Mocho bypass and detention storage at the Chain of Lakes.</li> <li>• Conduct hydrologic/hydraulic modeling to determine if proposed improvements of Project R6-1 are adequate to increase the capacity of the current Arroyo Mocho channel from 900 cfs to 1,300 cfs (flow remaining after diversion to storage).</li> <li>• Assess the financial and environmental benefits of returning stored flows to Arroyo del Valle versus Arroyo Mocho.</li> <li>• Oak Business Park needs to complete improvements of initial bypass section.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Project Benefits</b>      | <ul style="list-style-type: none"> <li>• Addresses Arroyo Mocho capacity deficiency.</li> <li>• Conveys flood flows to Chain of Lakes for storage on a 5 to 10 year frequency.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

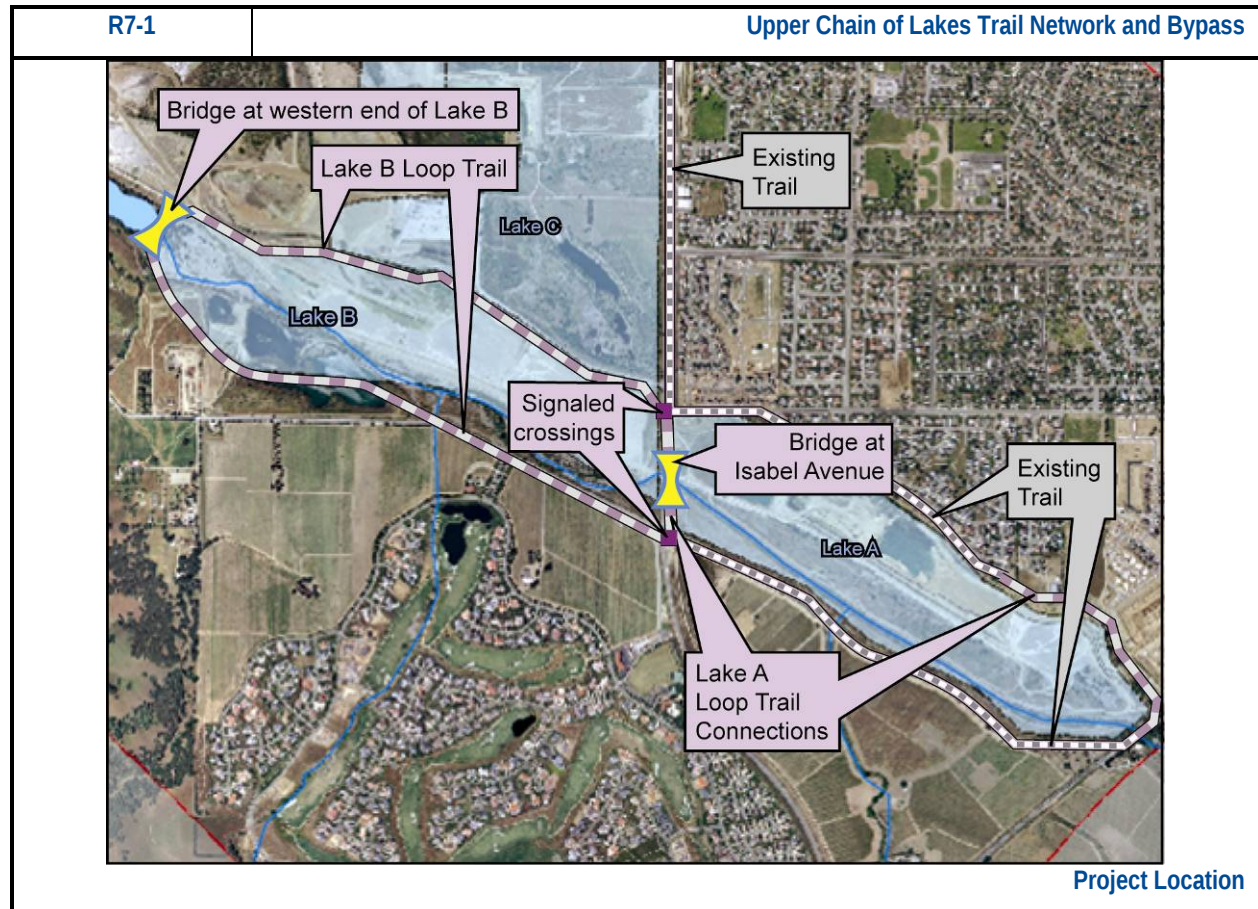
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|                                   | <ul style="list-style-type: none"> <li>Minimizes flooding along Stanley Blvd.</li> <li>Provides regional storage for Livermore-Amador Valley.</li> <li>Storage in Lakes could be utilized for water supply purposes.</li> <li>Provides a water quality benefit through removal of sediment via storage.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Goals/Objectives Addressed</b> | Flood Protection & Drainage: A, B, E<br>Erosion and Sedimentation: none<br>Water Supply: A, C, D, E<br>Water Quality: B<br>Habitat & Environment: none<br>Recreation, Trails, and Public Education: C, D, G                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Maintenance Activities</b>     | For components A and B, a maintenance procedure will be developed in the design phase.<br><br>Maintenance of trails: <ul style="list-style-type: none"> <li>Conduct annual inspection of trails.</li> <li>Seal cracks and repair pavement on trails, as needed.</li> <li>Clear debris and vegetation growth, as needed.</li> <li>Repair signs and structures, as needed.</li> </ul>                                                                                                                                                                                                                                                                                                                                         |
| <b>Maintenance Cost Estimate</b>  | \$1,049,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Notes</b>                      | <ul style="list-style-type: none"> <li>The City of Pleasanton plans to improve El Charro Road alignment between 2005 and 2010, based on their 1996 General Plan.</li> <li>Development of SMP 38, SMP 39, and SMP 40 will affect proposed project.</li> <li>Project component location, sizing, and other design details were developed to an appropriate level for planning purposes and will be finalized closer to project implementation.</li> </ul>                                                                                                                                                                                                                                                                     |
| <b>References</b>                 | <ul style="list-style-type: none"> <li>Flood Control MP, TM No. 5: Evaluation of Problem Areas &amp; Identification of Solutions, West Yost &amp; Associates, November 2001</li> <li>Specific Plan for Livermore-Amador Valley Quarry Reclamation, 1981</li> <li>City of Pleasanton General Plan. August 6, 1996 (Figure III-5: Schedule of Roadway Improvements)</li> <li>City of Livermore Bikeways and Trails Master Plan, Wilbur Smith Associates, December 11, 2001</li> <li>Phone conversation with Janice Stern (Planning Department – City of Pleasanton) on September 7, 2005</li> <li>Alameda County, 2003</li> <li>City of Livermore, 2003</li> <li>Alameda County Community Development Agency, 2002</li> </ul> |



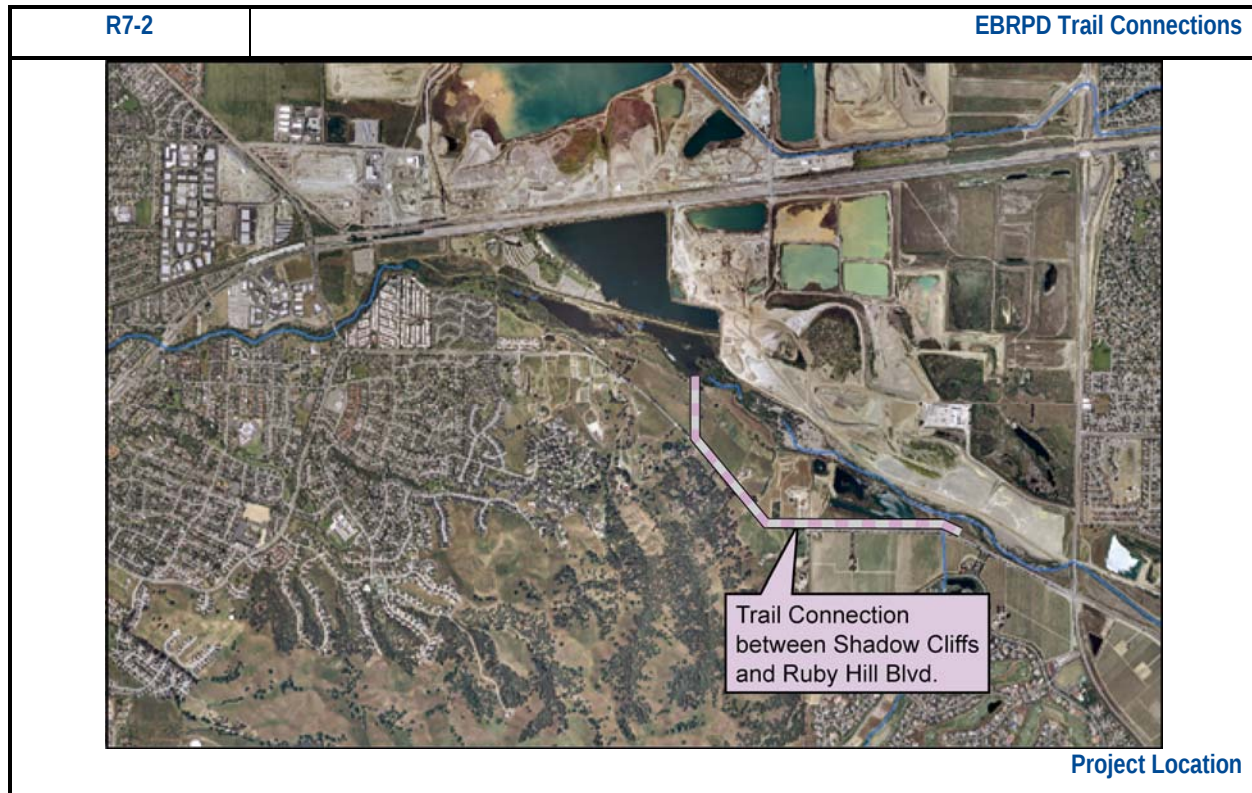


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| <b>Project Number</b>                   | R7-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Project Name</b>                     | Upper Chain of Lakes Trail Network                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Project Location</b>                 | Arroyo del Valle (STA 400+00 to 260+00), Lakes A and B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Purpose</b>                          | Construct a recreational trail network around Lakes A and B that will be linked to the existing trail along Isabel Avenue and to trail connecting to Sycamore Grove Park proposed under R.4-2.                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Project Components</b>               | <ol style="list-style-type: none"> <li>Construct trail connections, including: <ul style="list-style-type: none"> <li>3.0 miles of trail to complete trail loop around Lake B.</li> <li>0.5 miles of trail to complete trail loop around Lake A.</li> <li>2 pedestrian bridges across Arroyo del Valle at Isabel Avenue along the existing Isabel Avenue bridge, and at the western end of Lake A.</li> <li>4 traffic signals at Isabel Avenue.</li> <li>2 signaled crossings.</li> <li>Project includes acquisition of approximately 5.0 acres of land.</li> </ul> </li> </ol> |
| <b>Capital Cost Estimate</b>            | \$6,790,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Implementation Issues</b>            | <ul style="list-style-type: none"> <li>Coordination with EBRPD and LARPD.</li> <li>Coordination with RMC Pacific and Pleasanton Gravel Company with respect to mining operations, timing of land availability, permits, cost, and agreements.</li> <li>Coordination with the Chain of Lakes Master Plan and Caltrans regarding planned improvements along Highway 84/Isabel Avenue.</li> <li>Limited land availability in quarry area.</li> <li>Public safety: trails are located near steep embankments.</li> </ul>                                                            |
| <b>Project Precursors</b>               | <ul style="list-style-type: none"> <li>Completion of quarry operations along and north of Arroyo del Valle before implementation of loop trail around Lake B.</li> <li>Recreation demand/interest study to identify recreational needs and maximize recreational opportunities along Arroyo Mocho in the Chain of Lakes area.</li> <li>Permits acquisition from regulatory agencies.</li> </ul>                                                                                                                                                                                 |
| <b>Project Benefits</b>                 | <ul style="list-style-type: none"> <li>Provides additional recreational opportunities in the Chain of Lakes area.</li> <li>Extends recreational trail network.</li> <li>Provides connection to existing trails.</li> </ul>                                                                                                                                                                                                                                                                                                                                                      |
| <b>Goals/Objectives Addressed</b>       | Flood Protection & Drainage: none<br>Erosion and Sedimentation: none<br>Water Supply: none<br>Water Quality: none<br>Habitat & Environment: none<br>Recreation, Trails, and Public Education: C, D, F, G                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Maintenance Activities</b>           | Trail Maintenance: <ul style="list-style-type: none"> <li>Conduct annual inspection of trails.</li> <li>Seal cracks and repair pavement on trails, as needed.</li> <li>Clear debris and vegetation growth, as needed.</li> <li>Repair signs and structures, as needed.</li> </ul>                                                                                                                                                                                                                                                                                               |
| <b>Annual Maintenance Cost Estimate</b> | \$154,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

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| <b>Notes</b>      | <ul style="list-style-type: none"><li>• The project assumes that Lakes A and B will be completed as a result of quarry operations occurring along Arroyo del Valle.</li><li>• Potential to use Lake B as a more intensive recreational area (including water contact activities) if it is effectively removed from the Chain of Lakes. Final use of Lake B will depend on design features of Lake B outlet, impacts of removing Lake B from the Chain of lakes, future water supply needs and the need for such recreational features. Design features may be needed to isolate Lake B from Lake A.</li><li>• Potential to use this area for program-wide SMMP mitigation, stockpiling and storage of equipment.</li><li>• Isabel crossings: Can be limited to 1 road crossing if there are 2 protected lanes (one on each side). Also, a signal crossing would be an alternative to the fly-over bridge depending on amount of traffic, both vehicular and recreational.</li></ul> |
| <b>References</b> | <ul style="list-style-type: none"><li>• Specific Plan for Livermore-Amador Valley Quarry Area Reclamation, November 5, 1981</li><li>• East Bay Regional Park District Master Plan 1997, December 17, 1996</li><li>• City of Livermore Bikeways and Trails Master Plan, Wilbur Smith Associates, December 11, 2001</li><li>• Personal communication with Zone 7 Staff, Summer 2003.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

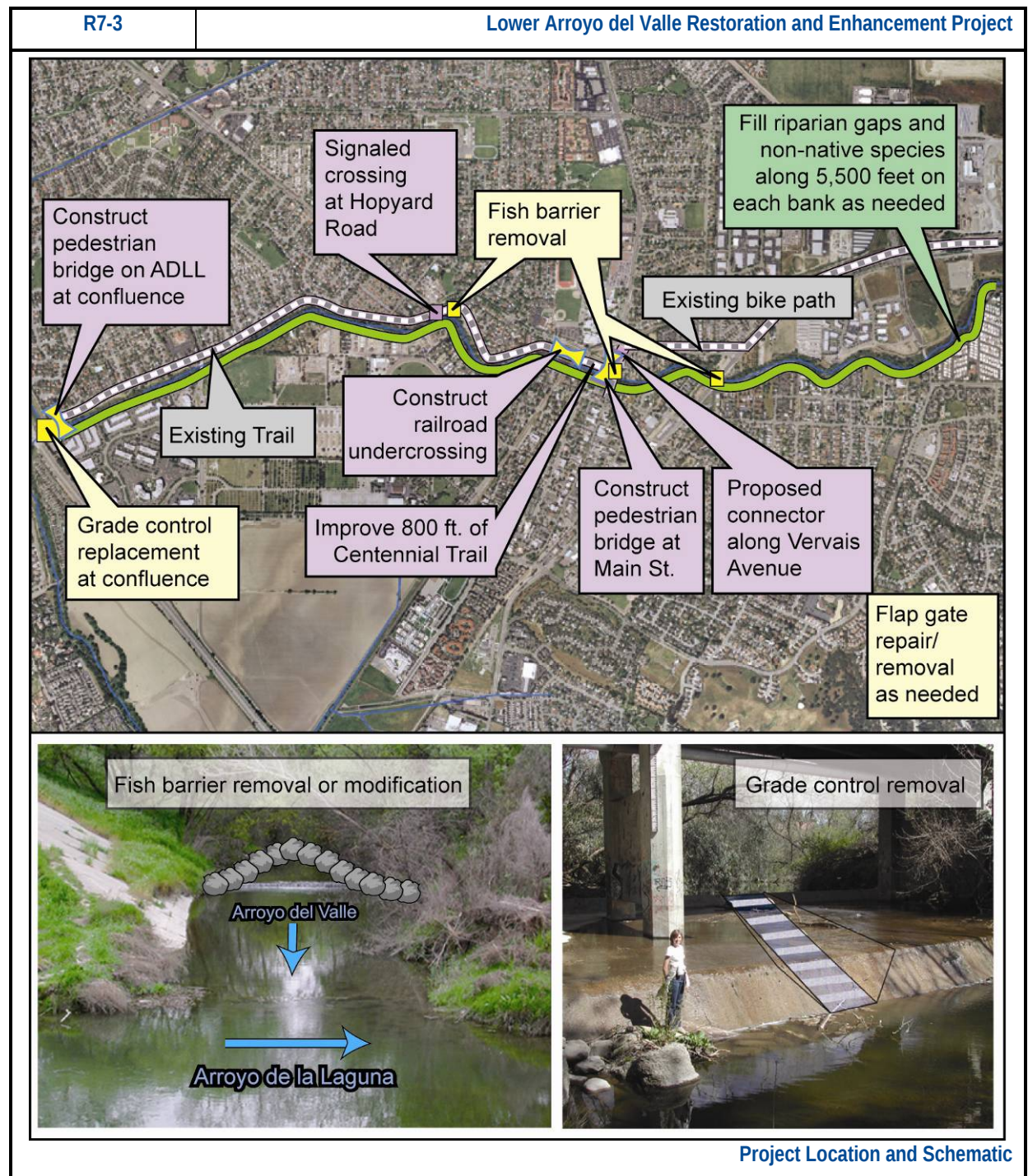


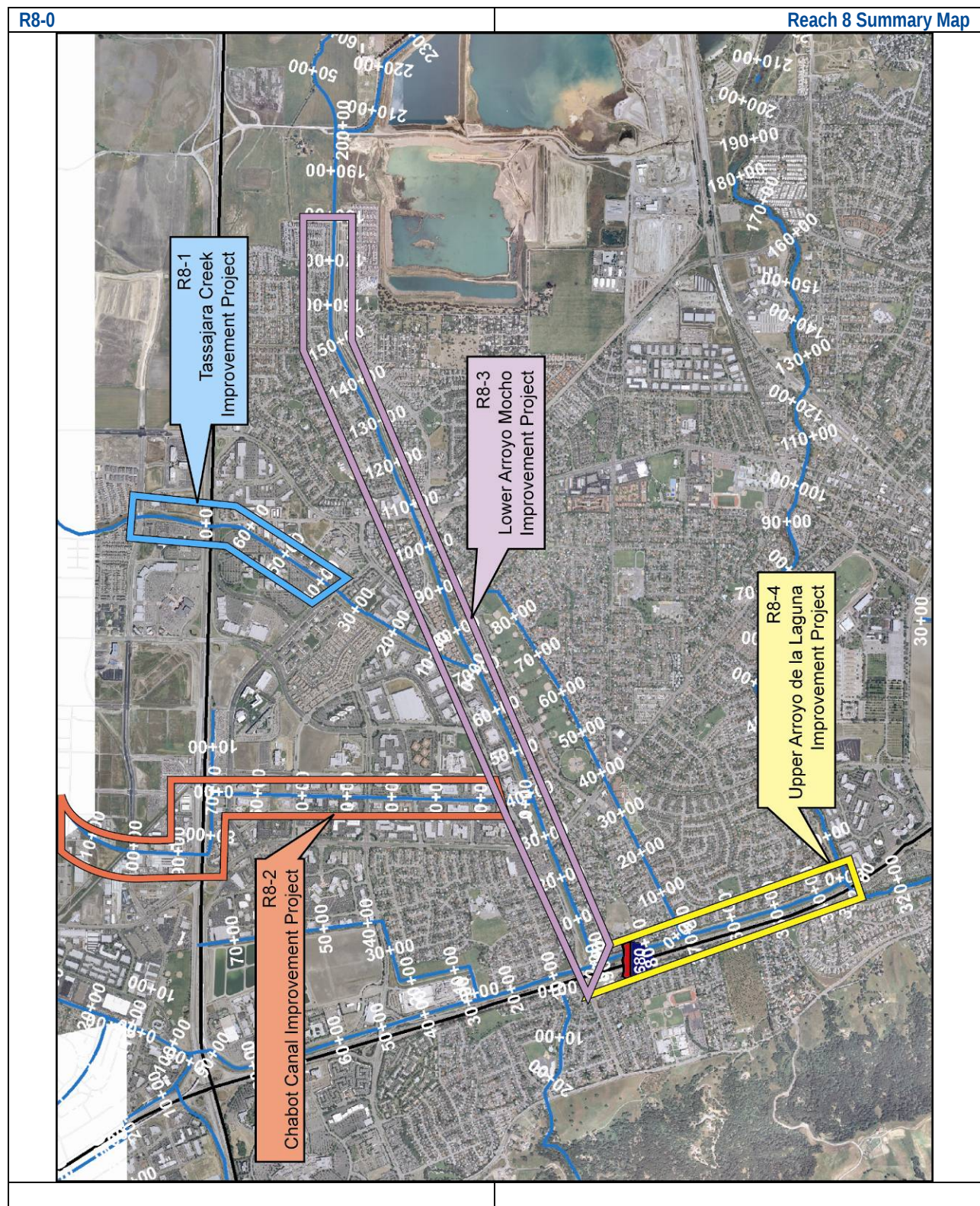
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| <b>Project Number</b>                   | R7-2                                                                                                                                                                                                                                                                                      |
| <b>Project Name</b>                     | EBRPD Trail Connections                                                                                                                                                                                                                                                                   |
| <b>Project Location</b>                 | Along Arroyo del Valle (STA 315+00 to 245+00) parallel to Vineyard Avenue from Ruby Hills Drive to Shadow Cliff Lake                                                                                                                                                                      |
| <b>Purpose</b>                          | Create a system of regional trails and provide connection to existing EBRPD trail segments.                                                                                                                                                                                               |
| <b>Project Components</b>               | 1. Construct 8,000 feet of new trail to connect the southeast portion of Shadow Cliffs to the Lake B Loop Trail proposed in project R.7-1. Project includes acquisition of 3.7 acres of land for trail (8,000 feet x 20 feet).                                                            |
| <b>Capital Cost Estimate</b>            | \$1,920,000                                                                                                                                                                                                                                                                               |
| <b>Implementation Issues</b>            | <ul style="list-style-type: none"> <li>• Coordination with EBRPD</li> </ul>                                                                                                                                                                                                               |
| <b>Project Precursors</b>               | -                                                                                                                                                                                                                                                                                         |
| <b>Project Benefits</b>                 | <ul style="list-style-type: none"> <li>• Extends recreational trail network.</li> <li>• Provides connection to existing trails.</li> <li>• Provides additional recreational opportunities in the Chain of Lakes area.</li> </ul>                                                          |
| <b>Goals/Objectives Addressed</b>       | Flood Protection & Drainage: none<br>Erosion and Sedimentation: none<br>Water Supply: none<br>Water Quality: none<br>Habitat & Environment: none<br>Recreation, Trails, and Public Education: D,G                                                                                         |
| <b>Maintenance Activities</b>           | Trail Maintenance: <ul style="list-style-type: none"> <li>• Conduct annual inspection of trails.</li> <li>• Seal cracks and repair pavement on trails, as needed.</li> <li>• Clear debris and vegetation growth, as needed.</li> <li>• Repair signs and structures, as needed.</li> </ul> |
| <b>Annual Maintenance Cost Estimate</b> | \$68,000                                                                                                                                                                                                                                                                                  |
| <b>Notes</b>                            | <ul style="list-style-type: none"> <li>• Project should be implemented in coordination with projects R.7-1 and R.4-2.</li> </ul>                                                                                                                                                          |
| <b>References</b>                       | <ul style="list-style-type: none"> <li>• City of Livermore Bikeways and Trails Master Plan, Wilbur Smith Associates, December 11, 2001</li> <li>• Personal communication with Jim Townsend, EBRPD, 2003.</li> </ul>                                                                       |



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| <b>Project Number</b>        | R7-3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Project Name</b>          | Lower Arroyo del Valle Restoration and Enhancement Project                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Project Location</b>      | Arroyo del Valle downstream of Bernal Ave. to confluence with Arroyo de la Laguna at I-680 (STA 170+00 to 0+00)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Purpose</b>               | <ul style="list-style-type: none"> <li>• Improve fisheries habitat in Arroyo del Valle by removing fish barriers and enhancing the riparian corridor.</li> <li>• Create a system of regional trails by linking existing trail segments.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Project Components</b>    | <ol style="list-style-type: none"> <li>1. Provide trail improvements and connections: <ul style="list-style-type: none"> <li>• Construct bike connection along 0.3 miles along Vervais Avenue, north on Santa Rita Road to existing bike lane along Stanley Blvd.</li> <li>• Install pedestrian and bike signaled crossing at Hopyard Road.</li> <li>• Improve approximately 800 feet of Centennial Trail ending at Main Street.</li> <li>• Construct a pedestrian bridge at Main Street.</li> <li>• Construct a pedestrian bridge above Arroyo del Valle at confluence with Arroyo de la Laguna.</li> <li>• Construct a pedestrian and bike undercrossing at the railroad tracks at Del Valle Parkway.</li> <li>• Project includes acquisition of 0.9 acres of land.</li> </ul> </li> <li>2. Remove existing fish barriers: <ul style="list-style-type: none"> <li>• Remove three fish barriers at the Division Street/Hopyard Road (station 70+00), Main Road/Santa Rita Road (station 104+00) and First Street/Stamley Boulevard (station 123+00) crossings.</li> <li>• Replace drop structure on Arroyo del Valle at the end of Corte Monterey, 150 feet upstream of the confluence of Arroyo del Valle and Arroyo de la Laguna with a fish passable structure such as a rock weir.</li> </ul> </li> <li>3. Conduct vegetation management: <ul style="list-style-type: none"> <li>• Fill riparian gaps and replant approximately 5,500 feet on each bank of Arroyo del Valle from Bernal Avenue to the confluence with ADLL. Project includes acquisition of 12.6 acres of land.</li> <li>• Remove non-native species along riparian corridor of Arroyo del Valle.</li> </ul> </li> <li>4. Repair necessary flap gates and remove unnecessary flap gates.</li> </ol> |
| <b>Capital Cost Estimate</b> | \$23,750,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Implementation Issues</b> | <ul style="list-style-type: none"> <li>• Coordinate with Southern Pacific to obtain permissions to cross railroad right-of-way (ROW).</li> <li>• Coordinate fish barrier removal with regulatory agencies such as the California Department of Fish and Game, U.S. Fish and Wildlife Service, and local stakeholder groups including the Alameda Creek Alliance.</li> <li>• Coordinate bike trail connections along city streets with City of Pleasanton.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Project Precursors</b>    | <ul style="list-style-type: none"> <li>• Develop maintenance plan for existing and future trails.</li> <li>• Storm Drain Evaluation Study: <ul style="list-style-type: none"> <li>• Identify flap gates and outfalls in need of repair or removal.</li> <li>• Identify outfalls that have a need for flap gates.</li> </ul> </li> <li>• Vegetation Management Study: <ul style="list-style-type: none"> <li>• Develop hydraulic/hydrologic modeling for Arroyo del Valle.</li> <li>• Create weighted average for channel roughness and apply to model.</li> <li>• Develop vegetation location and density parameters.</li> <li>• Restrict growth based on above parameters.</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Project Benefits</b>      | <ul style="list-style-type: none"> <li>• Provides regional trail connectivity.</li> <li>• Reduces local flooding caused by leaking flap gates.</li> <li>• Better looking channel with improved outfalls.</li> <li>• Improves fish passage for both warm water and coldwater species by removing fish barriers.</li> <li>• Improved habitat/conveyance balance through vegetation management.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

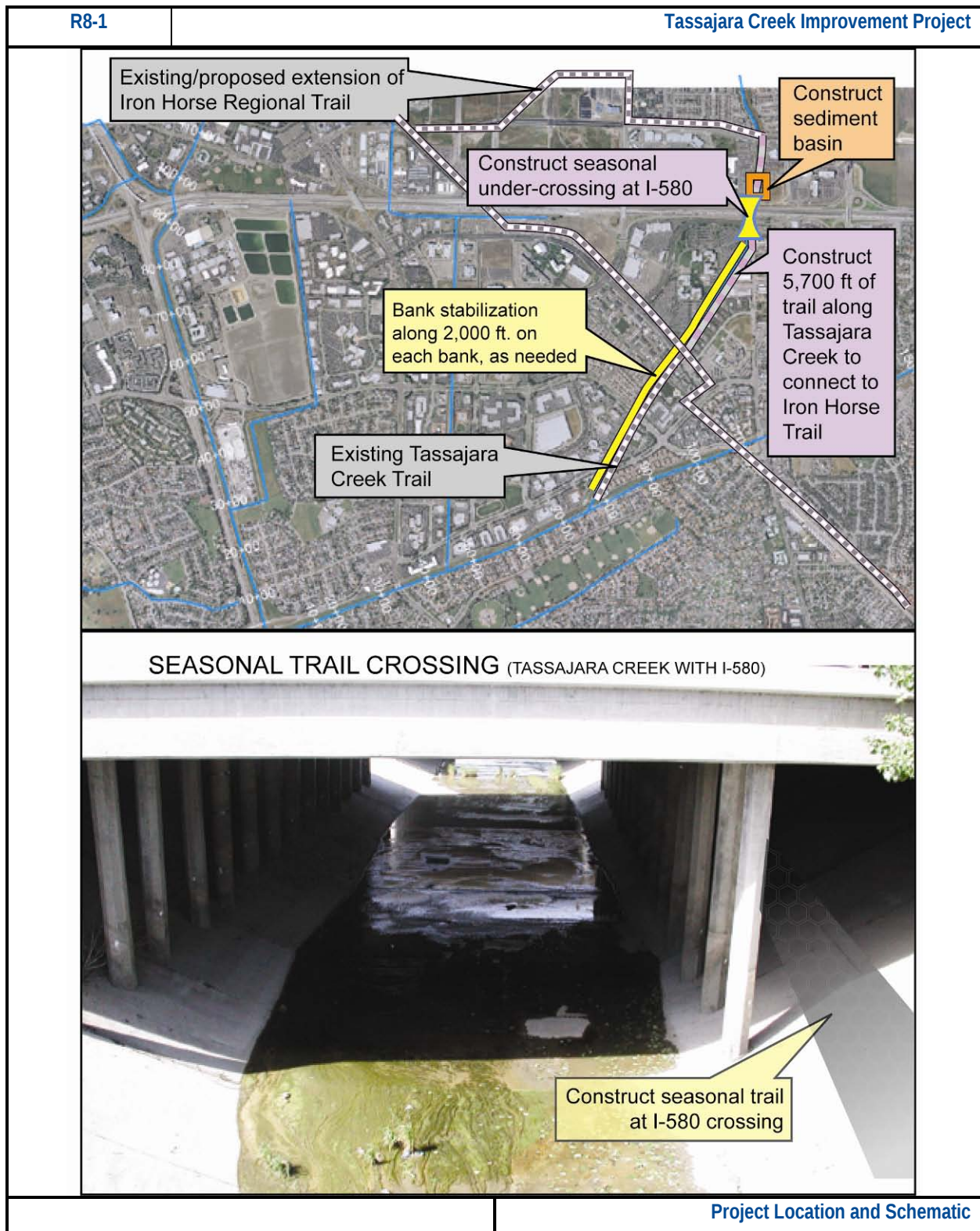
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| <b>Goals/Objectives Addressed</b>       | Flood Protection & Drainage: A, E<br>Erosion and Sedimentation: none<br>Water Supply: none<br>Water Quality: none<br>Habitat & Environment: B, C<br>Recreation, Trails, and Public Education: C, D, F, G                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Maintenance Activities</b>           | Trail Maintenance: <ul style="list-style-type: none"> <li>• Conduct annual inspection of trails.</li> <li>• Seal cracks and repair pavement on trails, as needed.</li> <li>• Clear debris and vegetation growth, as needed.</li> <li>• Repair signs and structures, as needed.</li> </ul> Vegetation Maintenance: <ul style="list-style-type: none"> <li>• Conduct annual inspection of planted riparian vegetation.</li> <li>• Conduct maintenance of riparian vegetation by utilizing a combination of methods including hand removal, mechanical or chemical clearing. The annual maintenance cost estimate is based on hand removal of riparian vegetation. In addition, invasive species control assumes herbicide application on the third of the total area annually, implementation of an herbicide monitoring program, a biological survey and mitigation for herbicide application.</li> <li>• Collect and dispose of vegetation debris.</li> </ul>  |
| <b>Annual Maintenance Cost Estimate</b> | \$456,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Notes</b>                            | <ul style="list-style-type: none"> <li>• Arroyo del Valle has been identified as potentially suitable for steelhead spawning and rearing. Benefits for warm water species and steelhead associated with barrier removal in Arroyo del Valle would be more limited than benefits associated with the ADLL/Arroyo Mocho corridor.</li> <li>• Potential to this area for program-wide SMMP mitigation, such as riparian/wetlands restoration and fisheries enhancements.</li> <li>• Potential to use material excavated as a potential source of construction/road material.</li> <li>• There is a recent proposal by the Pleasanton Trails Committee for a trail along the north bank of Arroyo del Valle connecting Bernal Avenue Bridge to Shadow Cliffs Regional Park. This trail can be looked at in the pre-design phase as an alternative to the Stanley Blvd bike trail currently providing a trail connection to Shadow Cliffs Regional Park.</li> </ul> |
| <b>References</b>                       | <ul style="list-style-type: none"> <li>• Evaluation of the Potential Historical and Current Occurrence of Steelhead within the Livermore-Amador Valley, Dr. Charles H. Hanson; Dr. Janet Sowers &amp; Dr. Allen Pastron, August 2004.</li> <li>• An Assessment of the Potential for Restoring a Viable Steelhead Trout Population in the Alameda Creek Watershed, Gunther et al. (Applied Marine Sciences; Hagar Environmental), February 7, 2000.</li> <li>• Draft Steelhead Restoration Action Plan for the Alameda Creek Watershed, Center for Ecosystem Management and Restoration, February 2003</li> </ul>                                                                                                                                                                                                                                                                                                                                               |





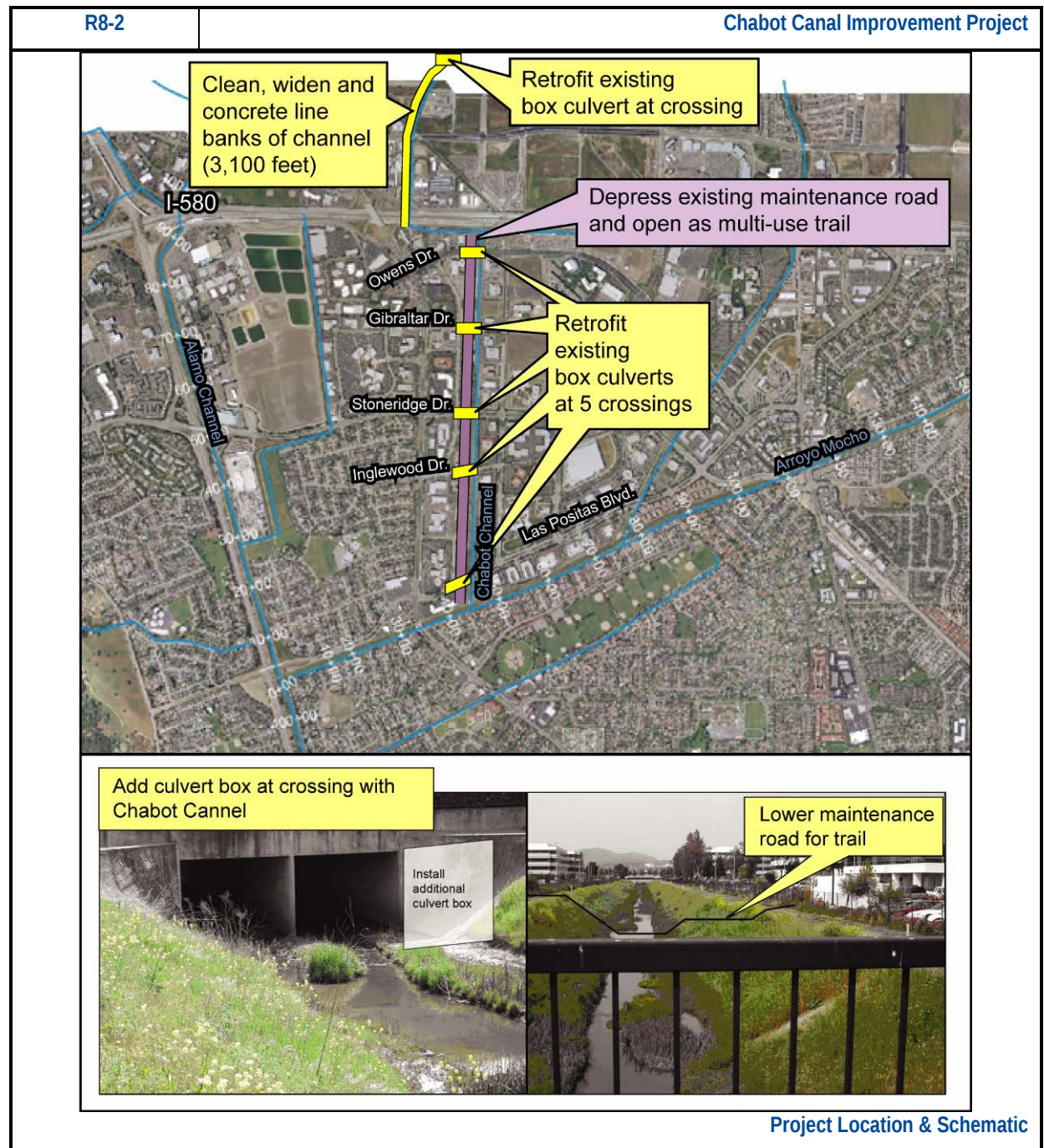
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| <b>Project Number</b>             | R8-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Project Name</b>               | Tassajara Creek Improvement Project                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Project Location</b>           | Tassajara Creek at I-580 crossing and upstream (STA 86+00 to 00+00)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Purpose</b>                    | Alleviate capacity problems in lower reach of Arroyo Mocho by trapping sediment loads from Tassajara Creek in sediment basin.<br>Promote regional trail connectivity by providing linkage between areas north and south of I-580.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Project Components</b>         | <ol style="list-style-type: none"> <li>Construct trail connections, including: <ul style="list-style-type: none"> <li>5,100 feet of trail along Tassajara Creek from Owens Drive to Dublin Boulevard.</li> <li>Under-crossing to allow for seasonal passage under I-580.</li> </ul> </li> <li>Construct a sediment basin to trap sediment in vicinity of I-580. Estimated size of basin is 1.8 AF. Project includes creation of approximately 0.9 acres of wetlands as environmental mitigation.</li> <li>Construct 2,000 feet of bank stabilization on each bank as needed from to I-580 to confluence with Arroyo Mocho (STA 60+00 to 0+00).</li> </ol>                                                                                                                                                                                                                                                                                                     |
| <b>Capital Cost Estimate</b>      | \$8,830,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Implementation Issues</b>      | <ul style="list-style-type: none"> <li>Coordination with Caltrans, BART, the City of Dublin, DSRSD, and the City of Pleasanton with respect to undercrossing design.</li> <li>Coordination between the City of Dublin and Zone 7 regarding a License Agreement to allow public access across Zone 7 property.</li> <li>Coordination between Zone 7, the City of Dublin and EBRPD regarding a Sublicense Agreement for maintenance and operation of the trail.</li> <li>Safety issues associated with trail under-crossing.</li> <li>Permitting in compliance with CWA Section 401/404.</li> <li>Conduct sediment transport study prior to project implementation to confirm size of sediment basin.</li> <li>Coordinate with County Mosquito Abatement District</li> </ul>                                                                                                                                                                                    |
| <b>Project Precursors</b>         | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Project Benefits</b>           | <ul style="list-style-type: none"> <li>Reduces sediment accumulation in Arroyo Mocho.</li> <li>Provides seasonal connection to the Iron Horse Trail north of I-580.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Goals/Objectives Addressed</b> | Flood Protection & Drainage: none<br>Erosion and Sedimentation: A, C<br>Water Supply: none<br>Water Quality: C<br>Habitat & Environment: none<br>Recreation, Trails, and Public Education: C, D, G                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Maintenance Activities</b>     | Trail Maintenance: <ul style="list-style-type: none"> <li>Conduct annual inspection of trails.</li> <li>Seal cracks and repair pavement on trails, as needed.</li> <li>Clear debris and vegetation growth, as needed.</li> <li>Repair signs and structures, as needed.</li> </ul> Sediment Basin Maintenance: <ul style="list-style-type: none"> <li>Conduct field inspection of sediment basin.</li> <li>Conduct sediment sampling prior to sediment removal and prepare Sediment Characterization Report.</li> <li>If desilting activities are conducted in a "wet" stream, conduct water quality sampling prior to and after sediment removal. Prepare a Water Quality Sampling Plan.</li> <li>Dewater side if desilting activities are conducted in a "wet" stream. Conduct desilting activities.</li> <li>Store and transport dredged material to an off-site landfill facility.</li> <li>Conduct mitigation for sediment removal activities.</li> </ul> |

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|                                         | <p>Maintenance of bank stabilization measures:</p> <ul style="list-style-type: none"> <li>• Conduct annual inspection of site.</li> <li>• Conduct repairs of bank stabilization measures, as needed.</li> </ul> <p>Wetland Mitigation (Mitigation for sediment removal):</p> <ul style="list-style-type: none"> <li>• Conduct annual visual estimates of vegetative cover and species composition to estimate vegetative cover, species diversity, presence or absence of target and invasive species, and general abundance of individual plant species. Identify species survival rate.</li> <li>• Replace wetland vegetation, as needed, to maintain at least 50% surface area coverage after second growing season.</li> <li>• Conduct hand weeding of exotic plant species during the first three years to ensure there is no interference with the development and establishment of target wetland plant species.</li> <li>• Conduct annual routine maintenance activities including access road maintenance, and debris removal.</li> </ul> |
| <b>Annual Maintenance Cost Estimate</b> | \$327,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Notes</b>                            | <ul style="list-style-type: none"> <li>• Tassajara Creek has an extensive riparian habitat immediately upstream of proposed sediment basin. Sediment is currently dropping out in this reach naturally due to the velocity reduction caused by extensive in-stream vegetation.</li> <li>• The lower portion of Tassajara Creek was identified as an aggradational reach by West Yost Associates.</li> <li>• Schaaf &amp; Wheeler identified this reach of Tassajara Creek as having adequate capacity and velocity criteria.</li> <li>• Alternatives to sediment basins such as offline ponds with habitat bypass channels, wetlands, floodplain benches, and in-line pools can be considered as part of the pre-design phase.</li> </ul>                                                                                                                                                                                                                                                                                                          |
| <b>References</b>                       | Flood Control MP, TM No. 5: Evaluation of Problem Areas & Identification of Solutions, West Yost & Associates, November 2001                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |



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| <b>Project Number</b>                | R8-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Project Name</b>                  | Chabot Canal Improvement Project                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Project Location</b>              | Chabot Canal upstream of Arroyo Mocho and Chabot Canal upstream of I-580 (STA 5+00 – STA 120+00).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Project Purpose</b>               | Increase Chabot Canal capacity to convey projected future 100-year storm flows from existing and planned developments.<br>Extend system of regional trails.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Project Components</b>            | <ol style="list-style-type: none"> <li>Increase Chabot Canal capacity downstream of I-580 (STA 65+00 – STA 5+00): <ul style="list-style-type: none"> <li>Construct additional box culverts at five crossings (Owens Drive, Gibraltar Drive, Stoneridge Drive, Inglewood Drive, and Las Positas Blvd.) to increase conveyance capacity.</li> <li>Lower one levee maintenance road to increase capacity. Maintenance road will be paved to comply with Zone 7 standards for maintenance roads located below the 100-year flood elevations.</li> </ul> </li> <li>Increase capacity of Chabot Canal upstream of I-580 (STA 120+00 to 89+00): <ul style="list-style-type: none"> <li>Clean and widen Chabot Canal upstream of I-580.</li> <li>Concrete line banks of Chabot Canal upstream of I-580.</li> <li>Retrofit box culvert at railroad tracks, north of Dublin Boulevard. The project includes creation of 5.4 acres of wetlands as environmental mitigation for concrete lining and sediment removal.</li> </ul> </li> <li>Implement trail extensions by opening: <ul style="list-style-type: none"> <li>Maintenance road for use as multi-purpose trail from the Las Positas Blvd. crossing to the Dublin/Pleasanton BART Station (STA 65+00 to 5+00).</li> </ul> </li> </ol> |
| <b>Capital Cost Estimate</b>         | \$18,420,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Implementation Issues</b>         | <ul style="list-style-type: none"> <li>Coordination with Caltrans, BART, the City of Dublin, DSRSD, the City of Pleasanton, Hacienda Business Park, and developers of Camp Parks Reserve Forces Training Area (PRFTA) property.</li> <li>Permitting in compliance with CWA Section 401/404.</li> <li>Channel lining will result in unmitigable wetland loss.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Project Precursors</b>            | <ul style="list-style-type: none"> <li>Conduct Storm Drain Evaluation Study to compare storm drain flow into Chabot Canal with Schaaf &amp; Wheeler modeling results.</li> <li>Conduct hydrologic/hydraulic modeling of Chabot Canal watershed to assess the need for additional box culverts at all 5 crossings. Model should include evaluation of stormwater runoff increases resulting from the proposed Parks PRFTA development on peak flows in Chabot Canal.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Project Benefits</b>              | <ul style="list-style-type: none"> <li>Addresses local flooding upstream of I-580.</li> <li>Conveys the 100-yr flood in Chabot Canal.</li> <li>Extends system of Regional Trails by connecting Chabot Canal to BART and proposed Iron Horse Trail.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Goals/Objectives Addressed</b>    | Flood Protection & Drainage: B, E<br>Erosion and Sedimentation: none<br>Water Supply: none<br>Water Quality: none<br>Habitat & Environment: none<br>Recreation, Trails, and Public Education: D, G                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Annual Maintenance Activities</b> | Culvert maintenance: <ul style="list-style-type: none"> <li>Conduct annual inspection of 5 culverts.</li> <li>Collect and dispose of vegetation debris.</li> </ul> Concrete Lining: <ul style="list-style-type: none"> <li>Conduct annual inspection of concrete-lined section.</li> <li>Repair concrete layer, as needed.</li> </ul> Trail Maintenance: <ul style="list-style-type: none"> <li>Conduct annual inspection of trails.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

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|                                  | <ul style="list-style-type: none"> <li>Seal cracks and repair pavement on trails, as needed.</li> <li>Clear debris and vegetation growth, as needed.</li> <li>Repair signs and structures, as needed.</li> </ul> <p>Wetlands Maintenance (mitigation):</p> <ul style="list-style-type: none"> <li>Conduct annual visual estimates of vegetative cover and species composition to estimate vegetative cover, species diversity, presence or absence of target and invasive species, and general abundance of individual plant species. Identify species survival rate.</li> <li>Replace wetland vegetation, as needed, to maintain at least 50% surface area coverage after second growing season.</li> <li>Conduct hand weeding of exotic plant species during the first three years to ensure there is no interference with the development and establishment of target wetland plant species.</li> <li>Conduct annual routine maintenance activities including access road maintenance, and debris removal.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Maintenance Cost Estimate</b> | \$58,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Notes</b>                     | <ul style="list-style-type: none"> <li>Chabot Canal was originally designed to convey the 15-year flood event and allow the local parking lots to be flooded in greater storms. In its analysis, Schaff &amp; Wheeler determined that this reach did not meet the freeboard criteria even for a 15-year event.</li> <li>The current project is based on criteria that would require all channels draining more than 1 square mile to convey the 100-year flood. The final project will depend on the selection of the design criteria and the precursors listed above. If it is determined that lesser design criteria should be applied, a smaller scale project that does not include major conveyance improvements could be implemented.</li> <li>The city of Dublin has initiated a General Plan Amendment Study (GPA) to allow for the eventual transfer and private development of 187 acres of Army property on the south end of Parks RFTA. Storm runoff from this property currently discharges into Chabot Canal, and as a result could significantly increase storm flows. The potential increase in storm flows will have to be evaluated before the project components are finalized.</li> <li>Regional Water Quality Control Board (RWQCB) representatives have expressed concerns at the SMMP workshops over concrete lining alternatives.</li> <li>The lowering of Zone 7's maintenance road below the 100-year water surface elevation would require that the road be concrete.</li> <li>Location of wetlands to be determined at programmatic level.</li> <li>Area north of I-580 is proposed critical habitat for California Red-Legged Frog. Improvements north of I-580 should be made to minimize impacts on special-status species.</li> </ul> |
| <b>References</b>                | <ul style="list-style-type: none"> <li>Flood Control MP, TM No. 5: Evaluation of Problem Areas &amp; Identification of Solutions, West Yost &amp; Associates, November 2001</li> <li>Special Drainage Area 7-1 Fee Structure Update, Schaaf &amp; Wheeler, June 30, 2000</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

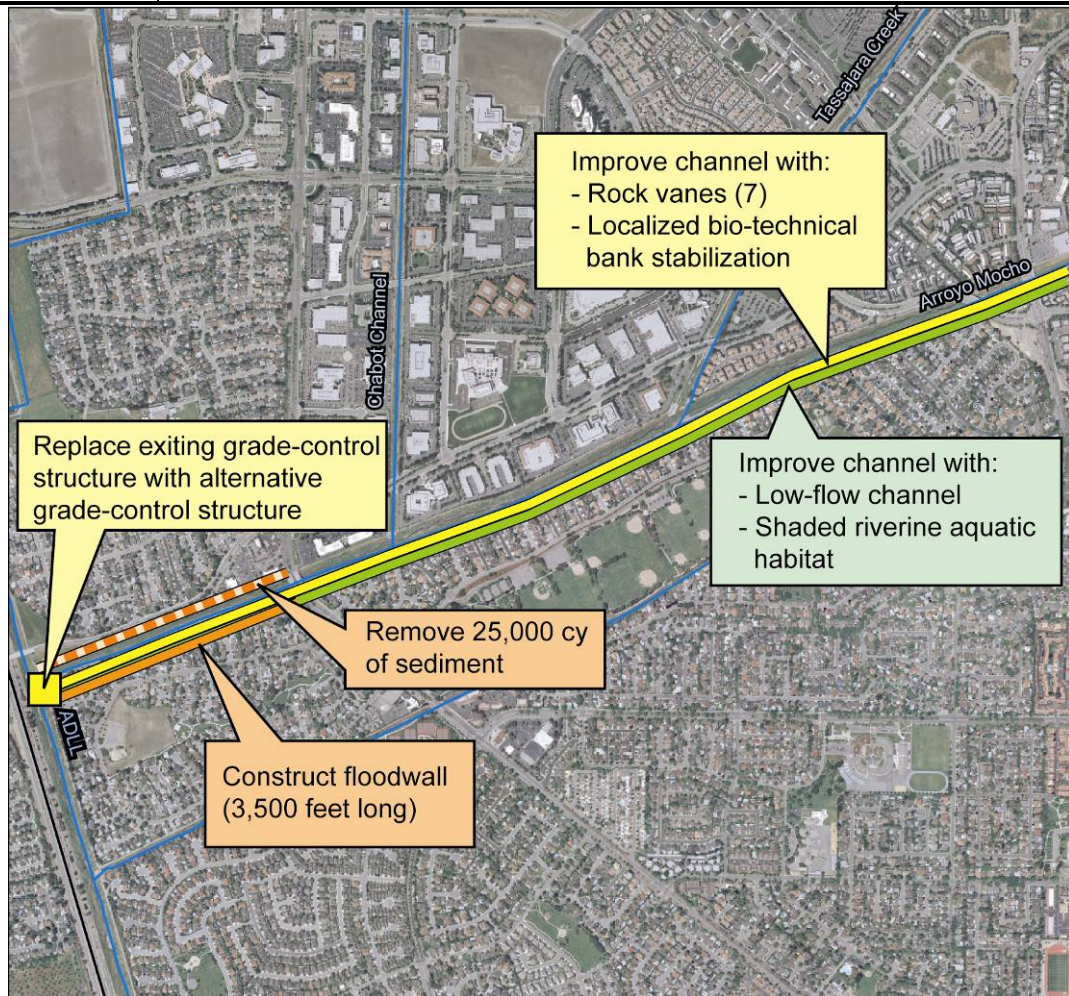


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| <b>Project Number</b>                | R8-3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Project Name</b>                  | Lower Arroyo Mocho Improvement Project                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Project Location</b>              | Arroyo Mocho between the confluence with Arroyo de la Laguna and the confluence with Arroyo las Positas, between STA 0+00 and 170+00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Purpose</b>                       | Remove sediment to curtail aggradation of Arroyo Mocho at confluence with Arroyo de la Laguna. Enhance in-stream aquatic habitat for steelhead.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Project Components</b>            | <ol style="list-style-type: none"> <li>1. Remove sediment along 3,500 feet (one-time removal of up to 25,000 cubic yard) of Arroyo Mocho, from confluence with Arroyo de la Laguna to Hopyard Road to increase hydraulic capacity. Project includes creation of 8.2 acres of wetlands as environmental mitigation for sediment removal.</li> <li>2. Build a new floodwall along Arroyo Mocho south of the maintenance road to provide adequate freeboard/flood protection (approximately 3,500 feet of 4 feet high floodwall from the confluence with ADLL to the Hopyard Road crossing).</li> <li>3. Construct localized bio-technical bank slope stabilization measures along approximately 5,100 feet, ending 50' upstream of the confluence with ADLL.</li> <li>4. Stabilizing channel bed by utilizing grade control structures such as rock vanes at 7 locations.</li> <li>5. Conduct habitat enhancement, including: <ul style="list-style-type: none"> <li>• Replacing the existing drop structure at confluence of Arroyo Mocho and Arroyo de la Laguna with an alternative grade-control structure such as a vortex rock weir suitable for fish passage.</li> <li>• Creating low-flow channel along 17,000 feet of Arroyo Mocho (STA 17+00 to 0+00; assuming a 1.25 meandering ratio).</li> <li>• Planting approximately 15.6 acres of shaded riverine aquatic cover on top of banks and slopes (STA 17+00 to 0+00; assuming 40 feet wide planting along 8,500 feet on each bank).</li> </ul> </li> </ol> |
| <b>Capital Cost Estimate</b>         | \$29,830,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Implementation Issues</b>         | <ul style="list-style-type: none"> <li>• Permitting in compliance with CWA Section 401/404.</li> <li>• Coordination with RWQCB</li> <li>• Channel lining will result in unmitigable wetland loss.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Project Precursors</b>            | <ul style="list-style-type: none"> <li>• Confirm need for sediment removal with hydrologic/hydraulic modeling of Arroyo Mocho assuming Chain of Lakes storage, proposed riparian enhancement and existing sediment conditions.</li> <li>• Conduct geomorphology study to determine the meandering characteristics of the proposed low-flow channel.</li> <li>• Conduct Storm Drain Evaluation Study for revised hydraulic gradeline determined above.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Project Benefits</b>              | <ul style="list-style-type: none"> <li>• Creates adequate channel capacity while incorporating habitat enhancement measures.</li> <li>• Provide the Valley Trails neighborhood with adequate freeboard/flood protection.</li> <li>• Promotes restoration efforts along ADLL and Arroyo Mocho, both identified as potential spawning and rearing habitat for steelhead.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Goals/Objectives Addressed</b>    | Flood Protection & Drainage: A, B, C<br>Erosion and Sedimentation: A, B, C<br>Water Supply: none<br>Water Quality: C, E<br>Habitat & Environment: B, C, E, F<br>Recreation, Trails, and Public Education: C, E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Annual Maintenance Activities</b> | Vegetation Maintenance: <ul style="list-style-type: none"> <li>• Conduct annual inspection of planted riparian vegetation.</li> <li>• Conduct maintenance of riparian vegetation by utilizing a combination of methods including hand removal, mechanical or chemical clearing. The</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

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|                                  | <p>annual maintenance cost estimate is based on hand removal of riparian vegetation.</p> <ul style="list-style-type: none"> <li>Collect and dispose of vegetation debris.</li> </ul> <p>Maintenance of bank stabilization measures:</p> <ul style="list-style-type: none"> <li>Conduct annual inspection of site.</li> <li>Conduct repairs of bank stabilization measures, as needed.</li> </ul> <p>Wetlands Maintenance (mitigation):</p> <ul style="list-style-type: none"> <li>Conduct annual visual estimates of vegetative cover and species composition to estimate vegetative cover, species diversity, presence or absence of target and invasive species, and general abundance of individual plant species. Identify species survival rate.</li> <li>Replace wetland vegetation, as needed, to maintain at least 50% surface area coverage after second growing season.</li> <li>Conduct hand weeding of exotic plant species during the first three years to ensure there is no interference with the development and establishment of target wetland plant species.</li> <li>Conduct annual routine maintenance activities including access road maintenance, and debris removal.</li> </ul> |
| <b>Maintenance Cost Estimate</b> | \$288,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Notes</b>                     | <ul style="list-style-type: none"> <li>Need for sediment removal should be assessed based on upstream storage of Arroyo Mocho and Arroyo las Positas flood flows in Chain of Lakes.</li> <li>Floodwall along Arroyo Mocho to be set back as far as possible from channel.</li> <li>Potential to modify the existing sound wall for use as a floodwall will be evaluated during the design phase.</li> <li>Specific locations of bank stabilization measures and alternative grade-control structures will be determined during the design phase.</li> <li>Location of wetlands and/or mitigation lands would be determined during the implementation phase at a project level in coordination with resources agencies.</li> <li>Potential to use lower Arroyo Mocho for SMMP program-wide mitigation.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>References</b>                | Flood Control MP, TM No. 5: Evaluation of Problem Areas & Identification of Solutions, West Yost & Associates, November 2001                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

R8-3

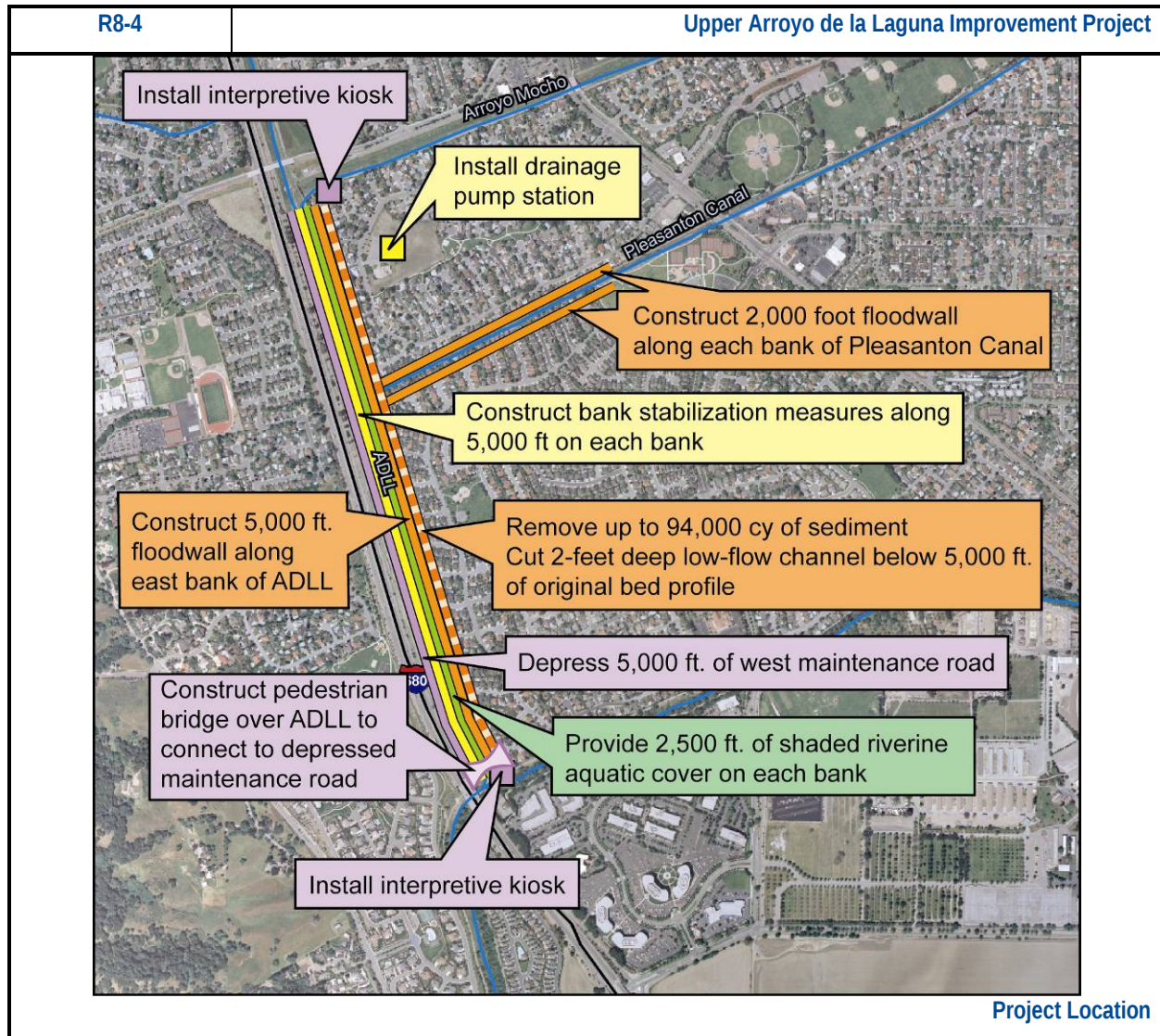
## Lower Arroyo Mocho Improvement Project

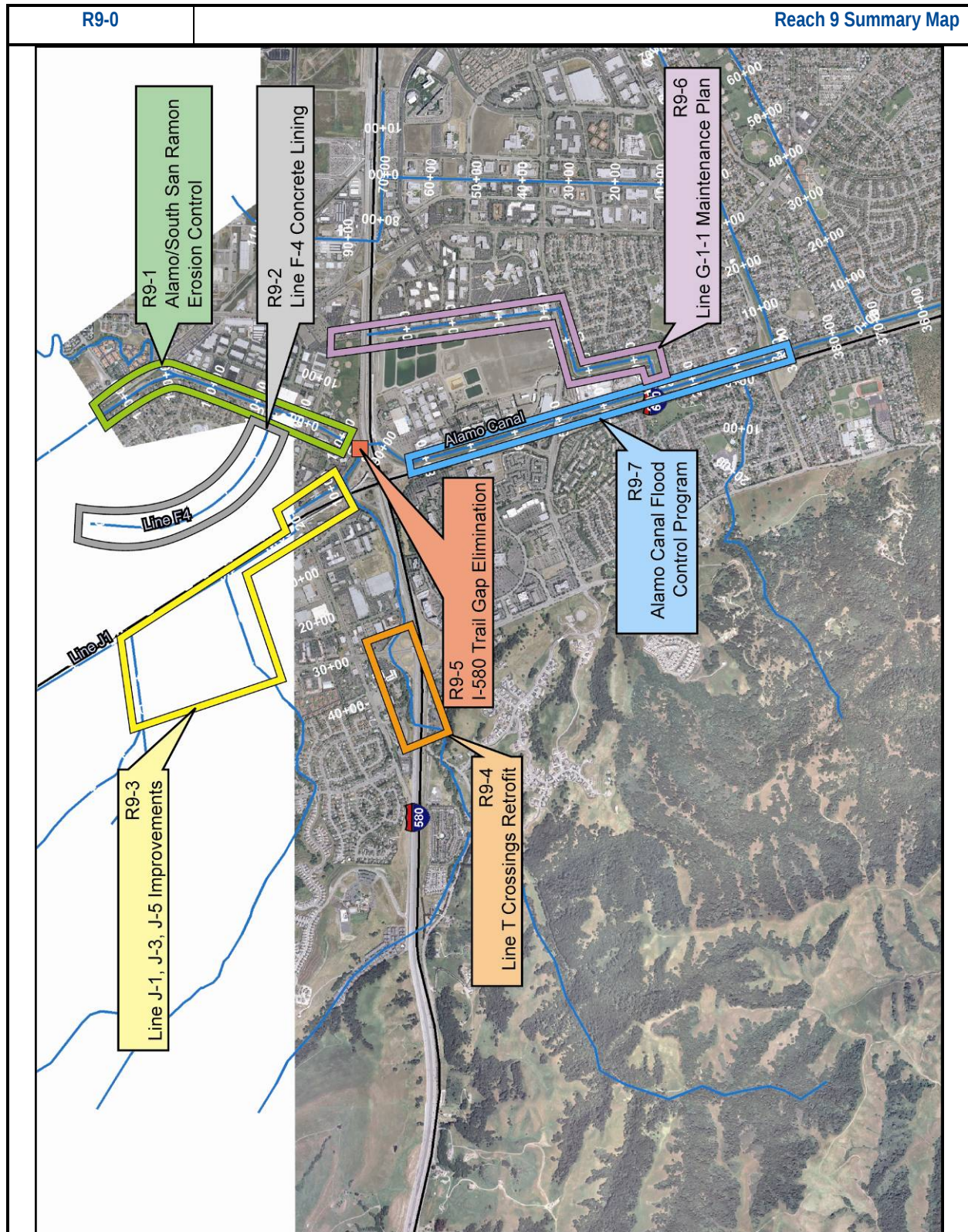


Project Location

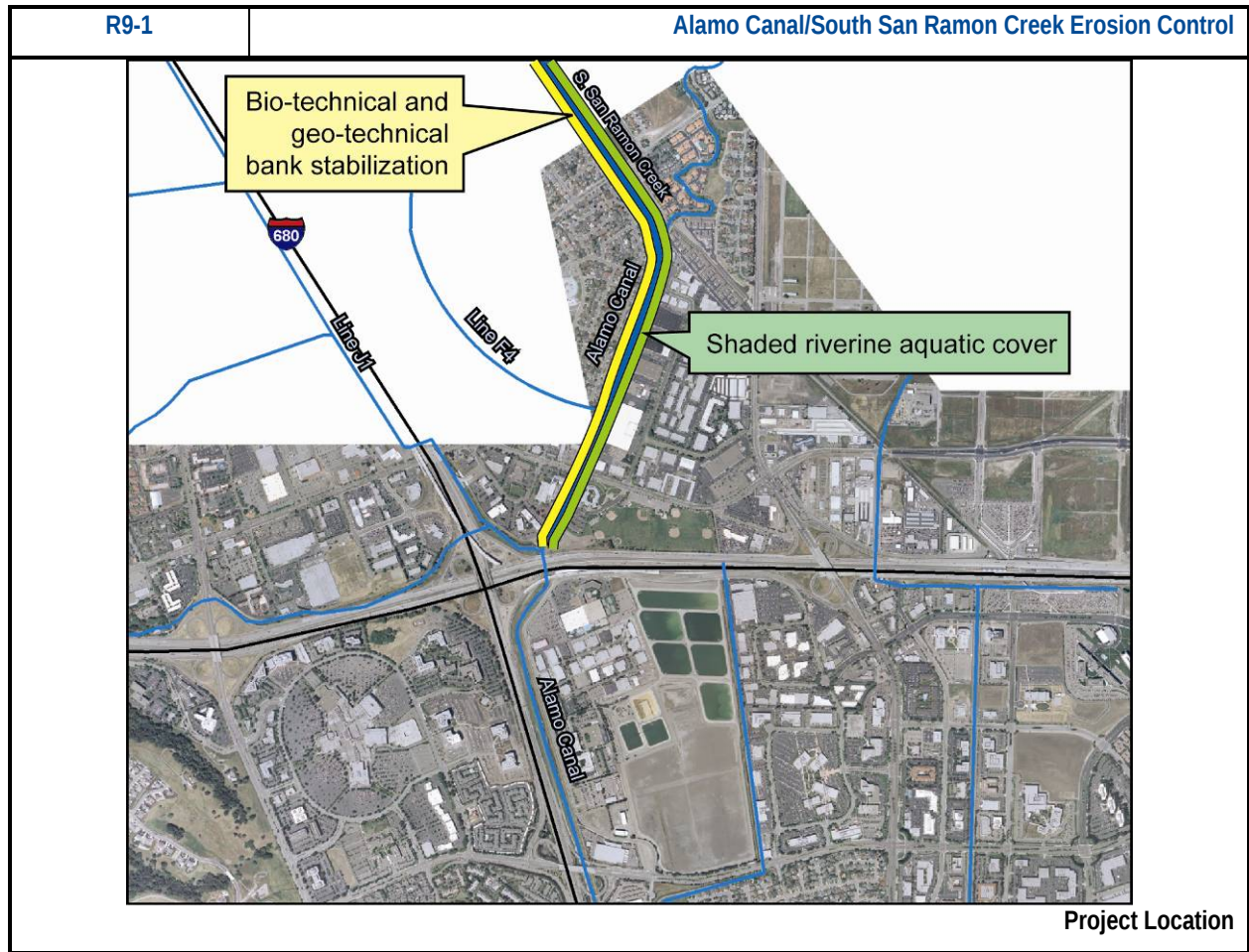
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| <b>Project Number</b>        | R8-4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Project Name</b>          | Upper Arroyo de la Laguna (ADLL) Improvement Project                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Project Location</b>      | ADLL from confluence with Arroyo del Valle to confluence with Arroyo Mocho (STA 380+00 to 335+00)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Purpose</b>               | Protect properties from flooding during a 100-year flood event at build-out conditions.<br>Restore the reach capacity through sediment removal.<br>Enhance the in-stream aquatic habitat and restore steelhead passage along ADLL.<br>Provide a recreational corridor with interpretive features for public use.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Project Components</b>    | <ol style="list-style-type: none"> <li>1. Remove sediment (one-time removal of up to 94,000 cubic yards). Project includes creation of 9.2 acres of wetlands as environmental mitigation for sediment removal.</li> <li>2. Depress 5,000 feet of west maintenance road along I-680.</li> <li>3. Construct 5,000 feet of bank stabilization measures due to rotational failure along both sides of channel.</li> <li>4. Build floodwalls at 2 locations: <ul style="list-style-type: none"> <li>• 5,000 feet of 4 feet high floodwall to provide Valley Trails and the area south of Pleasanton Canal with adequate freeboard/flood protection (from confluence of ADLL with Arroyo del Valle to confluence with Arroyo Mocho).</li> <li>• 2,000 feet of 4 feet high floodwall along Pleasanton Canal to provide Valley Trails and Del Prado neighborhoods with adequate freeboard/flood protection (STA 0+00 – 20+00).</li> </ul> </li> <li>5. Install a drainage pump station to drain water out of the Valley Trails neighborhood and local areas east of ADLL.</li> <li>6. Conduct habitat improvements, including: <ul style="list-style-type: none"> <li>• Plant 5.7 acres of shaded riverine aquatic cover on top of banks and slopes (assuming 50 feet wide planting along 2,500 feet on each bank).</li> <li>• Create low-flow meandering channel along 5,000 feet of Arroyo de la Laguna by cutting 2 feet below original channel bed (assuming a meandering ratio of 1.25).</li> </ul> </li> <li>7. Recreational features include: <ul style="list-style-type: none"> <li>• Constructing two interpretive kiosks at: 1) confluence of Arroyo del Valle and Arroyo de la Laguna; and, 2) confluence of Arroyo Mocho and Arroyo de la Laguna.</li> <li>• Constructing 1 pedestrian bridge over ADLL to connect maintenance roads on each side of ADLL immediately upstream of confluence of ADLL with Arroyo del Valle.</li> </ul> </li> </ol> |
| <b>Capital Cost Estimate</b> | \$50,600,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Implementation Issues</b> | <ul style="list-style-type: none"> <li>• Coordination with Caltrans and City of Pleasanton.</li> <li>• Construction of Valley Trails improvements need to be coordinated with the City of Pleasanton.</li> <li>• Permitting in compliance with CWA Section 401/404.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Project Precursors</b>    | <ul style="list-style-type: none"> <li>• Verify volume of sediment accumulated.</li> <li>• Conduct geotechnical evaluation of channel slopes to define appropriate bank stabilization measures.</li> <li>• Conduct geomorphology study to determine the meandering characteristics of the proposed low-flow channel.</li> <li>• Conduct hydrologic/hydraulic analysis to verify that channel capacity and freeboard is adequate after planned channel improvements are implemented (including sediment removal, depression of west maintenance road, and planting of shaded riverine aquatic cover), and to confirm need for floodwalls.</li> <li>• Conduct Storm Drain Evaluation Study.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Project Benefits</b>      | <ul style="list-style-type: none"> <li>• Improves potential fisheries corridor from Alameda Creek to the upstream reaches</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

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|                                      | <p>of Arroyo Mocho.</p> <ul style="list-style-type: none"> <li>Improves riparian habitat.</li> <li>Restores channel capacity and provides adequate freeboard/flood protection.</li> <li>Stabilizes existing bank erosion.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Goals/Objectives Addressed</b>    | <p>Flood Protection &amp; Drainage: A, B, C, D, E<br/> Erosion and Sedimentation: A, B, C<br/> Water Supply: none<br/> Water Quality: C<br/> Habitat &amp; Environment: A, B, C, E<br/> Recreation, Trails, and Public Education: B, D</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Annual Maintenance Activities</b> | <p>Vegetation Maintenance:</p> <ul style="list-style-type: none"> <li>Conduct annual inspection of planted riparian vegetation.</li> <li>Conduct maintenance of riparian vegetation by utilizing a combination of methods including hand removal, mechanical or chemical clearing. The annual maintenance cost estimate is based on hand removal of riparian vegetation.</li> <li>Collect and dispose of vegetation debris.</li> </ul> <p>Maintenance of bank stabilization measures:</p> <ul style="list-style-type: none"> <li>Conduct annual inspection of site.</li> <li>Conduct repairs of bank stabilization measures, as needed.</li> </ul> <p>Maintenance Road Maintenance:</p> <ul style="list-style-type: none"> <li>Conduct annual inspection.</li> <li>Seal cracks and repair, as needed.</li> <li>Clear debris and vegetation growth, as needed.</li> </ul> <p>Pump Station:</p> <ul style="list-style-type: none"> <li>Conduct annual inspection.</li> <li>Repair, as needed.</li> </ul> <p>Interpretive kiosks:</p> <ul style="list-style-type: none"> <li>Repair signs, as needed.</li> </ul> <p>Wetlands Maintenance (mitigation):</p> <ul style="list-style-type: none"> <li>Conduct annual visual estimates of vegetative cover and species composition to estimate vegetative cover, species diversity, presence or absence of target and invasive species, and general abundance of individual plant species. Identify species survival rate.</li> <li>Replace wetland vegetation, as needed, to maintain at least 50% surface area coverage after second growing season.</li> <li>Conduct hand weeding of exotic plant species during the first three years to ensure there is no interference with the development and establishment of target wetland plant species.</li> <li>Conduct annual routine maintenance activities including access road maintenance, and debris removal.</li> </ul> |
| <b>Maintenance Cost Estimate</b>     | \$872,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Notes</b>                         | <ul style="list-style-type: none"> <li>This reach is characterized by heavy sediment deposition and erosion of sediment deposited at the toe of banks.</li> <li>This reach does not meet freeboard requirements under current conditions.</li> <li>Location of wetlands to be determined at programmatic level.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>References</b>                    | Flood Control MP, TM No. 5: Evaluation of Problem Areas & Identification of Solutions, West Yost & Associates, November 2001                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

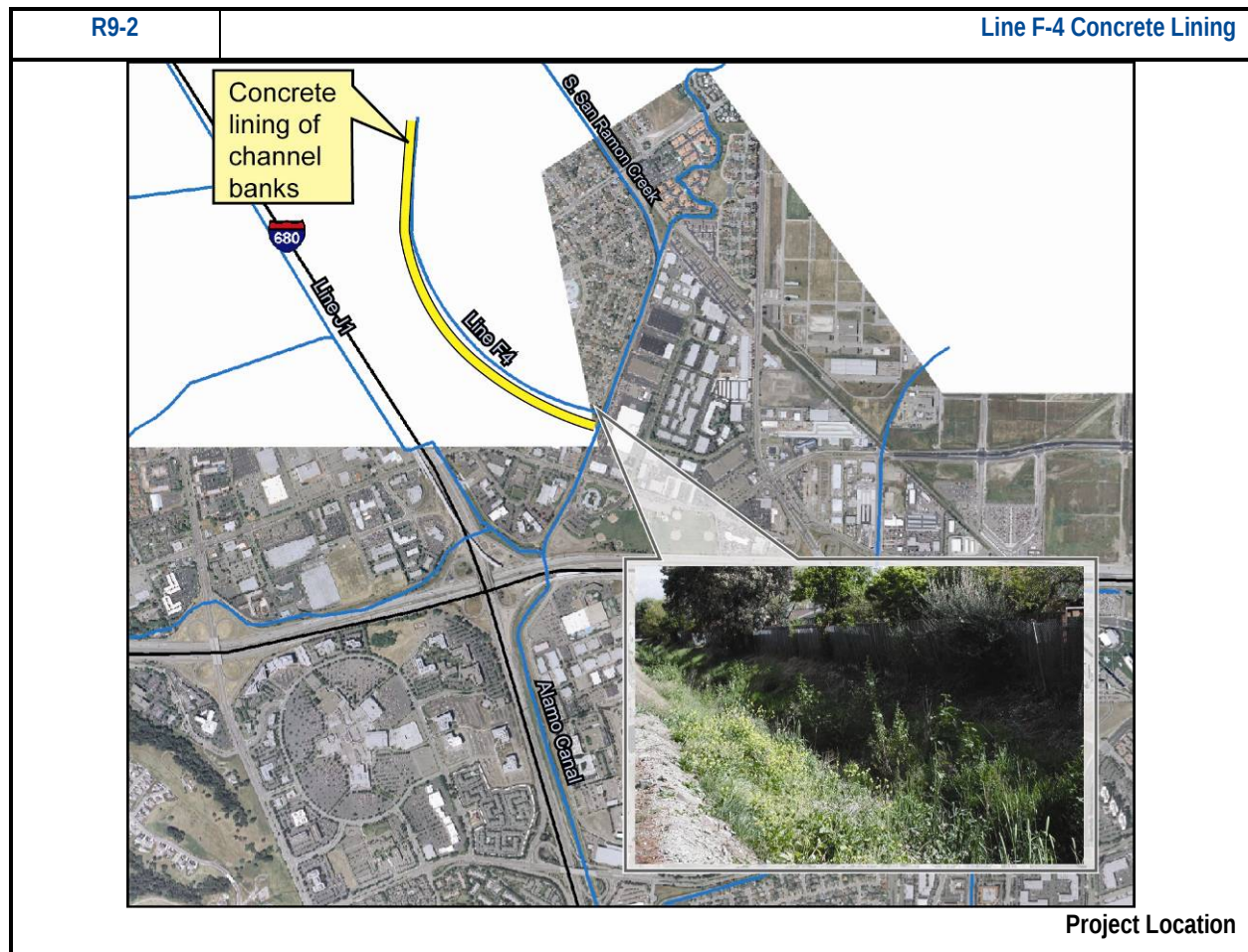




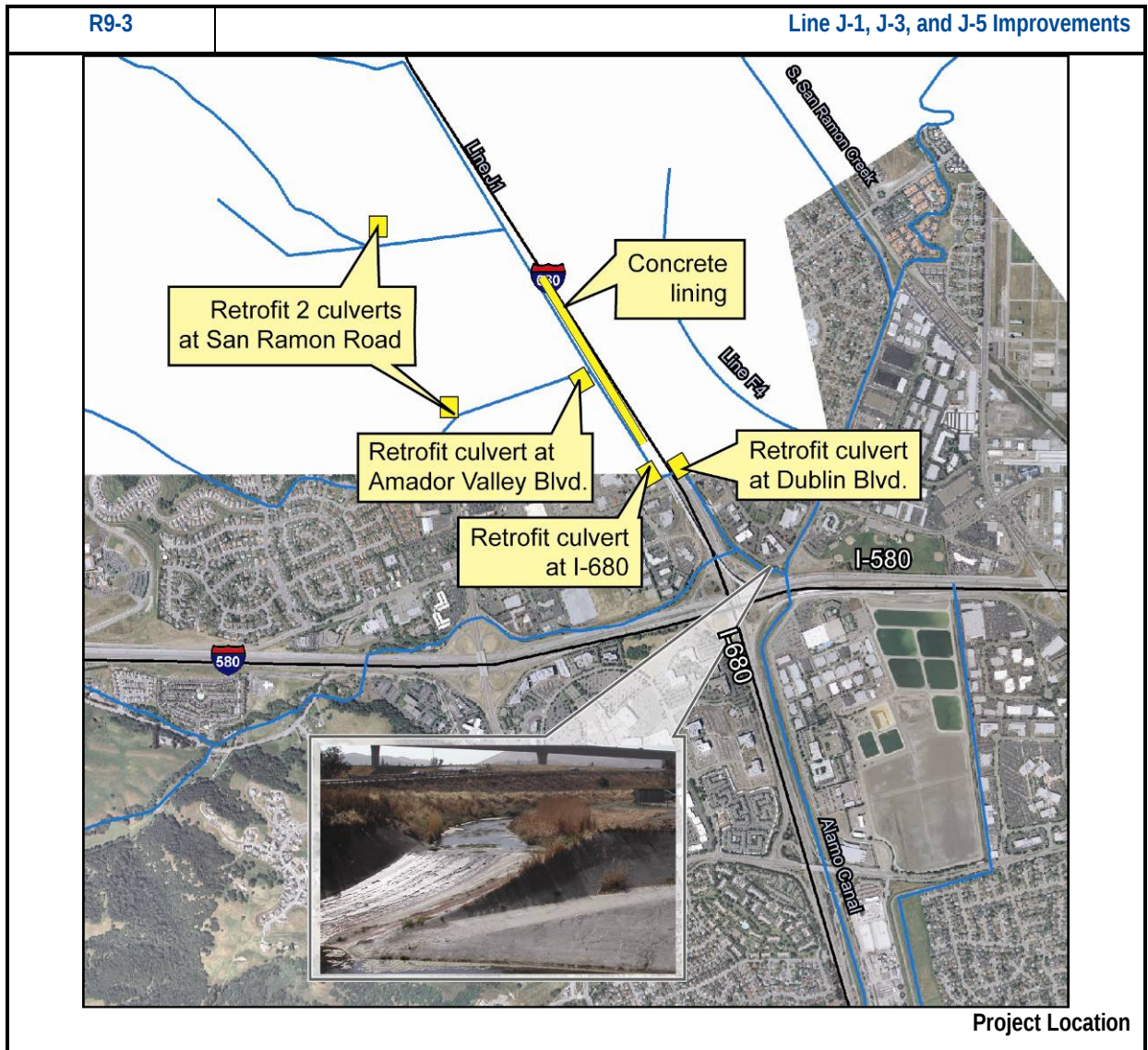
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| <b>Project Number</b>                   | R9-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Project Name</b>                     | Alamo Canal/South San Ramon Creek Erosion Control                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Project Location</b>                 | Alamo Canal north of I-580 (STA 135+00 to 100+00)<br>South San Ramon Creek south of the Alameda/Contra Costa County line (STA 28+50 to 0+00)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Purpose</b>                          | Stabilize the banks of Alamo Canal and South San Ramon Creek in order to decrease sediment load and curtail aggradation along the lower reaches of Alamo Canal.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Project Components</b>               | <ol style="list-style-type: none"> <li>1. Stabilize banks, including: <ul style="list-style-type: none"> <li>• 2,100 feet of channel (half of the channel length) along both banks of Alamo Canal using a combination of bio- and geo-technical bank stabilization methods.</li> <li>• 2,850 feet of channel banks along South San Ramon Creek using a combination of bio- and geo-technical bank stabilization methods such as geo-grid construction.</li> </ul> </li> <li>2. Provide shaded riverine aquatic cover and habitat enhancement along 5,000 ft of channel.</li> </ol>                                                             |
| <b>Capital Cost Estimate</b>            | \$11,760,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Implementation Issues</b>            | <ul style="list-style-type: none"> <li>• Permitting, including Clean Water Act Section 401/404.</li> <li>• Coordinate with DSRSD on facility locations</li> <li>• Channel lining will result in unmitigable wetland loss.</li> <li>• Coordinate with the City of Dublin</li> </ul>                                                                                                                                                                                                                                                                                                                                                             |
| <b>Project Precursors</b>               | <ul style="list-style-type: none"> <li>• Hydraulic modeling to determine maximum roughness coefficient allowable for channel capacity and the amount of planting on channel slopes and banks.</li> <li>• Geomorphologic analysis.</li> <li>• Develop Vegetation Management Plan.</li> </ul>                                                                                                                                                                                                                                                                                                                                                    |
| <b>Project Benefits</b>                 | <ul style="list-style-type: none"> <li>• Reduces high velocity in S. San Ramon Creek.</li> <li>• Controls erosion in Alamo Canal through bank stabilization measures.</li> <li>• Provides aesthetic improvements along channel through increased vegetation.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Goals/Objectives Addressed</b>       | Flood Protection & Drainage: none<br>Erosion and Sedimentation: A, B, C<br>Water Supply: none<br>Water Quality: C<br>Habitat & Environment: C<br>Recreation, Trails, and Public Education: none                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Maintenance Activities</b>           | Maintenance of bank stabilization measures: <ul style="list-style-type: none"> <li>• Conduct annual inspection of site.</li> <li>• Conduct repairs of bank stabilization measures, as needed.</li> </ul> Vegetation Maintenance: <ul style="list-style-type: none"> <li>• Conduct annual inspection of planted riparian vegetation.</li> <li>• Conduct maintenance of riparian vegetation by utilizing a combination of methods including hand removal, mechanical or chemical clearing. The annual maintenance cost estimate is based on hand removal of riparian vegetation.</li> <li>• Collect and dispose of vegetation debris.</li> </ul> |
| <b>Annual Maintenance Cost Estimate</b> | \$436,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Notes</b>                            | <ul style="list-style-type: none"> <li>• South San Ramon Creek is currently eroding and contributing to downstream aggradation in Alamo Canal.</li> <li>• This project utilizes bio-technical and geo-technical bank stabilization. Alternate bank stability methods such as cutting back the slope may be required if hydraulic modeling indicates that required capacity will not allow increased vegetation on channel banks. Space constraints could be an issue that needs to be analyzed if slope cut-backs were to be used.</li> </ul>                                                                                                  |
| <b>References</b>                       | Flood Control MP, TM No. 5: Evaluation of Problem Areas & Identification of Solutions, West Yost & Associates, November 2001                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |



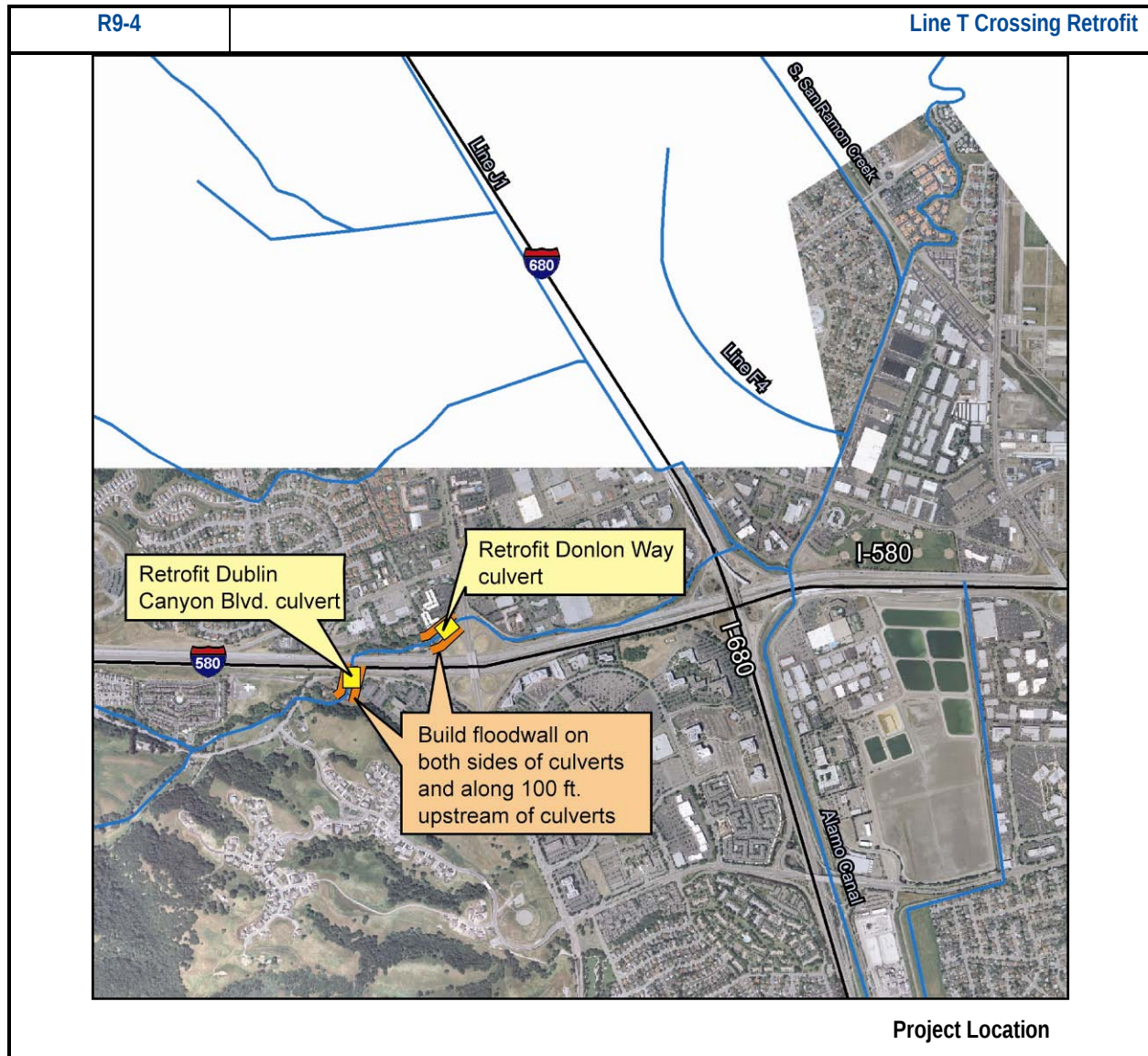
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| <b>Project Number</b>                   | R9-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Project Name</b>                     | Line F-4 Concrete Lining                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Project Location</b>                 | Line F-4 (STA 50+00 to 0+00)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Purpose</b>                          | Stabilize banks which are currently backing adjacent residences' backyards and arrest further property loss.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Project Components</b>               | 1. Concrete line 5,000 feet of channel banks. Project includes creation of 3.7 acres of wetlands as environmental mitigation for concrete lining.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Capital Cost Estimate</b>            | \$1,250,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Implementation Issues</b>            | <ul style="list-style-type: none"> <li>• Permitting, especially Clean Water Act Section 401/404</li> <li>• Coordination with RWQCB, CDFG, City of Dublin, and DSRSD.</li> <li>• Channel lining will result in unmitigable wetland loss.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Project Precursors</b>               | <ul style="list-style-type: none"> <li>• Hydrologic/hydraulic modeling.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Project Benefits</b>                 | <ul style="list-style-type: none"> <li>• Reduces maintenance needs and costs.</li> <li>• Stabilizes stream banks.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Goals/Objectives Addressed</b>       | Flood Protection & Drainage: none<br>Erosion and Sedimentation: A<br>Water Supply: none<br>Water Quality: none<br>Habitat & Environment: none<br>Recreation, Trails, and Public Education: none                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Maintenance Activities</b>           | Wetlands Maintenance (mitigation): <ul style="list-style-type: none"> <li>• Conduct annual visual estimates of vegetative cover and species composition to estimate vegetative cover, species diversity, presence or absence of target and invasive species, and general abundance of individual plant species. Identify species survival rate.</li> <li>• Replace wetland vegetation, as needed, to maintain at least 50% surface area coverage after second growing season.</li> <li>• Conduct hand weeding of exotic plant species during the first three years to ensure there is no interference with the development and establishment of target wetland plant species.</li> <li>• Conduct annual routine maintenance activities including access road maintenance, and debris removal.</li> </ul> |
| <b>Annual Maintenance Cost Estimate</b> | \$74,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Notes</b>                            | There was concern about concrete lining projects expressed during stakeholder workshops. However, right-of-way restrictions limit ability to implement other solutions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>References</b>                       | Personal communication with Joe Seto, Zone 7 Water Agency, 2003                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |



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| <b>Project Number</b>                   | R9-3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Project Name</b>                     | Line J-1, J-3 and J-5 Improvements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Project Location</b>                 | Line J-1 from Alamo Canal to station 55+00 in the City of Dublin                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Purpose</b>                          | The area adjacent to Line J-1 is prone to flooding during large flood events. The purpose of this project is to increase the channel capacity by decreasing the roughness coefficient of the channel. In addition, the project addresses three undersized culverts at Amador Valley Boulevard, Dublin Boulevard, and I-680.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Project Components</b>               | <ol style="list-style-type: none"> <li>1. Increase channel capacity by concrete lining 2,100' of channel banks along Line J-1 (STA 56+00 to 35+00) to decrease channel roughness. Project includes creation of 1.9 acres of wetlands as environmental mitigation for concrete lining.</li> <li>2. Retrofit culverts at San Ramon Road (2), Amador Valley Boulevard (1), I-680 (1), and Dublin Boulevard (1) to create additional freeboard by raising the bridge wall and excavating another box to create an additional flow path.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Capital Cost Estimate</b>            | \$8,700,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Implementation Issues</b>            | <ul style="list-style-type: none"> <li>• Permitting, Clean Water Act Section 401/404.</li> <li>• Coordination with RWQCB, CDFG, City of Dublin, and DSRSD.</li> <li>• Channel lining will result in unmitigable wetland loss.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Project Precursors</b>               | Hydrologic/hydraulic modeling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Project Benefits</b>                 | <ul style="list-style-type: none"> <li>• Reduce current 100-year flooding</li> <li>• Reduce maintenance requirements</li> <li>• Protect infrastructure</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Goals/Objectives Addressed</b>       | Flood Protection & Drainage: B<br>Erosion and Sedimentation: A<br>Water Supply: none<br>Water Quality: none<br>Habitat & Environment: none<br>Recreation, Trails, and Public Education: none                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Maintenance Activities</b>           | Culvert Maintenance: <ul style="list-style-type: none"> <li>• Perform annual inspection.</li> <li>• Collect and dispose of vegetation debris.</li> </ul> Wetlands Maintenance (mitigation): <ul style="list-style-type: none"> <li>• Conduct annual visual estimates of vegetative cover and species composition to estimate vegetative cover, species diversity, presence or absence of target and invasive species, and general abundance of individual plant species. Identify species survival rate.</li> <li>• Replace wetland vegetation, as needed, to maintain at least 50% surface area coverage after second growing season.</li> <li>• Conduct hand weeding of exotic plant species during the first three years to ensure there is no interference with the development and establishment of target wetland plant species.</li> <li>• Conduct annual routine maintenance activities including access road maintenance, and debris removal.</li> </ul> |
| <b>Annual Maintenance Cost Estimate</b> | \$3,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Notes</b>                            | There was concern about concrete lining expressed during stakeholder workshops, however there are space constraints that prevent the expansion of the existing channel.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>References</b>                       | Personal communication with Zone 7 Staff, Spring 2005                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |



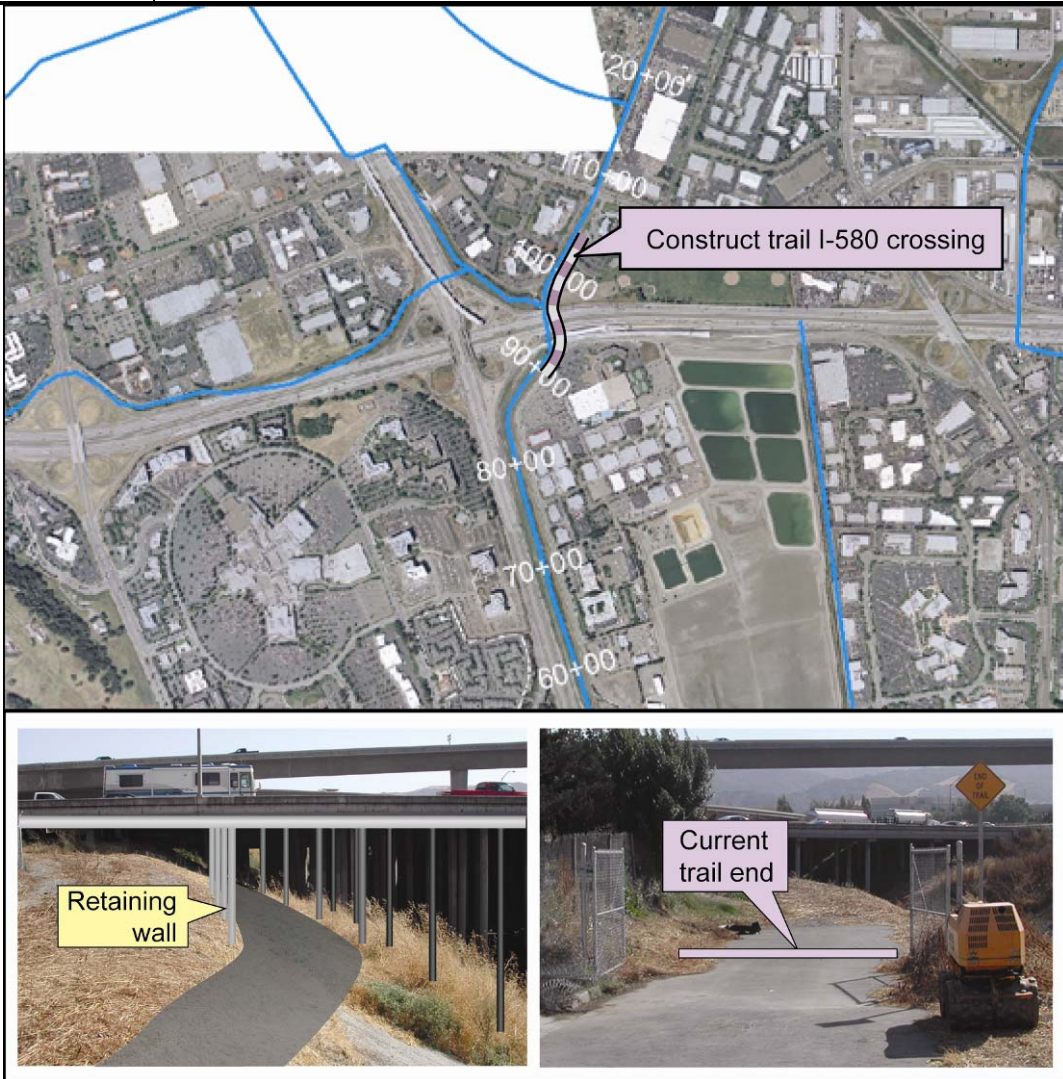
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| <b>Project Number</b>                   | R9-4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Project Name</b>                     | Line T Crossing Retrofit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Project Location</b>                 | Line T at Dublin Canyon Boulevard and Donlon Way.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Purpose</b>                          | Protect adjacent properties from flooding by increasing culvert sizes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Project Components</b>               | <ol style="list-style-type: none"> <li>1. Retrofit Dublin Canyon Boulevard culvert by: <ul style="list-style-type: none"> <li>• Increasing the culvert capacity.</li> <li>• Constructing 100 feet long, 3 feet high floodwalls on both banks upstream of culvert.</li> <li>• Constructing 50 feet long, 1 feet high floodwall on each side of bridge.</li> </ul> </li> <li>2. Retrofit Donlon Way culvert by: <ul style="list-style-type: none"> <li>• Increasing the culvert capacity.</li> <li>• Constructing 100 feet long, 3 feet high floodwalls on both banks upstream of culvert.</li> <li>• Constructing 50 feet long, 1 feet high floodwall on each side of bridge.</li> </ul> </li> </ol> |
| <b>Capital Cost Estimate</b>            | \$3,040,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Implementation Issues</b>            | <ul style="list-style-type: none"> <li>• Coordination with Caltrans and the City of Dublin regarding runoff from Schaefer Heights.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Project Precursors</b>               | <ul style="list-style-type: none"> <li>• Hydraulic modeling to determine the capacity of the crossings and the needed culvert size.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Benefits</b>                         | <ul style="list-style-type: none"> <li>• Reduce local flooding</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Goals/Objectives Addressed</b>       | Flood Protection & Drainage: A, B, E<br>Erosion and Sedimentation: none<br>Water Supply: none<br>Water Quality: none<br>Habitat & Environment: none<br>Recreation, Trails, and Public Education: none                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Maintenance Activities</b>           | Culvert Maintenance: <ul style="list-style-type: none"> <li>• Perform annual inspection.</li> <li>• Collect and dispose of vegetation debris.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Annual Maintenance Cost Estimate</b> | \$0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Notes</b>                            | <ul style="list-style-type: none"> <li>• The Dublin Canyon Road bridge and the Donlon Way crossing are currently under capacity to convey 100-year flood flows.</li> <li>• The modified culvert at Dublin Canyon Boulevard will be designed to accommodate flows from the Schaefer Heights approved by the City of Dublin in 1998, but not yet constructed.</li> </ul>                                                                                                                                                                                                                                                                                                                              |
| <b>References</b>                       | Personal communication with and comment on West Yost & Associates TM #5 from Joe Seto, Zone 7 Water Agency, 2003                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |



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| <b>Project Number</b>                   | R9-5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Project Name</b>                     | I-580 Trail Gap Elimination                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Project Location</b>                 | Alamo Canal at I-580 near Dublin Library                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Purpose</b>                          | Close existing trail gap at I-580 crossing and link trails south and north of I-580.                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Project Components</b>               | <ol style="list-style-type: none"> <li>Construct trail connection by: <ul style="list-style-type: none"> <li>Excavating notch on east side of bridge between freeway overpass pilings.</li> <li>Installing 370 feet of 10 feet high retaining wall.</li> <li>Building 370 feet of trail surface under I-580 bridge.</li> </ul> </li> </ol>                                                                                                                                                                         |
| <b>Capital Cost Estimate</b>            | \$860,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Implementation Issues</b>            | <ul style="list-style-type: none"> <li>Coordination with Caltrans, BART, Cities of Dublin and Pleasanton, DSRSD, EBRPD, and Alameda County Transportation Authority.</li> <li>Coordination with the Dublin and Pleasanton police departments with regards to safety measures.</li> </ul>                                                                                                                                                                                                                           |
| <b>Project Precursors</b>               | Geotechnical evaluation of slope stability.                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Project Benefits</b>                 | Regional connectivity.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Goals/Objectives Addressed</b>       | Flood Protection & Drainage: none<br>Erosion and Sedimentation: none<br>Water Supply: none<br>Water Quality: none<br>Habitat & Environment: none<br>Recreation, Trails, and Public Education: C, D, G                                                                                                                                                                                                                                                                                                              |
| <b>Maintenance Activities</b>           | Maintenance of trails: <ul style="list-style-type: none"> <li>Conduct annual inspection of trails.</li> <li>Seal cracks and repair pavement on trails, as needed.</li> <li>Clear debris and vegetation growth, as needed.</li> <li>Repair signs and structures, as needed.</li> </ul>                                                                                                                                                                                                                              |
| <b>Annual Maintenance Cost Estimate</b> | \$3,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Notes</b>                            | <ul style="list-style-type: none"> <li>The crossing at I-580 represents a current gap in the trail systems. The project goal is to create a system of regional trails by providing connectivity between existing trails.</li> <li>Zone 7 will provide trail use by way of their maintenance road.</li> <li>Various options for location and stabilization have been evaluated in previous reports. This project has been proposed and accepted in the past but was not completed due to funding issues.</li> </ul> |
| <b>References</b>                       | <ul style="list-style-type: none"> <li>Bissell &amp; Karn, Inc., Alamo Canal Access Road Alternative Analysis, 1992</li> <li>Flood Control MP, TM No. 5: Evaluation of Problem Areas &amp; Identification of Solutions, West Yost &amp; Associates, November 2001</li> <li>Personal communication with Jim Townsend, EBRPD, 2003</li> <li>Personal communication with Brian Swift, City of Pleasanton, 2003</li> </ul>                                                                                             |

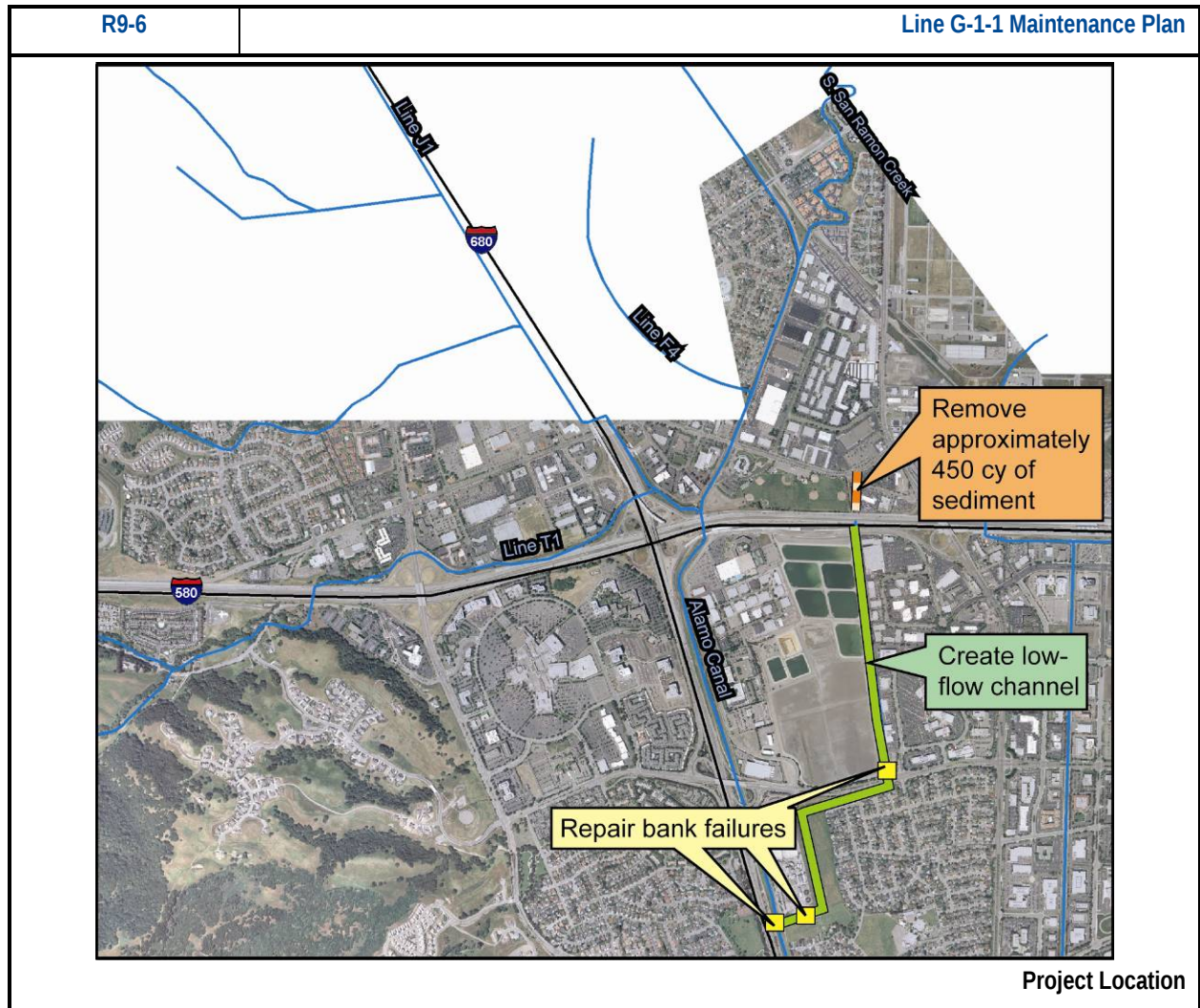
R9-5

I-580 Trail Gap Elimination

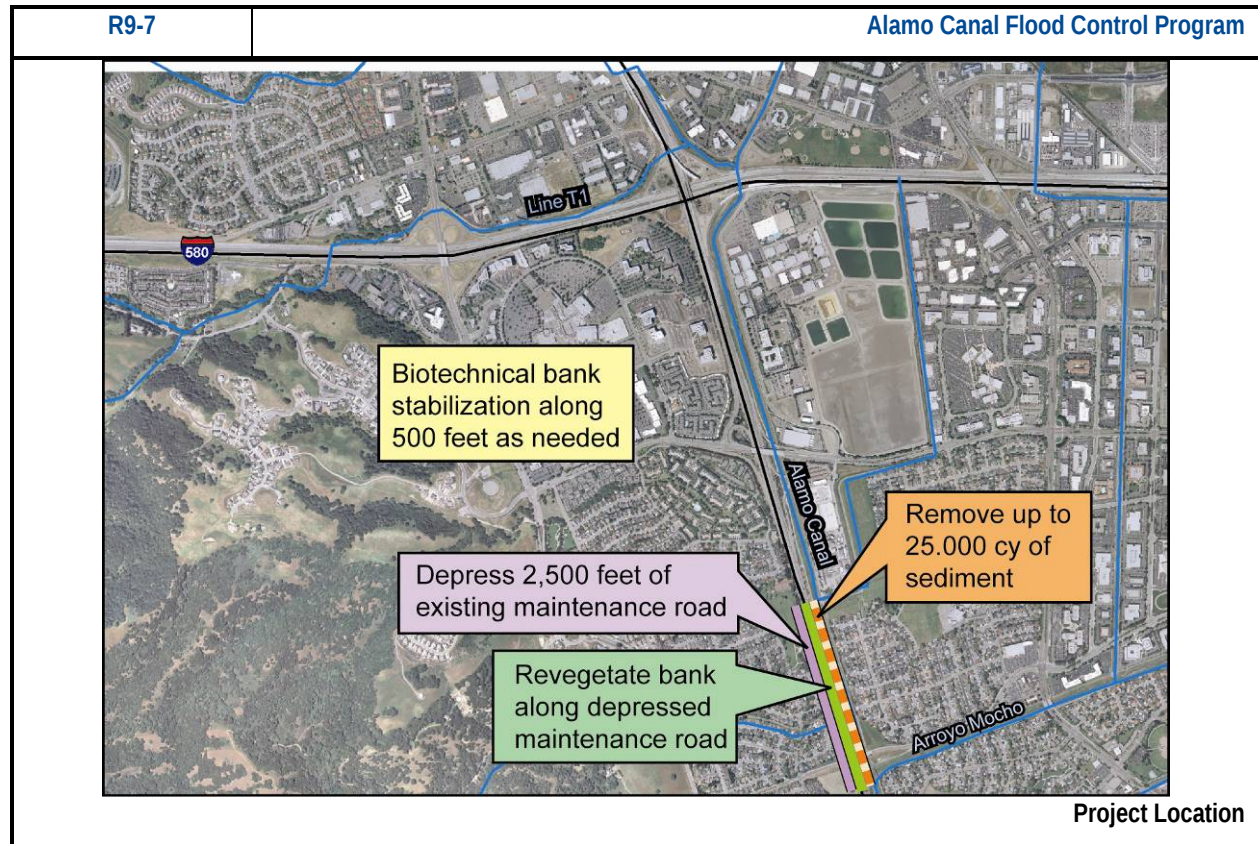


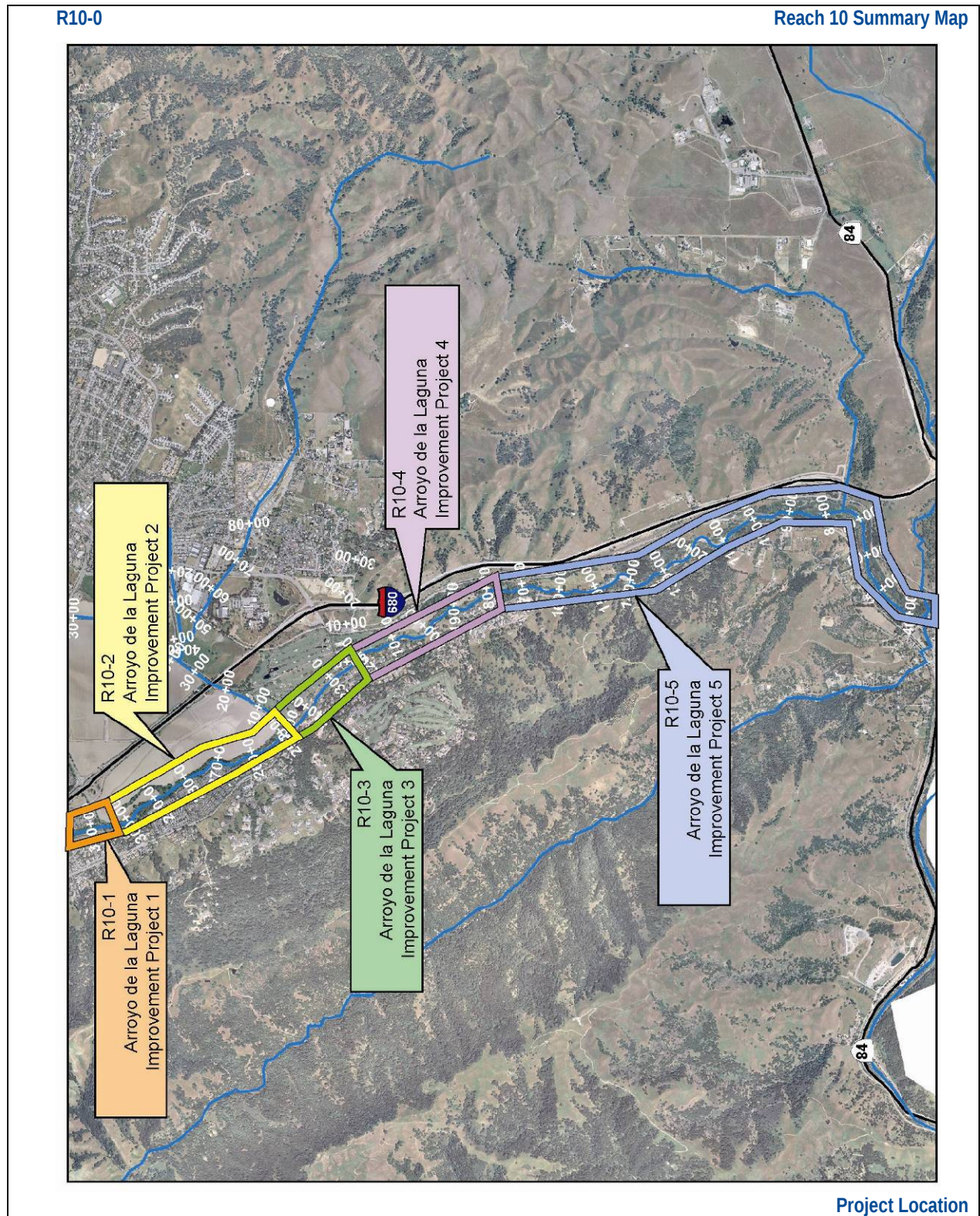
Project Location and Schematic

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| <b>Project Number</b>                   | R9-6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Project Name</b>                     | Line G-1-1 Maintenance Plan                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Project Location</b>                 | Line G-1-1 from its confluence with Alamo Canal to I-580 (STA 80+00 to 0+00)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Purpose</b>                          | Eliminate mosquito breeding in stagnant pools by creating a low flow channel. Repair minor bank failures along the stream.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Project Components</b>               | <ol style="list-style-type: none"> <li>1. One time sediment removal of approximately 450 CY from the I-580 to the Dublin Boulevard crossings (along approximately 780 feet of channel). Project includes creation of 0.3 acres of wetlands as environmental mitigation for sediment removal.</li> <li>2. Create low flow channel along 8,000-feet of channel from I-580 to confluence with Alamo Canal (assuming a meandering ratio of 1.25).</li> <li>3. Repair minor bank failures in three locations (STA 43+00; 5+00; and at junction with Alamo Canal).</li> </ol>                                                                                                                                                                                                                 |
| <b>Capital Cost Estimate</b>            | \$2,150,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Implementation Issues</b>            | <ul style="list-style-type: none"> <li>• Permitting, especially Clean Water Act Section 401/404.</li> <li>• Coordination with local mosquito control and abatement districts.</li> <li>• Project location provides habitat for western pond turtle. Construction of the low flow-channel will be implemented to minimize impacts on the pond turtle habitat.</li> <li>• It is noted that pools associated with mosquito proliferation can provide species habitat (i.e. western pond turtle). Mosquito abatement will need to be planned carefully to avoid special-status species impacts. In particular, the timing of pond draining would need to be evaluated.</li> <li>• Coordination with DSRSD on facility locations.</li> <li>• Coordination with the City of Dublin</li> </ul> |
| <b>Project Precursors</b>               | Develop Vegetation Management Plan.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Project Benefits</b>                 | <ul style="list-style-type: none"> <li>• Reduces mosquitoes and other pests.</li> <li>• Reduces downstream sedimentation.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Goals/Objectives Addressed</b>       | Flood Protection & Drainage: none<br>Erosion and Sedimentation: A<br>Water Supply: none<br>Water Quality: C<br>Habitat & Environment: B<br>Recreation, Trails, and Public Education: none                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Maintenance Activities</b>           | Maintenance of bank repairs: <ul style="list-style-type: none"> <li>• Conduct annual inspection of site.</li> <li>• Conduct repairs of bank stabilization measures, as needed.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Annual Maintenance Cost Estimate</b> | \$5,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Notes</b>                            | <ul style="list-style-type: none"> <li>• Channel invert elevation is below groundwater level at some sections of Line G-1-1. This results in stagnant pools which attract mosquitoes and other insects. Excavation of the low flow channel will concentrate the flow and provide better drainage.</li> <li>• Line G-1-1 has little impact on other parts of system.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>References</b>                       | <ul style="list-style-type: none"> <li>• Flood Control MP, TM No. 5: Evaluation of Problem Areas &amp; Identification of Solutions, West Yost &amp; Associates, November 2001</li> <li>• Personal communication with Joe Seto, Zone 7 Water Agency, 2003</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |



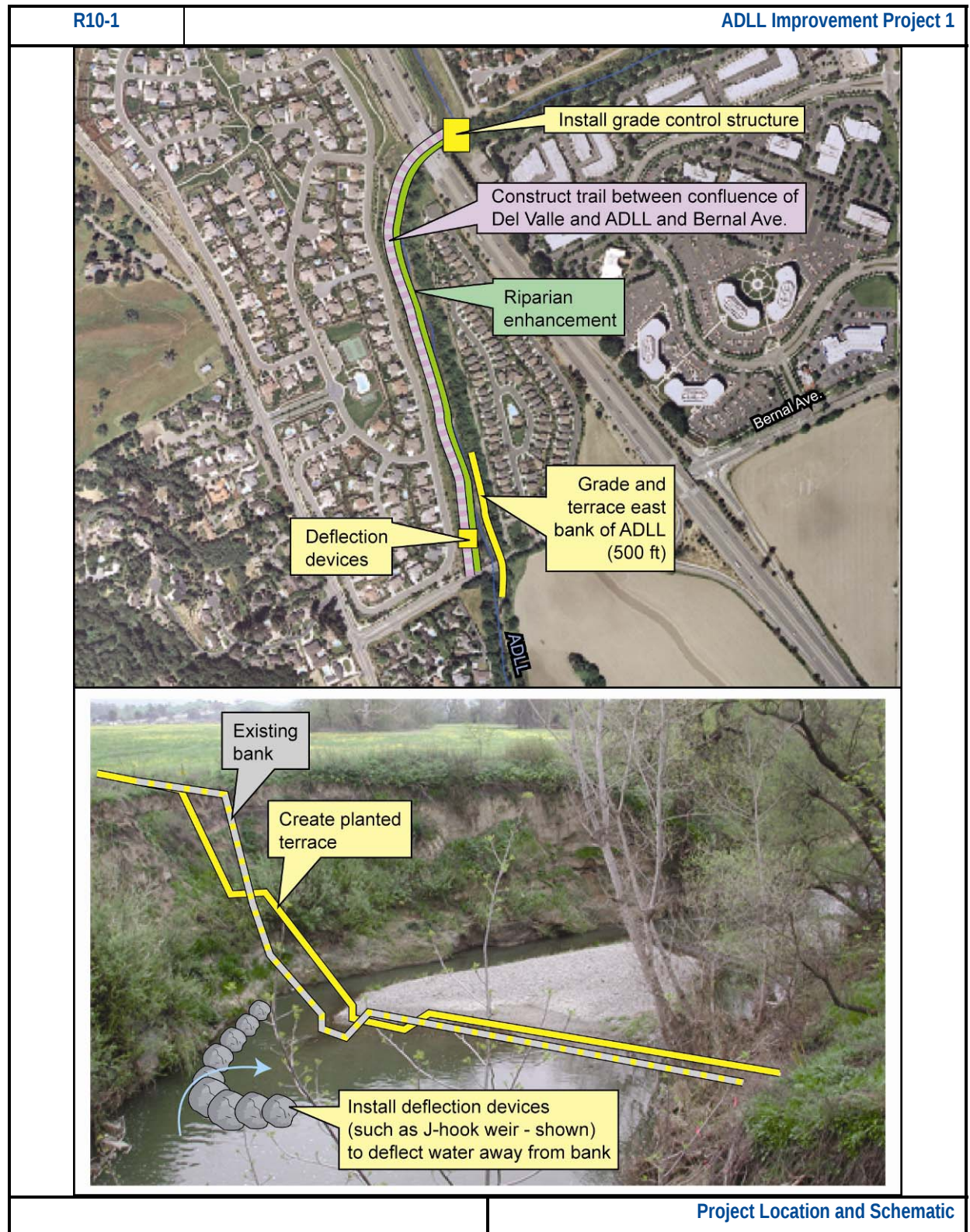
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| <b>Project Number</b>                   | R9-7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Project Name</b>                     | Alamo Canal Flood Control Program                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Project Location</b>                 | Alamo Canal from Arroyo Mocho to I-580 (90+00 to 25+00)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Purpose</b>                          | Restore capacity by conducting one-time sediment removal and lowering an existing maintenance road.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Project Components</b>               | <ol style="list-style-type: none"> <li>1. One-time sediment removal of up to 25,000 CY of sediment to increase hydraulic capacity. Project includes creation of 7.8 acres of wetlands as environmental mitigation for sediment removal.</li> <li>2. Depress 2,500 ft of maintenance road to increase capacity.</li> <li>3. Construct bio-technical bank stabilization along approximately 500 feet.</li> <li>4. Conduct re-vegetation along 2,500 feet of excavated bank (2.3 acres)</li> </ol>                                                                                                                                                                                                                                               |
| <b>Capital Cost Estimate</b>            | \$10,860,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Implementation Issues</b>            | <ul style="list-style-type: none"> <li>• Coordination with regulatory agencies.</li> <li>• Permitting related to sediment issues and Clean Water Act Section 401/404.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Project Precursors</b>               | <ul style="list-style-type: none"> <li>• Hydraulic and geomorphologic modeling.</li> <li>• Develop Sediment Management Plan.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Project Benefits</b>                 | <ul style="list-style-type: none"> <li>• Reduces local flooding.</li> <li>• Restores stream conveyance capacity.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Goals/Objectives Addressed</b>       | Flood Protection & Drainage: A, B, E<br>Erosion and Sedimentation: A<br>Water Supply: none<br>Water Quality: C<br>Habitat & Environment: E<br>Recreation, Trails, and Public Education: none                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Maintenance Activities</b>           | Maintenance of bank stabilization measures: <ul style="list-style-type: none"> <li>• Conduct annual inspection of site.</li> <li>• Conduct repairs of bank stabilization measures, as needed.</li> </ul> Vegetation maintenance: <ul style="list-style-type: none"> <li>• Conduct annual inspection of planted riparian vegetation.</li> <li>• Conduct maintenance of riparian vegetation by utilizing a combination of methods including hand removal, mechanical or chemical clearing. The annual maintenance cost estimate is based on chemical clearing of invasive species which includes conducting a biological survey and implementing a water quality sampling plan.</li> <li>• Collect and dispose of vegetation debris.</li> </ul> |
| <b>Annual Maintenance Cost Estimate</b> | \$67,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Notes</b>                            | <ul style="list-style-type: none"> <li>• Alamo Canal is aggradating due to excess sediment input from South San Ramon Creek and the reaches of Alamo Canal upstream of I-580. As a result, Alamo Canal does not have sufficient capacity to convey the 100-year flood flows.</li> <li>• Project will be phased due to habitat concerns.</li> <li>• Hydraulic modeling will identify the impacts of channel increased capacity and its effect on velocity. If the modeling identifies high velocity, velocity issues will be addressed during the design phase.</li> </ul>                                                                                                                                                                     |
| <b>References</b>                       | Personal Communication with Zone 7 Staff, Zone 7 Water Agency, 2005                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |





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| <b>Project Number</b>             | R10-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Project Name</b>               | ADLL Improvement Project 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Project Location</b>           | ADLL from the confluence of Arroyo del Valle to just downstream of Bernal Bridge adjacent to Foothill Place (between STA 330+00 and 300+00).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Purpose</b>                    | The purpose of this project is to stabilize the banks along the upper reach of ADLL, enhance the riparian corridor, and create a recreational corridor along the stream.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Project Components</b>         | <ol style="list-style-type: none"> <li>1. Upgrade 2,500 ft of maintenance road from the existing maintenance road on west bank of ADLL and proposed bridge at Arroyo del Valle/ADLL confluence to Bernal Avenue (STA 330+00 to 305+00). Project includes installation of signage and traffic signal.</li> <li>2. Stabilize channel by installing one grade control structure such as a vortex rock weir downstream of the I-680 undercrossing apron.</li> <li>3. Conduct bank stabilization, including: <ul style="list-style-type: none"> <li>• Construct five in-stream bank protection devices, such as J-hooks.</li> <li>• Stabilize using bio-technical measures 500 feet on the east bank of ADLL downstream of Bernal Avenue bridge. Stabilization includes a vegetated bank terrace.</li> </ul> </li> <li>4. Enhance 6.9 acres of vegetation along 3,000 feet of riparian corridor on each bank. Fill riparian gaps with trees, shrubs, and live stakings.</li> </ol>                                                                                                              |
| <b>Capital Cost Estimate</b>      | \$7,490,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Implementation Issues</b>      | <ul style="list-style-type: none"> <li>• Coordination with the City of Pleasanton.</li> <li>• Permitting in compliance with CWA Section 401/404.</li> <li>• Right-of-way restrictions - residences and others</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Project Precursors</b>         | Conduct a geomorphic study of the reach (Reach 10).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Project Benefits</b>           | <ul style="list-style-type: none"> <li>• Addresses bank down-cutting downstream of Bernal bridge.</li> <li>• Eliminates existing trail gap and provides a link to section along ADLL south of Bernal Avenue.</li> <li>• Enhances riparian corridor habitat.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Goals/Objectives Addressed</b> | Flood Protection & Drainage: none<br>Erosion and Sedimentation: A<br>Water Supply: none<br>Water Quality: C, E<br>Habitat & Environment: B, C<br>Recreation, Trails, and Public Education: D, G                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Maintenance Activities</b>     | Maintenance of trails: <ul style="list-style-type: none"> <li>• Conduct annual inspection of trails.</li> <li>• Seal cracks and repair pavement on trails, as needed.</li> <li>• Clear debris and vegetation growth, as needed.</li> <li>• Repair signs and structures, as needed.</li> </ul> Maintenance of channel stabilization measures: <ul style="list-style-type: none"> <li>• Conduct annual inspection of site.</li> <li>• Conduct repairs of channel stabilization measures, as needed.</li> </ul> Maintenance of bank stabilization measures: <ul style="list-style-type: none"> <li>• Conduct annual inspection of site.</li> <li>• Conduct repairs of bank stabilization measures, as needed.</li> </ul> Vegetation maintenance: <ul style="list-style-type: none"> <li>• Conduct annual inspection of planted riparian vegetation.</li> <li>• Conduct maintenance of riparian vegetation by utilizing a combination of methods including hand removal, mechanical or chemical clearing. The annual maintenance cost estimate is based on hand removal of invasive</li> </ul> |

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|                                         | species. <ul style="list-style-type: none"><li>• Collect and dispose of vegetation debris.</li></ul>                                                                                                                                              |
| <b>Annual Maintenance Cost Estimate</b> | \$118,000                                                                                                                                                                                                                                         |
| <b>Notes</b>                            | Portions of ADLL are subject to sediment deposition and dramatic bank erosion. However, ADLL remains the most natural stream of the watershed with significant opportunities to stabilize the stream while maintaining and enhancing its habitat. |
| <b>References</b>                       | Flood Control MP, TM No. 5: Evaluation of Problem Areas & Identification of Solutions, West Yost & Associates, November 2001                                                                                                                      |

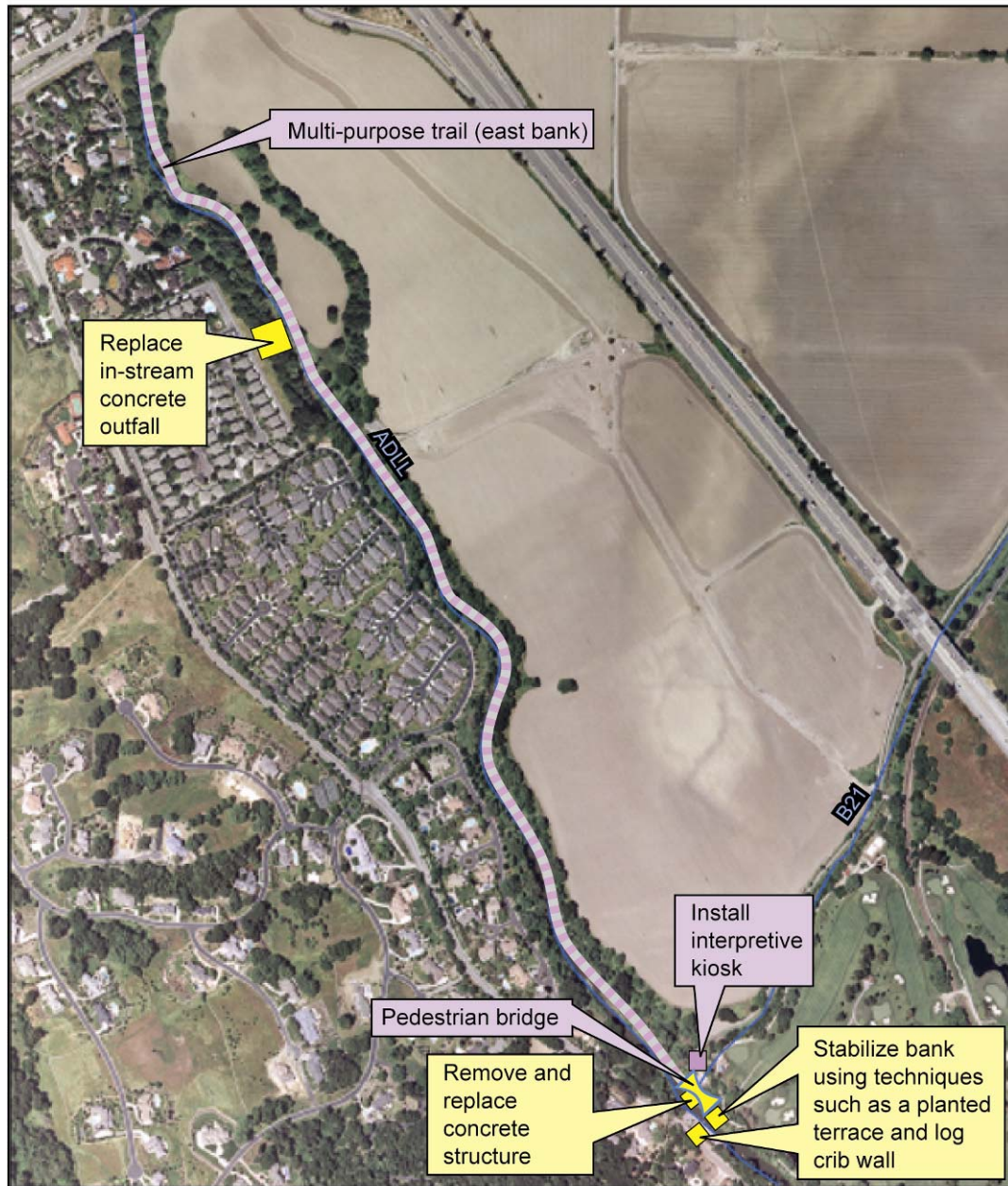


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| <b>Project Number</b>             | R10-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Project Name</b>               | ADLL Improvement Project 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Project Location</b>           | ADLL from just downstream of Bernal Avenue to Lines B21 (STA 305+00 to 248+00).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Purpose</b>                    | Enhance stream habitat and environmental features for steelhead, stabilize banks, and create recreational corridor along ADLL.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Project Components</b>         | <ol style="list-style-type: none"> <li>1. Replace the existing concrete storm water drainage outfall near Beaumont Court, downstream of Bernal Avenue with a new drain structure designed to prevent downstream erosion.</li> <li>2. Remove the existing concrete structure located at the confluence of Line B21 and ADLL. Replace it with a drop structure, concrete apron and riprap to act as an energy dissipation unit.</li> <li>3. Stabilize banks, including: <ul style="list-style-type: none"> <li>• 100 feet of bank opposite of Line B21 by utilizing bio-technical bank stabilization techniques, such as a log crib wall.</li> <li>• 100 feet on east bank of ADLL in the vicinity of confluence structure. Stabilization will include a vegetated bank terrace. Project includes acquisition of 0.2 acres along 200 feet of bank for bank stabilization implementation.</li> </ul> </li> <li>4. Recreational features include: <ul style="list-style-type: none"> <li>• One mile of multi-purpose trail along Bernal property running on the east bank of the ADLL.</li> <li>• Pedestrian bridge over Line B21 at confluence with ADLL to Castlewood Golf Course.</li> <li>• Interpretive kiosk at confluence of line B21 and ADLL.</li> <li>• Acquisition of 2.4 acres along one mile of stream for trail.</li> </ul> </li> </ol> |
| <b>Capital Cost Estimate</b>      | \$4,400,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Implementation Issues</b>      | <ul style="list-style-type: none"> <li>• Coordination with the City of Pleasanton</li> <li>• Property acquisition issues</li> <li>• Coordination with individual property owners for trail use along private properties.</li> <li>• Coordination with Alameda County for work adjacent to the county Foothill Road stabilization project.</li> <li>• Permitting in compliance with CWA Section 401/404.</li> <li>• Trail/bank stability analysis.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Project Precursors</b>         | Conduct a geomorphic study of the reach (Reach 10).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Project Benefits</b>           | <ul style="list-style-type: none"> <li>• Reduces in-stream bank instability.</li> <li>• Addresses bank erosion and stability.</li> <li>• Links ADLL to trail network (trail north of Bernal Avenue and Iron Horse Trail).</li> <li>• Potential fisheries stream corridor.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Goals/Objectives Addressed</b> | Flood Protection & Drainage: A, D<br>Erosion and Sedimentation: A<br>Water Supply: none<br>Water Quality: C, E<br>Habitat & Environment: B, C,<br>Recreation, Trails, and Public Education: B, D, G                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Maintenance Activities</b>     | Maintenance of replaced outfalls: <ul style="list-style-type: none"> <li>• Conduct annual inspection of site.</li> <li>• Conduct repairs of structures, as needed.</li> </ul> Maintenance of bank stabilization measures: <ul style="list-style-type: none"> <li>• Conduct annual inspection of site.</li> <li>• Conduct repairs of bank stabilization measures, as needed.</li> </ul> Maintenance of trails: <ul style="list-style-type: none"> <li>• Conduct annual inspection of trails.</li> <li>• Seal cracks and repair pavement on trails, as needed.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

|                                         |                                                                                                                                                    |
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|                                         | <ul style="list-style-type: none"><li>• Clear debris and vegetation growth, as needed.</li><li>• Repair signs and structures, as needed.</li></ul> |
| <b>Annual Maintenance Cost Estimate</b> | \$57,000                                                                                                                                           |
| <b>Notes</b>                            | -                                                                                                                                                  |
| <b>References</b>                       | Flood Control MP, TM No. 5: Evaluation of Problem Areas & Identification of Solutions, West Yost & Associates, November 2001                       |

R10-2

ADLL Improvement Project 2



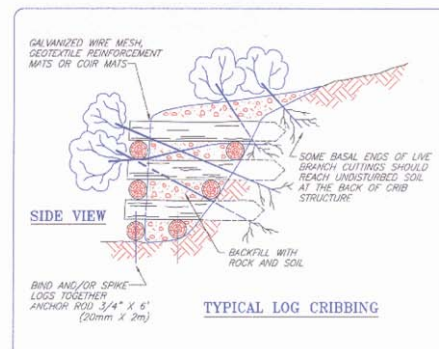
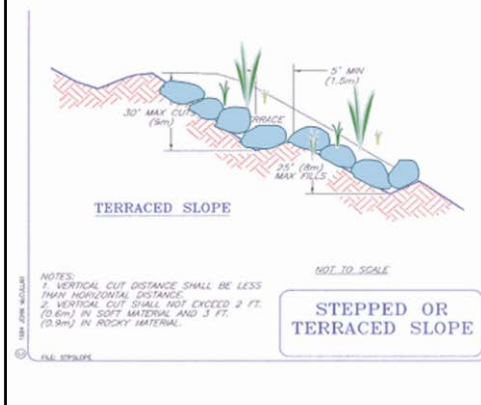
Project Location

R10-2

ADLL Improvement Project 2



Confluence of Line B21 and ADLL

ADLL west bank, opposite of confluence  
Line B21 and ADLL

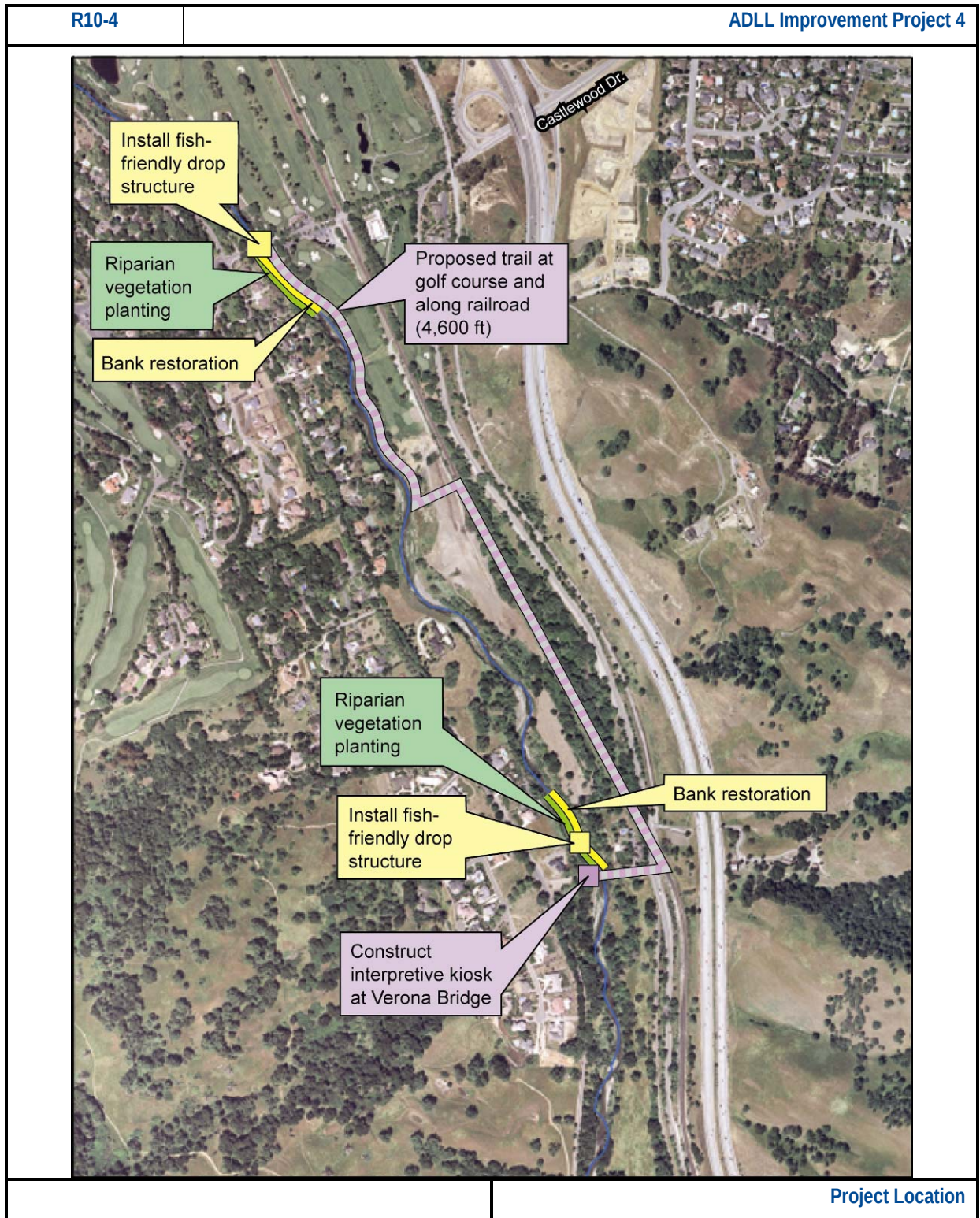
Project Location and Schematic

|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Project Number</b>                   | R10-3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Project Name</b>                     | ADLL Improvement Project 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Project Location</b>                 | ADLL, along Castlewood Golf Course (STA 248+00 to 222+00) from Line B21 to Castlewood Drive.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Purpose</b>                          | Improve potential fisheries corridor in ADLL and stabilize banks. Extend recreational corridor.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Project Components</b>               | <ol style="list-style-type: none"> <li>1. Replace existing drop structure (fish barrier) just upstream of Castlewood Drive footbridge, with a fish-passable drop structure such as a vortex rock weir.</li> <li>2. Modify golf course installed rip-rap at Castlewood Drive by: <ul style="list-style-type: none"> <li>• Restoring rip-rap on the lower bank sections of both banks (STA 246+00 to 222+00), as needed for 2,400 feet.</li> <li>• Removing rip-rap on the upper sections of both banks and plant live staking on the upper bank sections (STA 222+00 to 246+00), as needed for 2,400 feet. The project includes acquisition of 5.5 acres along 2,400 feet on each bank.</li> </ul> </li> <li>3. Coordinate with golf course to open the maintenance road between ADLL and golf course for public access between line B21 and Castlewood Drive (2,400 feet). Project includes acquisition of 1.1 acres along 2,400 feet for trail.</li> </ol> |
| <b>Capital Cost Estimate</b>            | \$7,950,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Implementation Issues</b>            | <ul style="list-style-type: none"> <li>• Coordination with golf course owner to implement bank stabilization and public access.</li> <li>• Permitting in compliance with CWA Section 401/404.</li> <li>• Coordination with private landowners.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Project Precursors</b>               | Conduct a geomorphic study of the reach (Reach 10).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Project Benefits</b>                 | <ul style="list-style-type: none"> <li>• Restores vegetation to an area within ADLL that contains a large portion of hardscape.</li> <li>• Improves potential steelhead corridor by providing fish passable in-stream structures.</li> <li>• Extends trail network along ADLL.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Goals/Objectives Addressed</b>       | Flood Protection & Drainage: A, D<br>Erosion and Sedimentation: A<br>Water Supply: none<br>Water Quality: C<br>Habitat & Environment: B, C<br>Recreation, Trails, and Public Education: C, D, E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Maintenance Activities</b>           | Maintenance of replaced drop structure: <ul style="list-style-type: none"> <li>• Conduct annual inspection of site.</li> <li>• Conduct repairs to structure, as needed.</li> </ul><br>Maintenance of bank stabilization measures: <ul style="list-style-type: none"> <li>• Conduct annual inspection of site.</li> <li>• Conduct repairs of bank stabilization measures, as needed.</li> </ul><br>Maintenance of trails: <ul style="list-style-type: none"> <li>• Conduct annual inspection of trails.</li> <li>• Seal cracks and repair pavement on trails, as needed.</li> <li>• Clear debris and vegetation growth, as needed.</li> <li>• Repair signs and structures, as needed.</li> </ul>                                                                                                                                                                                                                                                             |
| <b>Annual Maintenance Cost Estimate</b> | \$258,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Notes</b>                            | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>References</b>                       | Flood Control MP, TM No. 5: Evaluation of Problem Areas & Identification of Solutions, West Yost & Associates, November 2001                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

| R10-3                                                                                                                                                               | ADLL Improvement Project 3                                                                                                                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                   |                                                                                                                                                                 |
|  <p data-bbox="316 1585 755 1612">Drop structure upstream of Castlewood Drive</p> |  <p data-bbox="868 1585 1258 1612">Rip-rap along Castlewood Country Club</p> |
|                                                                                                                                                                     | Project Location and Schematic                                                                                                                                  |

|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
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| <b>Project Number</b>             | R10-4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Project Name</b>               | ADLL Improvement Project 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Project Location</b>           | ADLL from Castlewood Drive to Verona Road (STA 226+00 to 179+00)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Purpose</b>                    | The purpose of this project is to stabilize the bed and banks along the middle reach of ADLL, enhance the riparian corridor, and continue the recreational corridor along the stream.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Project Components</b>         | <ol style="list-style-type: none"> <li>1. Bank Stabilization: <ul style="list-style-type: none"> <li>• Conduct bank restoration activities along ADLL's west bank: south of Castlewood Drive (STA 226+00) and just north of Verona bridge (STA 179+00). For project planning and cost estimating purposes, assumed activities would include creation of planted terrace along approximately 500 feet at 2 locations.</li> <li>• Riparian vegetation: Plant 1.1 acres of vegetation along 1,000 feet of bank (500 feet in 2 locations).</li> <li>• Acquire 1.15 acres of land for stabilization activities.</li> </ul> </li> <li>2. Channel Stabilization: <ul style="list-style-type: none"> <li>• Stabilize channel bed by constructing at two locations two fish-passable grade control structures, such as rock vanes; one at the Castlewood Bridge crossing (STA 225+00), and one at the Verona Bridge crossing (STA 185+00).</li> </ul> </li> <li>3. Recreation: <ul style="list-style-type: none"> <li>• Extend trail south of golf course along ADLL, and along abandoned railroad (4,600 feet from STA 225+00 to 179+00).</li> <li>• Install signage at Castlewood Drive for pedestrian crossing.</li> <li>• Construct interpretive kiosk at Verona Bridge.</li> <li>• Acquire 2.1 acres (assuming 4,600 feet x 20 feet) of railroad easement to build trail along railroad.</li> </ul> </li> </ol> |
| <b>Capital Cost Estimate</b>      | \$5,280,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Implementation Issues</b>      | <ul style="list-style-type: none"> <li>• Coordination with Natural Resource Conservation Service (NRCS) on bank stability demonstration project.</li> <li>• Coordination with East Bay Regional Park District (EBPRD) and Union Pacific Railroad.</li> <li>• Coordination with individual property owners.</li> <li>• Permitting in compliance with CWA Section 401/404.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Project Precursors</b>         | Conduct a geomorphic study of the reach (Reach 10).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Benefits</b>                   | <ul style="list-style-type: none"> <li>• Protects homes from loss of property.</li> <li>• Extends trail system along ADLL.</li> <li>• Addresses bank erosion along ADLL.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Goals/Objectives Addressed</b> | Flood Protection & Drainage: A<br>Erosion and Sedimentation: A, B<br>Water Supply: none<br>Water Quality: C, E<br>Habitat & Environment: B, C<br>Recreation, Trails, and Public Education: B, C, D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Maintenance Activities</b>     | Maintenance of bank stabilization measures: <ul style="list-style-type: none"> <li>• Conduct annual inspection of site.</li> <li>• Conduct repairs of bank stabilization measures, as needed.</li> </ul> Maintenance of trails: <ul style="list-style-type: none"> <li>• Conduct annual inspection of trails.</li> <li>• Seal cracks and repair pavement on trails, as needed.</li> <li>• Clear debris and vegetation growth, as needed.</li> <li>• Repair signs and structures, as needed.</li> </ul> Vegetation maintenance: <ul style="list-style-type: none"> <li>• Conduct annual inspection of planted riparian vegetation.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

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|                                         | <ul style="list-style-type: none"><li>• Conduct maintenance of riparian vegetation by utilizing a combination of methods including hand removal, mechanical or chemical clearing. The annual maintenance cost estimate is based on hand clearing of invasive species.</li><li>• Collect and dispose of vegetation debris.</li></ul> |
| <b>Annual Maintenance Cost Estimate</b> | \$106,000                                                                                                                                                                                                                                                                                                                           |
| <b>Notes</b>                            | Portions of ADLL are subject to sediment deposition and dramatic bank erosion. However, ADLL remains the most natural stream of the watershed with significant opportunities to stabilize the stream while maintaining and enhancing its habitat.                                                                                   |
| <b>References</b>                       | Flood Control MP, TM No. 5: Evaluation of Problem Areas & Identification of Solutions, West Yost & Associates, November 2001                                                                                                                                                                                                        |

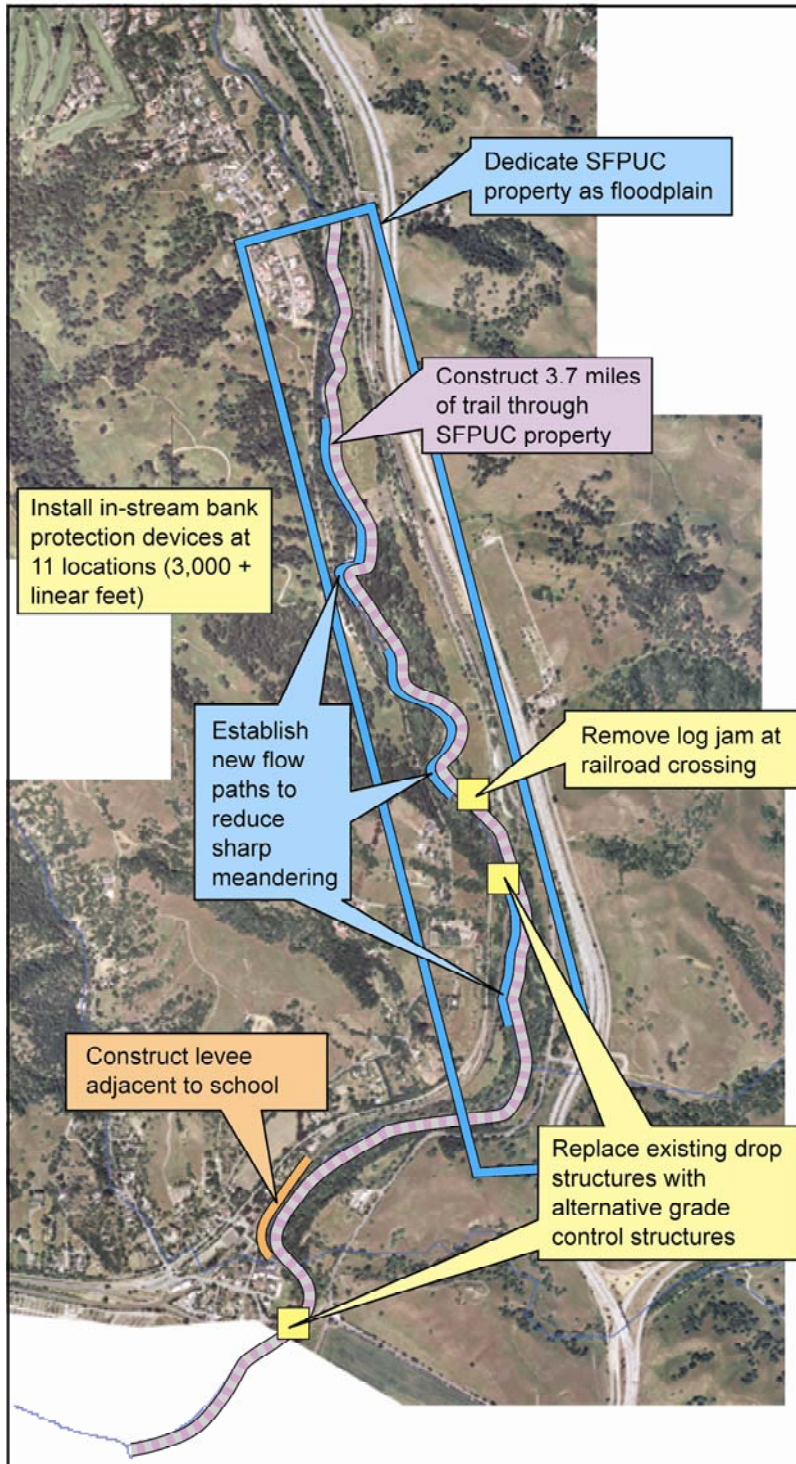


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| <b>Project Number</b>             | R10-5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Project Name</b>               | ADLL Improvement Project 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Project Location</b>           | Lower section of Arroyo de la Laguna, south of Verona Bridge to the Alameda Creek confluence (STA 180+00 to 0+00)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Purpose</b>                    | Protect properties from flooding during 100-year flood event at build-out conditions. Reduce erosion and improve riparian habitat using bioengineered stabilization approaches.<br>Continue recreational corridor along lower reaches of ADLL.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Project Components</b>         | <ol style="list-style-type: none"> <li>1. Preserve existing floodplain on SFPUC property.</li> <li>2. Create 3.7 miles of trail along ADLL between Verona Bridge and Niles Canyon. The project includes acquisition of 4.8 acres for trail.</li> <li>3. Remove 2 fish barriers by replacing the existing drop structures at Paloma Way and railroad crossing with two alternative grade control structures such as a vortex rock weir.</li> <li>4. Remove log jam from railroad crossing structure (STA 110+00).</li> <li>5. Stabilize channel banks by: <ul style="list-style-type: none"> <li>• Installing in-stream bank protection devices at 11 locations along project reach such as vegetated rock, log-crib walls, or root wads. Total length of bank protection is 3,000 feet (costs are based on log-cribwall design).</li> <li>• Reducing sharp meander at 3 locations by establishing new flow paths. The project includes acquisition of 6.9 acres. <ul style="list-style-type: none"> <li>• Use bioengineered stabilization techniques such as rootwad construction, J-hook weirs, and log cribwalls with rootwad cross-pieces along 3,000 feet of channel. Use existing sediment and downed trees as part of stabilization materials.</li> <li>• Install upstream and downstream grade control structures such as rock vanes to control nick-point migration and to prevent damage to the restored bend section until plantings can establish themselves. Estimated number is 6 structures.</li> </ul> </li> </ul> </li> <li>6. Conduct vegetation management by: <ul style="list-style-type: none"> <li>• Implementing non-native species control along 9,000 feet on each bank. The project includes acquisition of 13.8 acres to implement vegetation management activities including enhancement of water quality and habitat value by eliminating grazing/cattle access (0.5 miles).</li> <li>• Planting 1.1 acres of native species for stabilization along 1,000 feet of levee.</li> </ul> </li> <li>7. Build levee along the west bank of the channel. The levee will extend along 1,000 feet of channel immediately upstream of the Niles Canyon Road Bridge.</li> </ol> |
| <b>Capital Cost Estimate</b>      | \$29,230,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Implementation Issues</b>      | <ul style="list-style-type: none"> <li>• Coordination with SFPUC, ACPWA and NRCS to protect floodplain.</li> <li>• Coordination with EBRPD and Pacific Railroad.</li> <li>• Permitting in compliance with CWA Section 401/404.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Project Precursors</b>         | Conduct a geomorphology study of the reach.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Project Benefits</b>           | <ul style="list-style-type: none"> <li>• Improves potential steelhead corridor.</li> <li>• Creates recreational corridor along ADLL.</li> <li>• Reduces future flooding to properties along downstream section of ADLL.</li> <li>• Addresses stability of ADLL.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Goals/Objectives Addressed</b> | Flood Protection & Drainage: A, B, C<br>Erosion and Sedimentation: A, B<br>Water Supply: none<br>Water Quality: C, E<br>Habitat & Environment: B, C<br>Recreation, Trails, and Public Education: C, D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Maintenance Activities</b>     | Maintenance of trails:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

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|                                         | <ul style="list-style-type: none"> <li>• Conduct annual inspection of trails.</li> <li>• Seal cracks and repair pavement on trails, as needed.</li> <li>• Clear debris and vegetation growth, as needed.</li> <li>• Repair signs and structures, as needed.</li> </ul> <p>Maintenance of replaced drop structure:</p> <ul style="list-style-type: none"> <li>• Conduct annual inspection of site.</li> <li>• Conduct repairs to structure, as needed.</li> </ul> <p>Maintenance of bank stabilization measures:</p> <ul style="list-style-type: none"> <li>• Conduct annual inspection of site.</li> <li>• Conduct repairs of bank stabilization measures, as needed.</li> </ul> <p>Vegetation maintenance:</p> <ul style="list-style-type: none"> <li>• Conduct annual inspection of planted riparian vegetation.</li> <li>• Conduct maintenance of riparian vegetation by utilizing a combination of methods including hand removal, mechanical or chemical clearing. The annual maintenance cost estimate is based on hand clearing of invasive species.</li> <li>• Collect and dispose of vegetation debris.</li> </ul> <p>Maintenance of levee:</p> <ul style="list-style-type: none"> <li>• Conduct annual inspection of site.</li> <li>• Conduct repairs of levee, as needed.</li> </ul> |
| <b>Annual Maintenance Cost Estimate</b> | \$1,049,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Notes</b>                            | Monitor for channel stabilization annually.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>References</b>                       | <ul style="list-style-type: none"> <li>• Flood Control MP, TM No. 5: Evaluation of Problem Areas &amp; Identification of Solutions, West Yost &amp; Associates, November 2001</li> <li>• Arroyo de la Laguna Streambank Restoration (SFPUC), 2004</li> <li>• Interdisciplinary Site Report (NRCS), 2004</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

R10-5

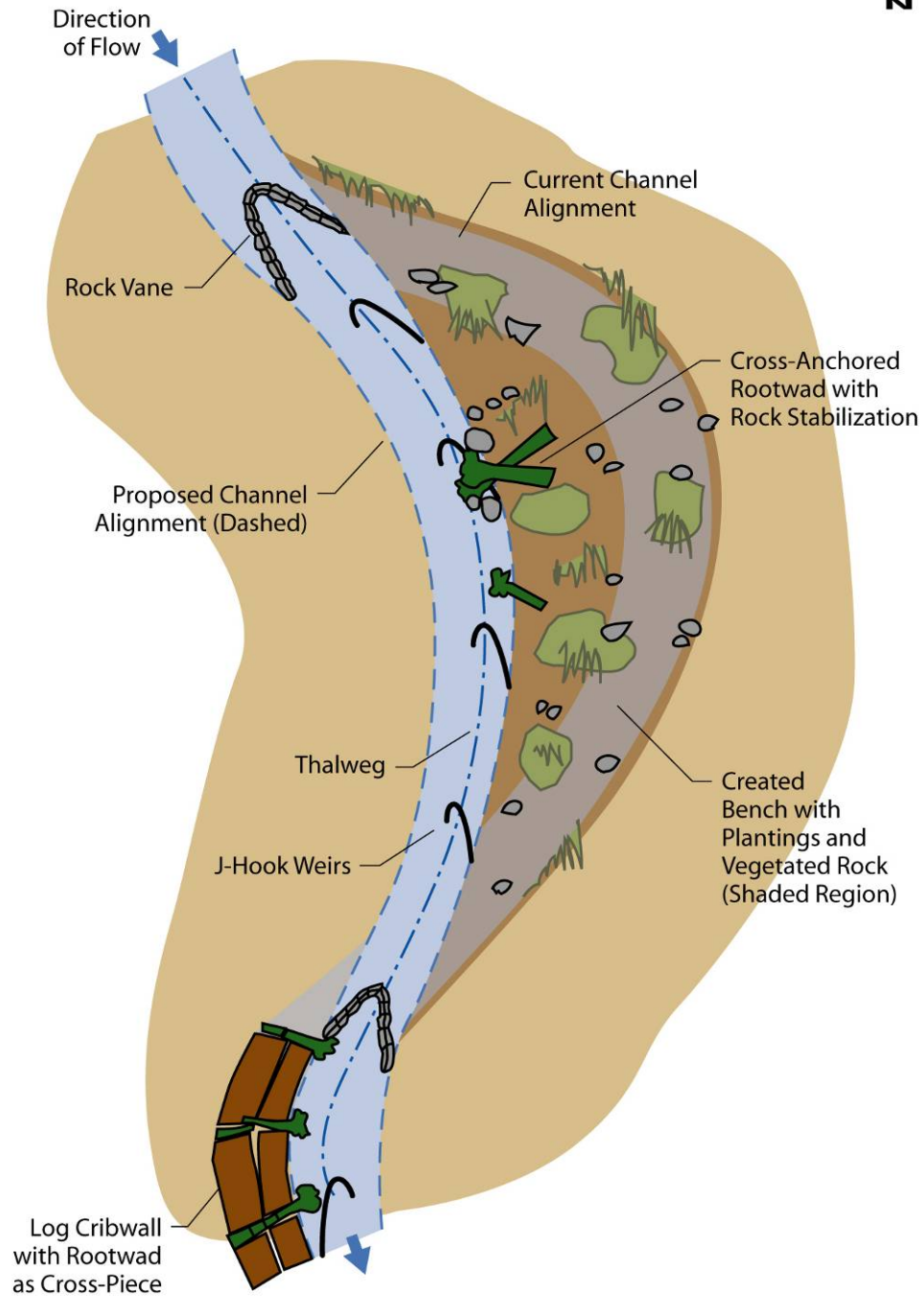
ADLL Improvement Project 5



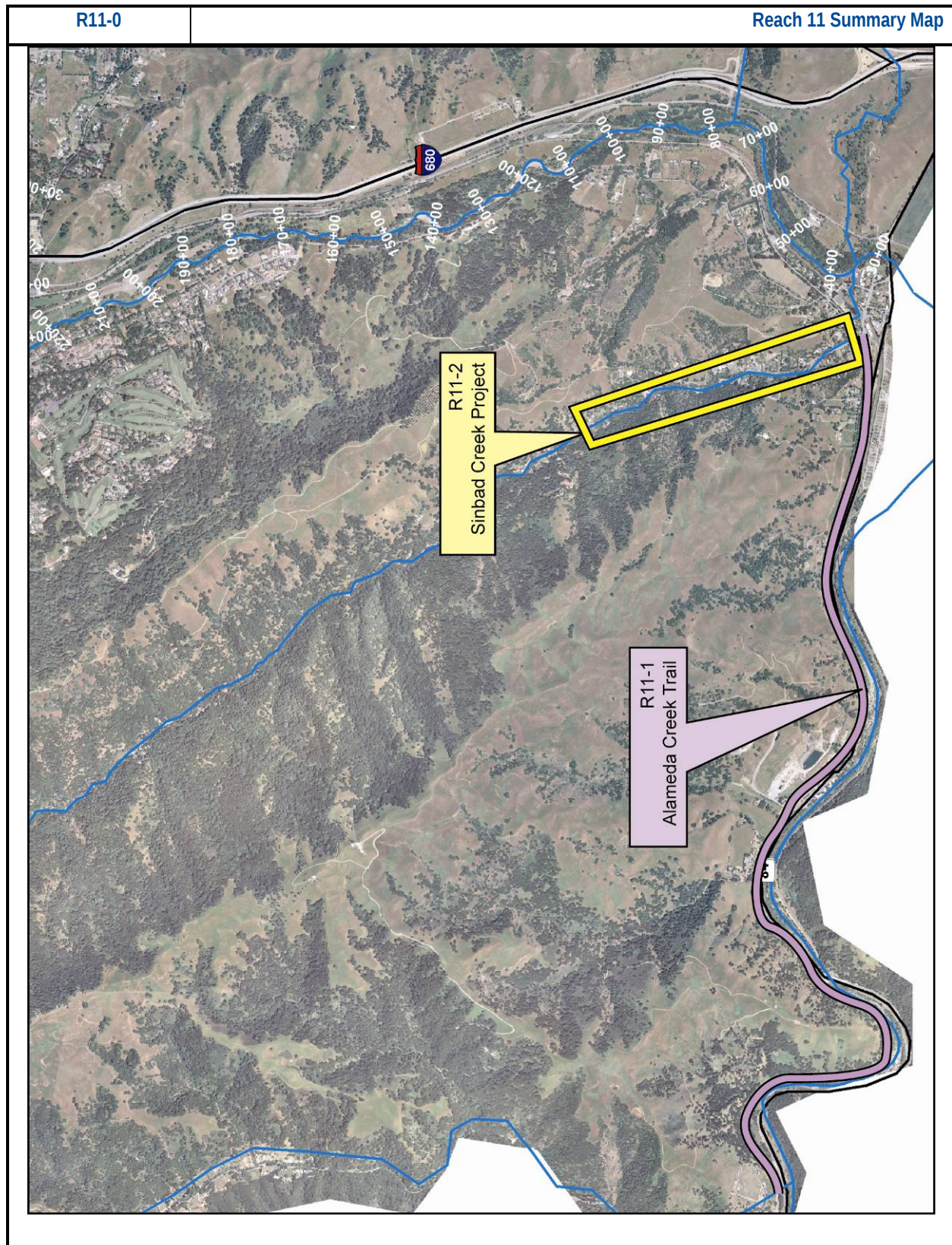
Project Location

R10-5

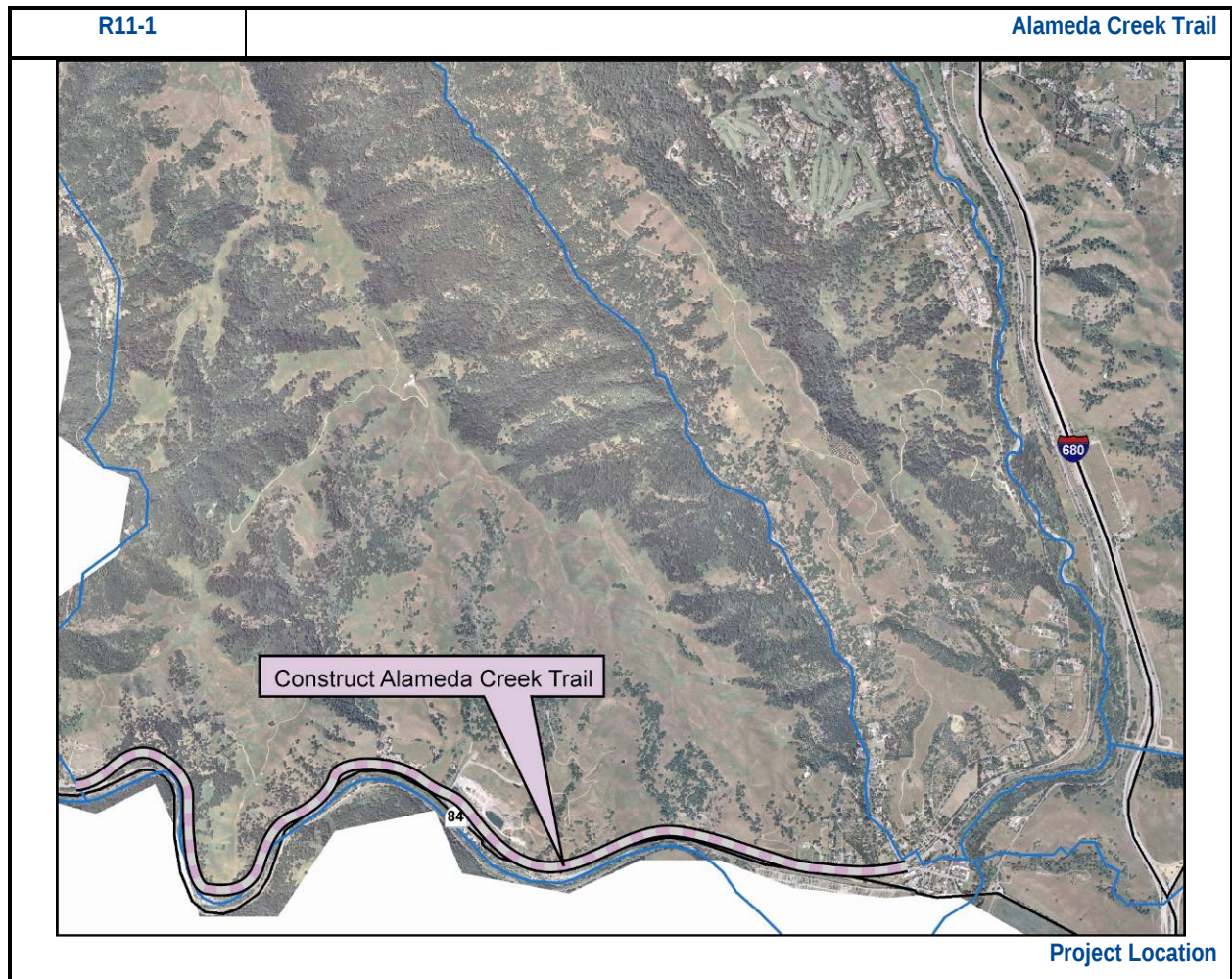
ADLL Improvement Project 5

**Arroyo de la Laguna: Sharp Meander Reduction  
and Streambank Protection**

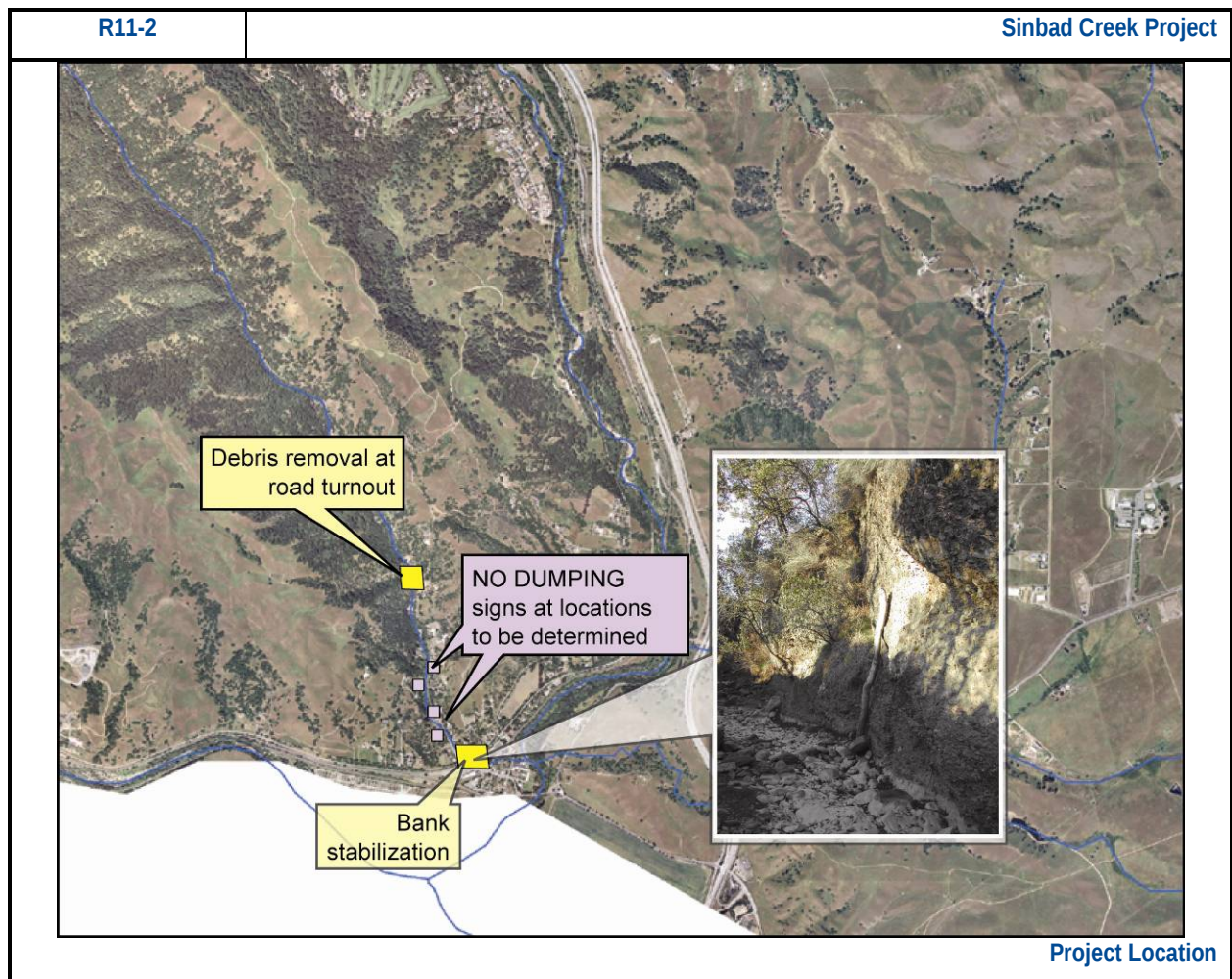
Project Schematic

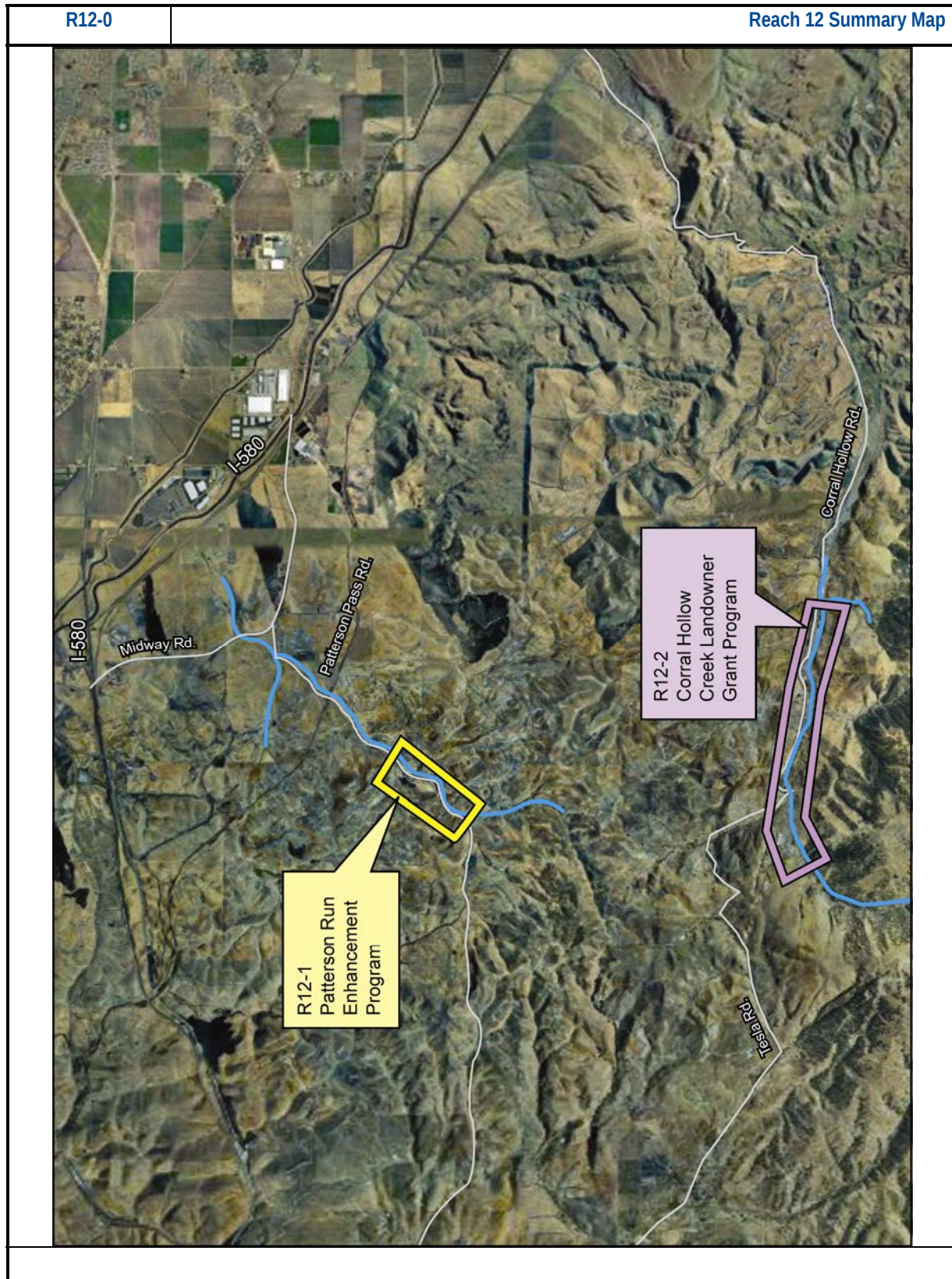


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|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Project Number</b>                   | R11-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Project Name</b>                     | Alameda Creek Trail                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Project Location</b>                 | Alameda Creek                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Purpose</b>                          | Create a system of regional trails.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Project Components</b>               | 1. Construct 12,600 feet of trail along Alameda Creek to join proposed trail along lower reach of Arroyo de la Laguna (Project R10-5: Lower ADLL Improvement Project). Project includes acquisition of 5.8 acres for trail.                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Capital Cost Estimate</b>            | \$3,100,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Implementation Issues</b>            | <ul style="list-style-type: none"> <li>• Coordination with EBRPD.</li> <li>• Coordination with Alameda County, SFPUC, and other property owners.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Project Precursors</b>               | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Benefits</b>                         | Provides trail connectivity with proposed trail along Arroyo de la Laguna.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Goals/Objectives Addressed</b>       | Flood Protection & Drainage: none<br>Erosion and Sedimentation: none<br>Water Supply: none<br>Water Quality: none<br>Habitat & Environment: none<br>Recreation, Trails, and Public Education: C, D                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Maintenance Activities</b>           | Trail Maintenance: <ul style="list-style-type: none"> <li>• Conduct annual inspection of trails.</li> <li>• Seal cracks and repair pavement on trails, as needed.</li> <li>• Clear debris and vegetation growth, as needed.</li> <li>• Repair signs and structures, as needed.</li> </ul>                                                                                                                                                                                                                                                                                                                                                     |
| <b>Annual Maintenance Cost Estimate</b> | \$111,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Notes</b>                            | <ul style="list-style-type: none"> <li>• Potential to create trail to link up to regional trail system. Recommend pursuing railroad Right-of-Way (ROW) as trail route if railroad tracks on right bank of creek (looking upstream) are under use or abandoned. Existing 1.5 mile long trail along left bank of creek (looking upstream). Good staging area for future trail along Alameda Creek.</li> <li>• Good aquatic habitat for anadromous fish species. Stream contains pools and riffles. Well vegetated riparian habitat.</li> <li>• Project design should incorporate measures to protect special-status species habitat.</li> </ul> |
| <b>References</b>                       | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

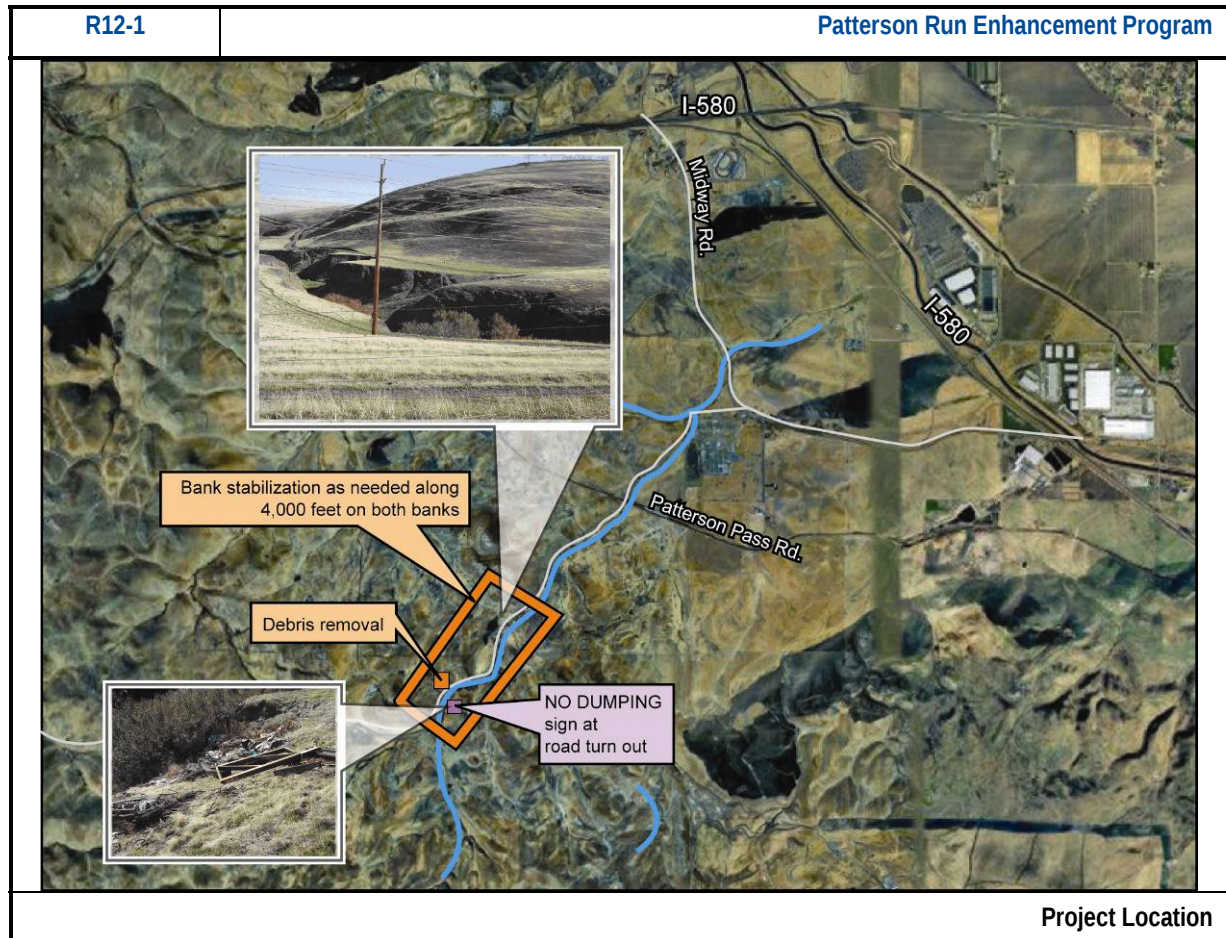


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| <b>Project Number</b>             | R11-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Project Name</b>               | Sinbad Creek Project                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Project Location</b>           | Sinbad Creek                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Purpose</b>                    | Stabilize bank at confluence of Sinbad Creek with ADLL. Encourage community participation in creek stewardship.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Project Components</b>         | <ol style="list-style-type: none"> <li>1. Establish a volunteer "Adopt-a-Creek" program that includes trash clean-up at road turnouts. Project includes installation of "no dumping" signs (4) at road turnouts.</li> <li>2. Conduct trash removal at road turnout (approximately 370 CY).</li> <li>3. Conduct bank stabilization activities along approximately 80 feet at confluence with ADLL (STA 20+00). Project includes: <ul style="list-style-type: none"> <li>• Placement of approximately 300 CY of boulders along toe of bank.</li> <li>• Re-vegetation of 80 feet of bank (approximately 0.055 acres).</li> <li>• Acquisition of 0.055 acres for bank stabilization.</li> </ul> </li> </ol>                                                                                  |
| <b>Capital Cost Estimate</b>      | \$310,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Implementation Issues</b>      | <ul style="list-style-type: none"> <li>• Coordination with SFPUC.</li> <li>• Permitting in compliance with CWA Section 401/404.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Project Precursors</b>         | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Benefits</b>                   | Stabilize banks at confluence with ADLL.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Goals/Objectives Addressed</b> | Flood Protection & Drainage: none<br>Erosion and Sedimentation: A<br>Water Supply: none<br>Water Quality: C<br>Habitat & Environment: none<br>Recreation, Trails, and Public Education: A, B, E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Maintenance Activities</b>     | Education: <ul style="list-style-type: none"> <li>• Repair interpretive kiosks, as needed.</li> <li>• Remove trash, as needed.</li> </ul> Maintenance of bank stabilization measures: <ul style="list-style-type: none"> <li>• Conduct annual inspection of site.</li> <li>• Conduct repairs of bank stabilization measures, as needed.</li> </ul> Vegetation Maintenance: <ul style="list-style-type: none"> <li>• Conduct annual inspection of planted riparian vegetation.</li> <li>• Conduct maintenance of riparian vegetation by utilizing a combination of methods including hand removal, mechanical or chemical clearing. The annual maintenance cost estimate is based on hand removal of riparian vegetation.</li> <li>• Collect and dispose of vegetation debris.</li> </ul> |
| <b>Maintenance Cost Estimate</b>  | \$4,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Notes</b>                      | <ul style="list-style-type: none"> <li>• Houses are encroaching against creek banks. Otherwise, natural channel with no sign of erosion in headwaters.</li> <li>• Major bank erosion near confluence with ADLL. Vertical wall with houses adjacent to bank.</li> <li>• Investigate potential flood hazard in headwaters due to proximity of stream to houses.</li> <li>• No space for a trail along the creek.</li> <li>• Project design should incorporate measures to protect special-status species habitat.</li> </ul>                                                                                                                                                                                                                                                               |
| <b>References</b>                 | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |





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| <b>Project Number</b>                   | R12-1                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Project Name</b>                     | Patterson Run Enhancement Program                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Project Location</b>                 | Patterson Run (Line Y-1)                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Purpose</b>                          | Stabilize creek banks. Encourage community participation in creek stewardship. Encourage implementation of land Best Management Practices.                                                                                                                                                                                                                                                            |
| <b>Project Components</b>               | <ol style="list-style-type: none"> <li>1. Establish a volunteer "Adopt-a-Creek" program that includes trash clean-up at road turnouts. Project would include installation of "no dumping" signs at road turnouts (2).</li> <li>2. Remove trash at road turnout (approximately 370 CY).</li> <li>3. Stabilize approximately 4,000 feet of channel on each bank by grading and revegetating.</li> </ol> |
| <b>Capital Cost Estimate</b>            | \$820,000                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Implementation Issues</b>            | Permitting in compliance with Clean Water Act Sections 401/404.                                                                                                                                                                                                                                                                                                                                       |
| <b>Project Precursors</b>               | -                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Project Benefits</b>                 | Reduce sediment input.                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Goals/Objectives Addressed</b>       | Flood Protection & Drainage: none<br>Erosion and Sedimentation: A<br>Water Supply: none<br>Water Quality: C<br>Habitat & Environment: none<br>Recreation, Trails, and Public Education: A, B, E                                                                                                                                                                                                       |
| <b>Maintenance Activities</b>           | Interpretive kiosks: <ul style="list-style-type: none"> <li>• Repair signs, as needed.</li> </ul> Maintenance of bank stabilization measures: <ul style="list-style-type: none"> <li>• Conduct annual inspection of site.</li> <li>• Conduct repairs of bank stabilization measures, as needed.</li> </ul>                                                                                            |
| <b>Annual Maintenance Cost Estimate</b> | \$175,000                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Notes</b>                            | <ul style="list-style-type: none"> <li>• Erosion along 8,000 feet of channel banks.</li> <li>• Area may be susceptible to landslides during storm events as a result of erosion, earthquake, and heavy rain.</li> <li>• Trash on creek banks at road turnout. Tires on field adjacent to creek.</li> </ul>                                                                                            |
| <b>References</b>                       | -                                                                                                                                                                                                                                                                                                                                                                                                     |



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|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Project Number</b>                   | R12-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Project Name</b>                     | Corral Hollow Creek Landowner Grant Program                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Project Location</b>                 | Corral Hollow Creek (Line X-1)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Purpose</b>                          | Reduce property loss and downstream sedimentation.<br>Encourage community participation in creek stewardship.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Project Components</b>               | <ol style="list-style-type: none"> <li>1. Conduct localized bank stabilization activities along approximately 1,000 feet on each bank. Project includes acquisition of approximately 0.9 acres for bank stabilization.</li> <li>2. Establish a volunteer "Adopt-a-Creek" program to encourage community participation in creek stewardship and raise awareness on erosion issues.</li> </ol>                                                                                                                                                                                                         |
| <b>Capital Cost Estimate</b>            | \$200,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Implementation Issues</b>            | <ul style="list-style-type: none"> <li>• Coordination with local landowners.</li> <li>• Permitting, especially Clean Water Act Section 401/404.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Project Precursors</b>               | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Project Benefits</b>                 | <ul style="list-style-type: none"> <li>• Promotes community involvement in creek stewardship.</li> <li>• Reduces erosion.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Goals/Objectives Addressed</b>       | Flood Protection & Drainage: none<br>Erosion and Sedimentation: A<br>Water Supply: none<br>Water Quality: C<br>Habitat & Environment: none<br>Recreation, Trails, and Public Education: A                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Maintenance Activities</b>           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Annual Maintenance Cost Estimate</b> | \$45,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Notes</b>                            | <ul style="list-style-type: none"> <li>• Project involves creation of a grant program to help land owners to protect against future property loss due to erosion.</li> <li>• Localized cattail invasion near bridge crossing to private property.</li> <li>• Two circular culverts at road crossing into Carnegie State Vehicular Recreation Area.</li> <li>• Potential for trail but would require purchase of easements from private landowners.</li> <li>• Close to the historic town of Carnegie. Potential for coordination with State Parks to add trails and create historic park.</li> </ul> |
| <b>References</b>                       | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

