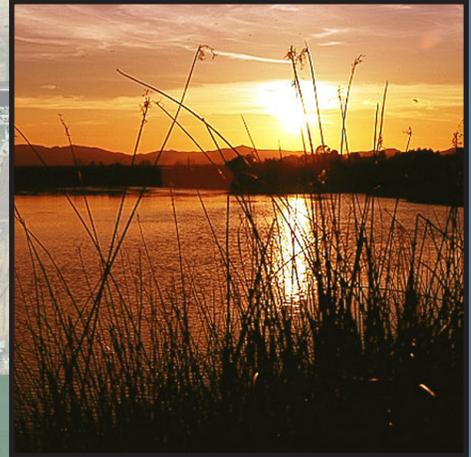


**City of Antioch
Proposition 1E Grant Proposal
Attachment 3**

**Work Plan
Part 1 of 2**



**City of Antioch
Proposition 1E Stormwater Flood Management Grant Application**

**ATTACHMENT 3 –
WORK PLAN**

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<i>(see Proposed Work Section for additional comments on how PSP Requirements are met)</i>	

INTRODUCTION

The City of Antioch is a member of the East County Water Management Association (ECWMA), which is comprised of water agencies, wastewater agencies, flood control districts, and watershed management groups within the eastern portion of Contra Costa County (East County). ECWMA members, listed below, have a long history of cooperative planning for the region.

- **City of Antioch**
- City of Brentwood
- Byron-Bethany Irrigation District
- Town of Discovery Bay
- Contra Costa County
- Contra Costa County Flood Control and Water Conservation District
- Contra Costa Water District
- Delta Diablo Sanitation District
- Diablo Water District
- East Contra Costa Irrigation District
- Ironhouse Sanitary District
- City of Pittsburg



Through their coordinated regional planning efforts, these East County agencies developed a Functionally Equivalent Integrated Regional Water Management Plan (IRWMP) based on planning completed through the following efforts:

- *East County Water Supply Management Study (1996)*
- *Future Water Supply Study (1996, Updated 2002)*
- *Stormwater Management Plan (1999)*
- *Delta Region Drinking Water Management Plan (2005)*
- *East Contra Costa County Habitat Conservation Plan (2006)*

These documents form the basis of the Functionally Equivalent IRWMP umbrella document, which serves to integrate the regional plans listed above into a single overarching regional water management plan for East County. Through development and adoption of the Functionally Equivalent IRWMP, the East County agencies identified a suite of water management projects and programs that, together, will improve water supply reliability and water quality for the region, reduce dependence on imported water, assist in achieving the regional objectives, provide multiple benefits, and eliminate or reduce pollution in sensitive habitat areas and areas of special biological significance.

Through the IRWMP effort, the agencies developed a process for prioritizing short-term and long-term priority projects for implementation which considers the ability of projects to achieve regional objectives, among other factors. In December 2010, the ECWMA approved the addition of four priority projects to the IRWMP, including the subject project of this proposal, the ***Drainage Area 55 – West Antioch Creek Channel Improvements*** project. As discussed in this attachment, this critical flood protection project:

- ✓ Provides multiple benefits, including flood protection, public health protection for a disadvantaged community, water quality and habitat protection and recreation benefits;
- ✓ Is consistent with the goals and objectives of the East Contra Costa County IRWMP;
- ✓ Is consistent with the Region 5 Basin Plan; and
- ✓ Is NOT part of a State Plan of Flood Control.

Project List and Project Specifics

The table on the following page provides an abstract and project specifics for the *Drainage Area 55 – West Antioch Creek Channel Improvements* project, and identifies the implementing agencies and current status.

Project	Lead and Partner Agencies	Abstract and Project Specifics (Location/Function)	Status
<p>Drainage Area 55 – West Antioch Creek Channel Improvements</p>	<p>City of Antioch, Contra Costa County Flood Control and Water Conservation District (CCCFC&WCD)</p>	<p>The City of Antioch is partnering with the Contra Costa County Flood Control District (District) to address chronic flooding of West Antioch Creek through the installation of three 14’ by 7’ Caltrans Standard Box Culverts spanning 620 feet. These box culverts will increase the storm water capacity of the creek, replacing an inadequate concrete trapezoidal ditch and arch culverts. This installation will provide a 25-year level of flood protection (the maximum achieved without expanding the AT&SF RR crossing) to commercial and multi-family properties adjacent to the channel and within a Disadvantaged Community Area by addressing a gap that currently exists between channel improvements made by the Contra Costa County Flood Control & Water Conservation District in 1993 and the earthen channel on the Antioch Fairgrounds property.</p> <p>This project will (1) eliminate the significant public health threat to this DAC caused by chronic flooding and exposure to constituents of concern in degraded flood waters; (2) provide recreation benefits, as flooding in this area often results in the closure of the Contra Costa County Fairgrounds, the Antioch Little League Complex and Prosserville Park; and(3) provide water quality and habitat protection benefits by reducing flood-related debris and pollutant loading in West Antioch Creek, which flows directly into New York Slough.</p> <p>Figure 1 shows the regional location for this project. As noted in the figure, the project is located within the lower reaches of West Antioch Creek watershed, and is NOT part of a State Plan of Flood Control (SPFC). As shown in Figure 2, the project would upsize/extend 620 feet of flood infrastructure from just west of 8th and O Streets to the earthen channel in the Antioch Fair Grounds just south of 10th Street.</p>	<p>A Feasibility Study and Preliminary Design was completed in 2010.</p> <p>Implementation is expected to begin in October of 2012.</p>

Regional Maps

Figure 1 shows the regional location of the *Drainage Area 55 – West Antioch Creek Channel Improvements* project, including the location of project facilities, the regional and local drainage systems, major water bodies and streams, and the project location in relation to the SPFC.

Figure 2 shows the location of the project in relation to FEMA flood hazard zones. In addition, several recent photos taken of flooding of local streets following a March 24, 2011 storm in which 1.35” of rainfall was recorded are provided below (and throughout this Proposal) to illustrate the magnitude of flooding currently experienced; flooding that would be addressed through implementation of the *Drainage Area 55 – West Antioch Creek Channel Improvements Project*.



Project Map

Figure 3 provides a site map showing the geographical location of the project and the surrounding work boundaries. As shown in this figure, the project involves extending/upsizing flood infrastructure by about 620 feet from the creek just west of 8th and O Streets to the earthen channel in the Antioch Fair Grounds just south of 10th Street.

Figure 1 – Regional Project Location Map

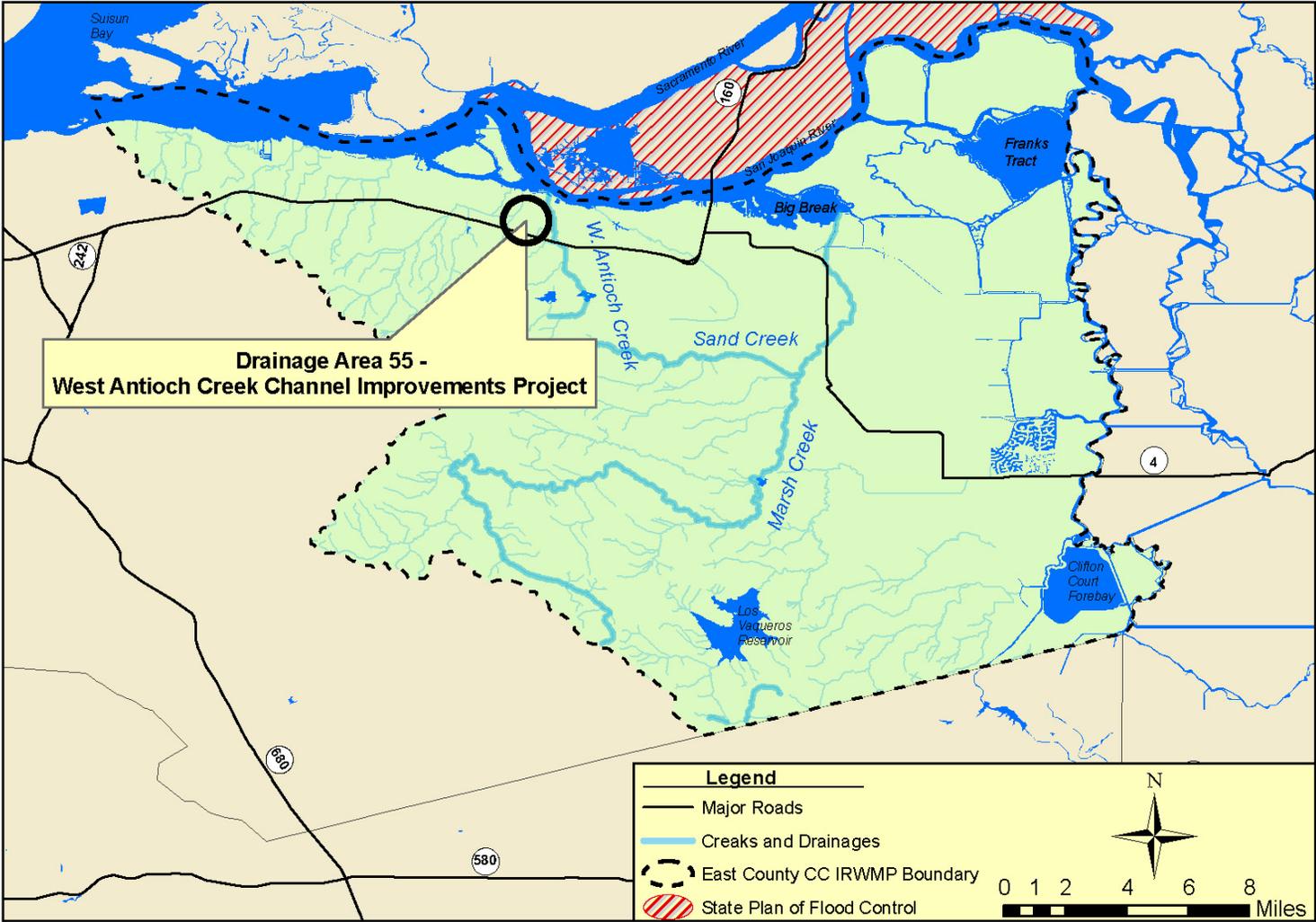


Figure 2 – Project Location vs. FEMA Flood Hazard Map

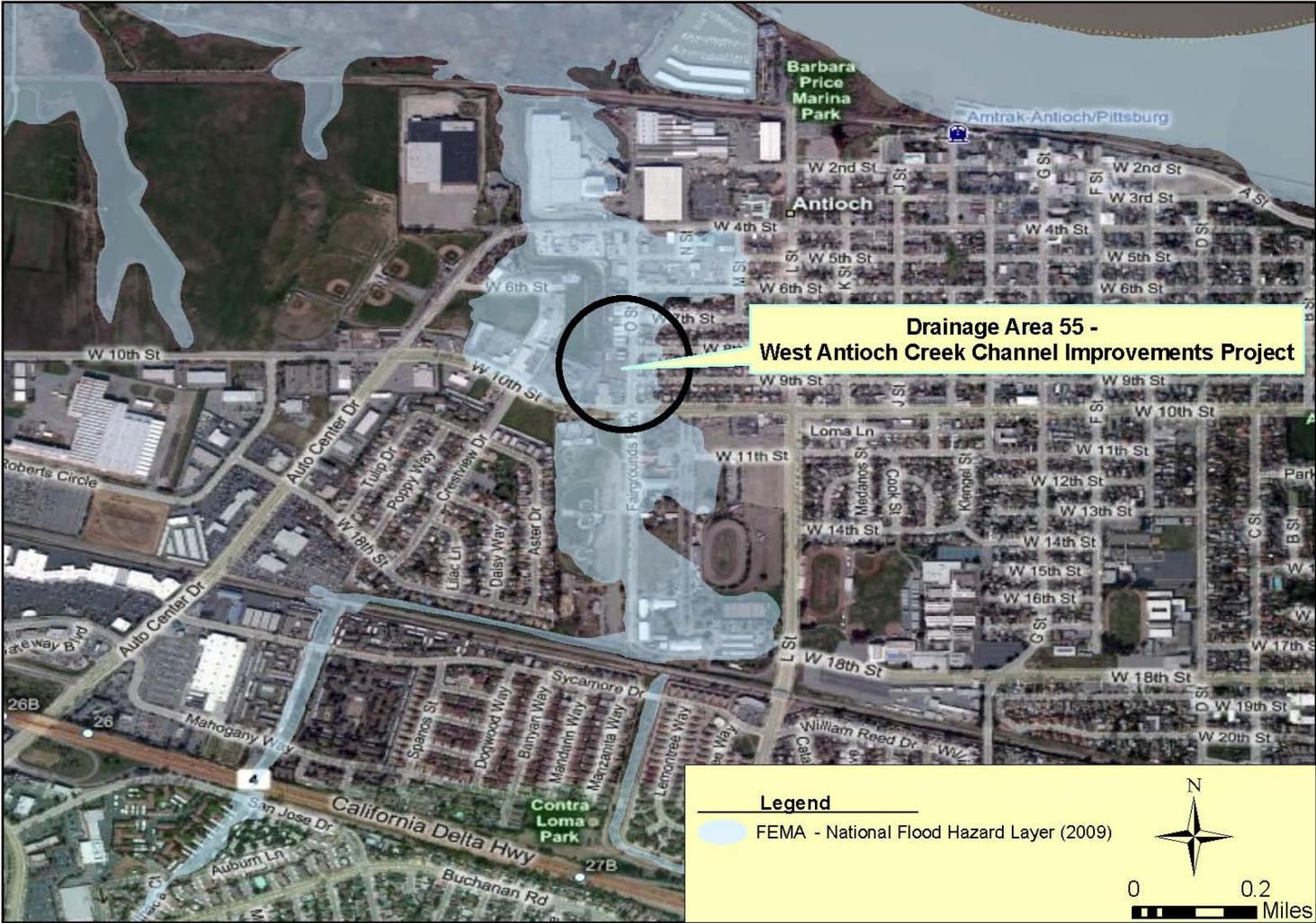


Figure 3 – Drainage Area 55- West Antioch Creek Channel Improvements Project Map



West Antioch Creek Proposed Drainage Area

City of Antioch GIS

Goals and Objectives

This Proposal will advance the objectives of the adopted East Contra Costa County IRWMP through implementation of a project collectively identified as a regional priority by the ECWMA. Specifically, implementation of the *Drainage Area 55 – West Antioch Creek Channel Improvements project* will achieve the following key goals and objectives:

- ✓ To **improve flood protection** for the community, including disadvantaged communities (DACs).
- ✓ To **eliminate a significant public health threat to a DAC** caused by exposure to various constituents of concern present in the degraded flood waters.
- ✓ To **provide water quality and habitat protection** benefits by reducing flood-related debris and pollutant loading in West Antioch Creek, which flows directly into New York Slough; and
- ✓ To **provide recreation benefits** by minimizing the number of times annually the Costa County Fairgrounds, the Antioch Little League Complex and Prosserville Park need to be closed due to flooding.

How the Proposal Advances the IRWMP Objectives and Furthers Regional Priorities

The *Drainage Area 55 – West Antioch Creek Channel Improvements* project included in this Proposal was identified as a high priority for regional implementation through the prioritization process outlined in the East County IRWMP. This project will assist the Region in making significant progress toward achieving the IRWMP objectives. As shown in the following table, this Project will move the region further along the path to achieving these objectives.

Water Management Category	East County IRWMP Objectives	Objective Met by the Drainage Area 55 – West Antioch Creek Channel Improvement Project?
Water Supply	Maximize Dry Year Supplies	n/a
	Maximize Water Supply Reliability	n/a
	Meet Future Demands	n/a
	Maximize the Use of Local Supplies/Reduce Dependence on Imported Supplies	n/a
Water Quality	Maximize Public Health Protection	YES
	Protect and Enhance Source Water Quality	YES
Groundwater Management	Protect Against Overdraft	n/a
	Protect Water Quality from Degradation	n/a
Ecosystem Restoration/ Preservation	Minimize Environmental Impacts	YES
	Maximize Environmental Benefits	YES

Water Management Category	East County IRWMP Objectives	Objective Met by the Drainage Area 55 – West Antioch Creek Channel Improvement Project?
Wastewater	Reduce Pollutant Discharges	n/a
	Maintain Regulatory Compliance	n/a
	Protect Public Health and Environmental Resources	n/a
	Maximize Environmental Sustainability	n/a
Flood Control	Protect Against Flooding	YES
Implementability	Maximize Implementability (e.g., maximize regional coordination, conduct stakeholder outreach, maximize cost-effectiveness, etc)	YES

How the Project Improves Flood Protection

The *Drainage Area 55 – West Antioch Creek Channel Improvements* project provides significant flood benefits. This project is the City of Antioch’s number one priority flood control project in the Region and will remedy chronic flooding to commercial and multi-family properties located adjacent to a deficient reach of West Antioch Creek. As discussed in Attachment 7, it is estimated that these improvements will result in approximately \$7.9M in avoided flood damage costs.

Currently, several commercial and multi-family properties located in the disadvantaged area adjacent to this section of West Antioch Creek experience severe flooding two to three times each year, resulting in damage to local buildings and infrastructure. Additionally, even during mild storms, flooding events in this area cause considerable loss of function, with local businesses becoming inaccessible, resulting in loss of revenue. Portions of the Pittsburg-Antioch Highway, which serves as a major transportation artery to and from East Contra Costa County, and several minor roads are typically inundated and forced to close during these events. Even in relatively minor events, extensive flood inundation can occur. For example, a February 2000 storm in which 1.7 inches of rain fell over a 24-hour period caused the Holiday Lodge Motel to be flooded with several inches of flood water.



Flooding of O St @ W. 4th St following a March 24, 2011 Storm in which 1.35” of rainfall was recorded.

This project will address this chronic flooding problem by replacing undersized concrete trapezoidal channel and arch culverts that are currently limiting stormwater conveyance capacity within this reach of West Antioch Creek with three 14’ by 7’ Caltrans Standard Box Culverts 620 feet long. This will provide a 25-year level of flood protection and increase the capacity of that reach from less than 400 cubic feet per second to 2,810 cubic feet per second.

How the Project Eliminates a Significant Public Health Threat to a DAC

Implementation of the *Drainage Area 55 – West Antioch Creek Channel Improvements* project would eliminate health risks to residents of a disadvantaged community posed by chronic exposure to degraded and potentially dangerous - flood waters. Degraded-quality flood waters in urban areas pose a real threat to human health as they may contain potentially hazardous or infectious materials, such as fecal material from overflowing sewer systems, pathogens, agricultural runoff, and chemicals from commercial and industrial areas. Direct contact with polluted flood waters through wound infections, dermatitis, conjunctivitis, and ear, nose and throat infections poses a significant risk of infection. Contact with debris-laden flood waters can also cause injury.

How the Project Provides Water Quality and Habitat Protection Benefits

Implementation of the *Drainage Area 55 – West Antioch Creek Channel Improvements* project would also provide water quality and habitat protection benefits by reducing flood-related debris and pollutant loading to West Antioch Creek, which flows directly into New York Slough. Beneficial uses in New York Slough (included in the revised Basin Plan) are: commercial and sport fishing, estuarine habitat, fish migration, preservation of rare and endangered species, wildlife habitat, water contact recreation, non-contact water recreation, and navigation. Implementation of this project would help to prevent against further surface water quality degradation in New York Slough, Suisun Bay, and the Delta by constituents of concern such as chloride and mercury.

The *Drainage Area 55 - West Antioch Creek Channel Improvement Project* will prevent the chronic problem of flood waters leaving West Antioch Creek, flooding local residential, commercial and industrial areas, and then returning to the San Joaquin River basin as a contaminated source. In addition, the Project will also serve to protect and enhance the valuable natural resources of East Contra Costa County. The project will protect natural resources by reducing the geomorphic and water quality impacts associated with flood waters from urbanized areas.

How this Project Provides Recreation Benefits

Flooding of the West Antioch Creek often results in the closure of the Costa County Fairgrounds, the Antioch Little League Complex and Prosserville Park. Implementation of this Project will reduce the frequency of the closures and the associated loss of recreation.

Purpose and Need

As described above, successful implementation of the *Drainage Area 55- West Antioch Creek Channel Improvement Project* will further the objectives of the IRWMP. In addition to furthering the IRWMP objectives, it is critical that the proposed Project is implemented to avoid a series of negative impacts associated with non-implementation. Negative impacts associated with Proposal non-implementation may include:

- **Local Flood Damages:** If the *Drainage Area 55 – West Antioch Creek Channel Improvement Project* does not proceed, flood-related damages will persist, including structural damage, clean-up costs and loss of function. Flood damages are of particular concern because they include disadvantaged areas.
- **Delta Water Quality Impacts:** If the *Drainage Area 55 – West Antioch Creek Channel Improvement* project does not move forward, this urbanized area will continue to flood, and Delta water quality will be impacted. Water quality impacts to Delta supplies could have ramifications statewide.
- **Public Health Threats and Impacts to DACs:** Without the *Drainage Area 55 – West Antioch Creek Channel Improvement Project*, DAC residents in this area will continue to face damages caused by severe flooding on an annual basis, along with the public health implications associated with the degraded water quality of flood waters in urbanized areas.



Flooding at intersection of W. 10th St and O St following a March 24, 2011 storm in which 1.35” of rainfall was recorded.

Consistency with Basin Plan

The bulk of the East County Region, including the project area for the *Drainage Area 55 – West Antioch Creek Channel Improvement Project*, falls within the Central Valley Regional Water Quality Control Board (Region 5). This proposal is consistent with the Region 5 Basin Plan, which identifies water quality objectives for the Sacramento-San Joaquin Delta based on determined beneficial uses. The Basin Plan lists the following existing beneficial uses for the Sacramento-San Joaquin Delta:

- Municipal and Domestic Supply (Existing)
- Agricultural Supply – Irrigation and Stock Watering (Existing)
- Industrial Supply – Process and Service Supply
- Recreation - Contact and Other Non-Contact
- Freshwater Habitat – Warm and Cold
- Migration – Warm and Cold
- Spawning – Warm
- Wildlife Habitat
- Navigation

Specific water quality objectives for surface waters in the Region 5 Basin Plan include the following.

- Bacteria
- Biostimulatory Substances
- Chemical Constituents
- Color
- Dissolved Oxygen
- Floating Material
- Mercury
- Methylmercury
- Oil and Grease
- pH
- Population and community ecology¹
- Pesticides
- Radioactivity
- Salinity
- Sediment
- Settleable Material
- Suspended Material
- Tastes and Odors
- Temperature
- Toxicity
- Turbidity

The *Drainage Area 55 – West Antioch Creek Channel Improvement Project* will help to reduce the loading and / or concentrations of several of these parameters in Delta supplies. Specifically, this project will eliminate flooding in an urbanized area and subsequent introduction of polluted flood waters into the Delta, potentially reducing loading of bacteria, biostimulatory substances, chemical constituents, floating material, mercury, oil and grease, pesticides, salinity, sediment, settleable material, suspended material, and taste-and-odor-causing compounds. In addition, pollution from flood waters could cause pH impacts and contribute to increased temperature, turbidity, color and toxicity and decreased dissolved oxygen. While the project-level reductions in pollutant loading and improvements in parameter concentrations noted above are generally expected to be too small to measure, the overall effect is an improvement in water quality, consistent with Region 5 Basin Plan objectives. As a result, this project is consistent with the Region 5 Basin Plan.

Completed Work and Existing Data and Studies

The table below provides a summary of work already completed for the *Drainage Area 55 – West Antioch Creek Channel Improvement Project* and identifies existing data and studies that have been performed to support the project’s feasibility and approach. Completed plans and specifications have been provided as separate files to this attachment.

Summary of Completed Work and Key Findings for the <i>Drainage Area 55- West Antioch Creek Channel Improvement Project</i>	Existing Data and Studies
<p>In 1984, the Contra Costa County Flood Control District (District) issued a draft Environmental Impact Report (EIR), including an Engineer’s Report, for the West Antioch Creek Improvements. The Engineer’s Report recommended improving the West Antioch Creek channel from its crossing of what was then the Southern Pacific Railroad (now Union Pacific Railroad), downstream to its confluence with the brackish marshes of the San Joaquin River. Recommended Improvements consisted of concrete-lined channels, trapezoidal earthen channels, and box culverts along the stream’s length. In 1985, the County Board of Supervisors approved the EIR.</p> <p>In 1988, the Army Corps of Engineers completed a reconnaissance report confirming the technical feasibility of proposed flooding improvements.</p> <p>In 1993, the District implemented a portion of West Antioch Creek Improvement Project by constructing concrete-lined and earthen trapezoidal channel improvements from near the creek’s confluence with the San Joaquin River to approximately 600 feet north of West 10th Street with local funds. The limited resources did not allow the channel improvements to extend upstream of 8th Street. As a result, a 650-foot gap exists between the 1993 channel improvements and the earthen channel on the Antioch Fairgrounds property. Stormwater is currently conveyed through the “gap” via an existing arch culvert and gunite ditch, both with limited capacity. The commercial and multi-family properties adjacent to the deficient reach and within a Disadvantaged Area of the community (0.25 square miles), continue to experience flooding on nearly an annual basis.</p> <p>A project-specific Feasibility Study to address the “gap” in the West Antioch Creek channel improvements was completed in May of 2010. A preferred alternative (i.e., installation of three 14’ by 7’ Caltrans Standard Box Culverts spanning 620 feet) was selected from 14 different alternatives and preliminary plans and detailed costs for the preferred alternative were prepared.</p>	<ul style="list-style-type: none"> • Draft Environmental Impact Report (1984) for Larger West Antioch Creek Project • Army Corps of Engineers Reconnaissance Report (1988) • Project Specific Feasibility Study (2010) • Cost Protection Considerations (2010) • Preliminary Plan and Typical Sections (2010)

Project Timing/Phasing and Integrated Elements

The *Drainage Area 55 – West Antioch Creek Channel Improvement Project* is a stand-alone project, and does not depend upon other projects in this Proposal to provide the benefits described. As a result, implementation of the tasks described in this Attachment will yield full benefits, and the project schedule is not dependent upon completion of any other project.



Examples of flooding that occurred in the vicinity of the Project area following a March 24, 2011 storm in which 1.35" of rainfall was recorded. This flooding would be addressed through implementation of the *Drainage Area 55 – West Antioch Creek Channel Improvements Project*.

Proposed Work

This section includes a detailed discussion of the various tasks needed to implement the *Drainage Area 55 – West Antioch Creek Channel Improvement* project. In accordance with the PSP, this section specifically addresses the following:

PSP Requirements

- ✓ Tasks are detailed and complete in order to demonstrate that the project can be implemented
- ✓ Work Item submittals are clearly indicated for each of the tasks (**see individual task write-ups**)
- ✓ A list of project permits and their current status is provided (**see pg 3-18**)
- ✓ The status of environmental compliance activities is discussed (**see pg 3-18**)
- ✓ Preliminary plans and specifications have been submitted to demonstrate consistency with the design tasks noted in the Work Plan (**see Att3_SWF_WorkPlan_2of2**)
- ✓ Scientific and technical information has been submitted to demonstrate feasibility (**see Att3_WorkPlan_2of2**)
- ✓ There is a discussion of the data management and monitoring deliverables (**see individual task write-ups**)
- ✓ In addition, this section includes a discussion of the required items listed on page 28 of the PSP:
 - Description of work to be performed and current status of each task (**see individual task write-ups**)
 - Procedures by which the applicant will coordinate with its partner agencies (**see pg 3-21**)
 - Discussion of standards used in implementation (**see pg 3-21**)
 - Development of performance measures and monitoring plans (**see pg 3-21**)
 - Discussion of acquisition of land or rights-of-way status (**see pg 3-17**)
 - Discussion of merits of materials and computational methods (**see pg 3-21**)

Drainage Area 55 - West Antioch Creek Channel Improvements

Project Summary:

In 1993, the Contra Costa Flood Control & Water Conservation District (District) constructed channel improvements for West Antioch Creek and improved flood capacity within the limits of the project to a 25-year level of protection (maximum achieved without expanding the AT&SF railroad crossing). The resources available in 1993 provided for a project that extended from the San Joaquin River to 8th Street in Antioch. The limited resources did not allow the channel improvements to extend upstream of 8th Street. As a result, a 650-foot gap exists between the 1993 channel improvements and the earthen channel on the Antioch Fairgrounds property. Storm water is currently conveyed through the “gap” via an existing arch culvert and gunite ditch, both with limited capacity. The commercial and multi-family properties adjacent to the deficient reach and within a Disadvantaged Community (0.25 square miles) continue to experience flooding multiple times per year.

The City of Antioch is partnering with the District to address this “gap” and the resulting chronic flooding of West Antioch Creek through the installation of three 14’ by 7’ Caltrans Standard Box Culverts spanning 620 feet. These box culverts will increase the storm water capacity of the creek, replacing an inadequate concrete trapezoidal ditch and arch culverts. This installation will provide a 25-year level of flood protection to commercial and multi-family properties adjacent to the channel and within a Disadvantaged Community Area by addressing a gap that currently exists between channel improvements made by the Contra Costa County Flood Control & Water Conservation District in 1993 and the earthen channel on the Antioch Fairgrounds property.

This project will (1) **improve flood protection** for the community, including disadvantaged communities (DACs); (2) **eliminate the significant public health threat** to this Disadvantaged Community (DAC) caused by chronic flooding and exposure to constituents of concern in degraded flood waters; (3) **provide water quality and habitat protection benefits** by reducing flood-related debris and pollutant loading in West Antioch Creek, which flows directly into New York Slough, and (4) **provide recreation benefits**, as flooding in this area often results in the closure of the Contra Costa County Fairgrounds, the Antioch Little League Complex and Prosserville Park.

Technical Documentation:

Technical documents that support the feasibility of this project include:

- Draft Environmental Impact Report (1984) for Larger West Antioch Creek Project
- Army Corps of Engineers Reconnaissance Report (1988)
- Project Specific Feasibility Study (2010)
- Cost Protection Considerations (2010)
- Preliminary Plan and Typical Sections (2010)

Copies of these documents have been included as **Att3_SWF_WorkPlan_1of2**

Task 1A – Project Administration Tasks

Project administration tasks will include overall project administration and management, development of a Labor Compliance Program, and project reporting (including reporting on project monitoring and assessment).

Current Status:

Project details and costs have been finalized, the preferred alternative has been identified, and a cost - benefit ratio has been prepared. In addition, outreach meetings have been scheduled to keep the community informed of the project schedule.

Proposed Work Tasks & Deliverables:

Project administration tasks and deliverables are summarized in the following table.

Task	Description	Deliverables
1A.1 - Administration	This task involves general project administration including coordination with project partners and preparation of project invoices. This task also includes preparing a Labor Compliance Program and development of the quarterly, annual and final reports required by the Grant Agreement.	<ul style="list-style-type: none"> • Invoices • Submission of Labor Compliance Program • Quarterly, Annual and Final Reports

Task 1B –Land Purchase/Easement Tasks

Preliminary negotiations have been initiated with the impacted property owner to determine minimum impacts to existing business.

Current Status:

A new permanent easement will be required for the box culvert system. In addition, temporary construction easements will be required.

Proposed Work Tasks & Deliverables:

Land purchase / easement tasks and deliverables are summarized in the following table.

Task	Description	Deliverables
1B.1 - Channel Easements	This task includes obtaining 28, 686 square feet of permanent easement for required box culvert system, and acquiring approximately 16,000 sq. ft. of temporary construction easements.	Temporary and permanent easements

Task 1C – Planning/Design/Environmental Documentation Tasks

This task involves completing planning and design work, and securing all necessary approvals.

Current Status:

Planning and Design Status. All planning activities for this project are complete. A project feasibility study, completed in 2010, evaluated fourteen potential project alternatives, and extensive cost analysis was completed to identify a preferred approach. A preliminary project drawing showing layout of proposed culvert alignment and impacted right-of-way needs has been developed, along with the system profile and necessary survey information. In addition, necessary easements have been identified.

Environmental Documentation Status. Although an EIR for the larger West Antioch Creek Improvement project was adopted in 1985 and several improvements were constructed in 1993, CEQA documentation has not been completed for the improvements needed to address the 650-foot gap between the 1993 channel improvements and the earthen channel on the Antioch Fairgrounds property. Documentation is expected to be completed by the end of 2011, pending funding.

Permitting Status. Several permits have been identified as necessary for this project to move forward. These permits are presented in the following table.

Permit	Status
ACOE 404	An initial consultation meeting has been held. Expected approval date: September 2012.
DFG 1602	The process for obtaining the 1602 Lake and Streambed alteration Agreement has not been initiated. Expected approval date: September 2012.
SWRCB 401 Water Quality Certification	The process for obtaining the 401 Water Quality Certification has not been initiated. Expected approval date: September 2012.

Proposed Work Tasks & Deliverables:

Proposed planning, design, environmental documentation, and permitting work tasks are summarized below.

Task	Description	Deliverables
1C.1 - Design	This task includes preparing plans and specifications for project implementation, including 30%, 60%, 90% and final design documents.	Project plans and specifications
1C.3 - Environmental Documentation	This task involves completing the Habitat Conservation Plan process as well as completing and filing CEQA documentation.	CEQA Documentation
1C.4 - Permitting	This task includes securing the following required permits: ACOE 404, DFG 1602, and SWRCB 401.	ACOE 404, DFG 1602 and SWRCB 401 Permit approvals

Task 1D – Construction/Implementation Tasks

Construction tasks for this project are described below.

Current Status:

No construction-related work has been completed to-date.

Proposed Work Tasks & Deliverables:

Construction administration tasks and deliverables are summarized in the following table.

Task	Description	Deliverables
1D.1 - Construction Contracting	This task includes all of the items necessary for entering into a construction contract, including bid advertisement, pre-bid conference, providing specific details and answering bidding questions, awarding the project, holding a pre-job meeting , and meeting with the selected contractor and sub-contractors.	Construction Contract
1D.2 - Mobilization and Sitework	This task includes the Water Pollution Control Program, water control, temporary fence, clearing and grubbing, traffic control, mobilization, and construction area signs.	Completed sitework
1D.3 - Construction	This task includes physical project construction, including wing walls, rip rap, fine grading, utility relocation, channel excavation, and culvert construction.	Construction contract Completed facility

Task 1E – Environmental Compliance/Mitigation/Enhancement Tasks

This task includes all environmental mitigation needed to offset potential impacts of project implementation.

Current Status:

No work has been completed on this task to-date.

Proposed Work Tasks & Deliverables:

Environmental mitigation work tasks are summarized in the following table.

Task	Description	Deliverables
1E.1 - Environmental Improvement / Mitigation	This task includes implementation of the mitigation activities identified in the Habitat Conservation Process, which provides for project mitigation as outlined in the East County Habitat Conservation Plan. In addition, the task includes implementing project mitigation measures required by regulatory agencies.	Completed mitigation

Task 1F – Construction Administration Tasks

This task includes all construction administration activities.

Current Status:

No work has been completed on this task to-date.

Proposed Work Tasks & Deliverables:

Construction administration work tasks and deliverables are summarized in the following table.

Task	Description	Deliverables
1F.1 - Construction Inspection	<p>This task includes the following:</p> <ul style="list-style-type: none"> • Construction Inspection: construction management and project oversight • Material Testing: Testing and approval of construction materials (i.e., concrete testing, reinforcing steel approval, compaction testing, base material approvals, etc.) • Contract Administration: Approval of billing submittals, certified payrolls, processing of change orders and contract payments • Project Acceptance: Prepare final report and obtain Council Approval • Surveying: Survey site to obtain design and construction information 	Final Project Acceptance

Additional Project Information

Additional detail about the project, as requested by the PSP, is provided below:

Coordination with Partner Agencies:

The City of Antioch and the District will develop and enter into a Joint Exercise Power Agreement (JEPA) outlining action items for the proposed flood risk reduction project along West Antioch Creek at 10th Street. The JEPA will outline the responsibilities of both agencies and will include all tasks required to construct this project, including planning, alternatives analysis, hydraulic analysis, engineering design, environmental permitting, real property assessment and acquisition, public outreach, utility coordination, surveying, establishing project funds, advertising construction documents, contract award, construction inspection, and maintenance.

Standards that Will Be Used in Implementation:

The City of Antioch and the District will adhere to applicable standards in designing and implementing the project. Specifically, the project will incorporate the following standards:

1. State of California Department of Transportation Standard Specification and Construction Details, May 2006
2. City of Antioch Construction Details
3. Contra Costa County Flood Control & water Conservation District Special Construction Details

Performance Measures and Monitoring Plans:

As discussed in detail Attachment 6, project monitoring will be conducted to assess and evaluate project performance. Monitoring will include:

1. Tracking design storm information against actual storm data to ensure the project is functioning as designed.
2. Conducting routine post-project surveys to ensure design grades are maintained such that maximum capacities are maintained within the channel system.
3. Developing mitigation agreements with involved regulatory agencies to ensure mitigation success.

Merits of Materials and Computational Methods:

All applicable and appropriate building and construction materials and methods standards have been and will be used in implementing the project. These materials and methods will be identified in the design phase, and further documented during final design in the construction plans and specifications.

Deliverables to DWR:

Quarterly reports will be prepared and submitted to DWR. These reports will include budget progress reports, milestone reports, results of assessments and program evaluations, invoices for billable activity, and goals for the next quarter. A final report will be prepared and submitted to DWR. The final report will consist of a final budget report (matching fund and grant funds accounting), deliverables report, results of programs assessments (copies of reports), and lessons learned.

Attachments:

The following technical documents have been included as part of **Att3_SWF_WorkPlan_2of2**

- West Antioch Creek Improvements EIR (1984)
- Army Corps of Engineers Reconnaissance Report (1998)
- Drainage Area 55 – West Antioch Creek Channel Improvements Feasibility Study/Cost Protection Considerations (May 2010)
- Preliminary Plan and Typical Sections (2010)