



Attachment 9: Program Preferences

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Introduction

The City of Chino Arterial Flood and Stormwater Management Project meets multiple Proposition 1E Program Preferences, as defined in the 2012 Guidelines, Section II.F. The following discussion identifies the specific Program Preferences the Proposal will meet; the certainty that the Proposal will meet the Program Preferences; and the breadth and magnitude to which the Program Preferences will be met.

Program Preferences Met by the Project

1. Include Regional Projects or Programs

The City of Chino Arterial Flood and Stormwater Management Project is part of the Santa Ana Watershed Project Authority “One Water One Watershed” (OWOW), an Integrated Regional Water Management Plan in the Santa Ana River Watershed. Proof of the City’s adoption of the IRWM and the IRWM’s adoption of the Project are provided in Attachment 1: Authorization and Eligibility Requirements.

Certainty: High

Magnitude and Breadth: High

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2. Effectively Integrate Water Management Programs and Projects Within a Hydrologic Region

The City of Chino Arterial Flood and Stormwater Management Project, as part the Chino Preserve Natural Treatment System Master Plan, is one of the initial steps in the region's water quality treatment train in the Prado Basin. Stormwater from the Project Area is treated for sediment removal and erosion reduction prior to flowing downstream to El Prado Lake and ultimately to the Prado Basin.

The Pine Avenue Storm Drain Project is also included in the IRWM "One Water One Watershed" plan and, due to nature of the underground facilities at risk under current flood conditions, is supported by several local, State, and private entities including the Inland Empire Utilities Agencies (IEUA), The Santa Ana Watershed Project Authority (SAWPA), and the Orange County Water District (OCWD).

Certainty: High

Magnitude and Breadth: High

3. Effectively Resolve Significant Water-Related Conflicts Within or Between Regions

Construction of the Project will result in improved water quality through a reduction in erosion and sediment transport to the Prado Basin, thereby providing source water protection for downstream users such as the Orange County Water District, as well as reducing water quality impairments for downstream sensitive wildlife and habitat.

The Prado Basin serves as the principal source of recharge for the Orange County groundwater basin, a primary source of drinking water for Orange County. The project provides for the construction of a portion of the overall master planned regional water quality treatment train. The designated beneficial downstream uses are water contact and non-contact recreation, warm fresh water habitat, wildlife habitat, and habitat for rare, threatened, or endangered species.

Certainty: High

Magnitude and Breadth: Medium

4. Address Statewide Priorities

The City of Chino Arterial Flood and Stormwater Project addresses Statewide Priorities through 1) **Practice Integrated Flood Management** and 2) **Protect Surface Water and Groundwater Quality**. Below outlines the Project's contribution to these Statewide Priorities:

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a. Practice Integrated Flood Management

Better Emergency Preparedness and Response

Pine Avenue provides a primary east/west traffic circulation route in the area and is highly utilized by commuter and truck traffic as well as emergency response vehicles. The current flooding conditions in this area result in road closures and detours around this major east/west arterial and have caused significant long-term damage to the roadway. Due to the lack of an adequate storm water conveyance system, the road experiences extensive erosion, which affects the flow of traffic and, more importantly, the ability for emergency response vehicles to reach their destination in the most efficient and prompt manner that could otherwise be achieved.

By constructing this storm water conveyance system, Pine Avenue will be improved reducing the frequent road closure incidents and maintaining better road conditions with less maintenance. Once construction is complete, this area will be designed to handle 100-year events without the foreseeable probability of road closures and substantially reduced extent of road erosion.

Certainty: High

Magnitude and Breadth: High

Improved Flood Protection

The lack of adequate storm water conveyance on Pine Avenue in the City of Chino (City) and the resulting deterioration of the roadway continue to threaten the viability of public infrastructure, private property, local business, and the ability for the City to provide adequate emergency response. Completion of this Project would address storm water flood risk to this major east west arterial, which connects to Interstate 15 and State Route 71, while providing larger regional benefits in the process.

The Pine Avenue roadway profile will be raised and the channel crossing improved with the installation of reinforced concrete box culverts, providing increased flood protection. Currently, Pine Avenue is closed during high frequency storm events as minimal as 2-year storm event intervals due to inadequate storm water management, resulting in excessive flooding and “backwater” events. Through culvert and roadway improvements, there will be a significantly reduced frequency in road closures and a reduced potential for roadway washout.

Pine Avenue is a primary east west traffic route in the region. Closure of the roadway due to flooding results in significant impacts to regional commuter and truck traffic flow, as well as an increase in the region’s State and Interstate highway traffic. In addition,

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there are significant potential impacts to emergency response time due to detours or roadway conditions resulting from flooded road closures as well as the deterioration of the existing roadway due to erosion.

The businesses impacted by the closures and detours include a large number of agricultural related operations and dairy farms. Impacts to dairy operations specifically result in impacts not only to the immediate area, but to the overall economy and business on a state level. Milk distribution trucks travel to each dairy on average 2 times per day. During road closures and detours, these systems of transporting milk and dairy products are constrained, resulting in economic losses to the dairies as well as a reduction in available product to all areas served by Chino Basin large dairy business. With over 60 operating dairies in the area with over 50,000 milking cows, the local dairy industry supports approximately 5 to 10 percent of the milk production in the State of California, locally, and regionally, with examples of locally produced product being processed at the California Dairy Industry Plant (Milk Co-op, located in Artesia), Driftwood Dairies (processing in Azusa), Rockview Dairies (processing in Downey), and Scotts Brothers Dairies (processing in San Jacinto).

During moderate storm events with high frequency recurrence intervals (2-year storm events or larger) there is a high potential and historical occurrence of the undermining of Pine Avenue. There are four major utility lines running beneath the roadway that are subject to damage in the event of a street failure: The Inland Empire Brine Line (formerly known as the Santa Ana Regional Interceptor or "SARI" line), the Inland Empire Utility Agency's Treatment Plant 1 Outfall Line; the water line servicing the California Institution for Women in Chino; and a Natural Gas Line.

The Inland Empire Brine Line ("IEBL") is intended to carry brine and domestic and industrial waste. Currently, it handles domestic sewage from the California Institution for Women and residents within the City of Chino, and also has connections for emergency discharge for the surrounding dairies. In the event of line damage or failure, the resulting sewage leak would pose a regional environmental hazard to wildlife, habitat, the immediate public, and downstream water users.

The Inland Empire Utility Agency's Treatment Plant 1 Outfall Line is owned and maintained by the Inland Empire Utility Agency ("IEUA"). The line conveys recycled water to downstream water users and outflows into El Prado Lake. Prior to discharging into the lake, the water is stripped of its high chlorine content at IEUA's Dechlor facility. A breach of this line would allow chlorinated water to flow directly into El Prado Lake, killing the fish and plant life within the lake.

The water line running under Pine Avenue to the California Institution for Women, a female-only state prison located within the City of Chino, is the only source of water for the prison. Damage to this underlying water line would interrupt all water supplies to

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the prison. Water service disruption would have a significant impact to the Institution and would cause a relocation of prisoners to another facility.

A road failure has the potential to cause a rupture in the natural gas line running under the roadway. A rupture to this line has a significant impact both locally and regionally. A rupture locally, coupled with a detonation of the high pressure gas main, will likely have an impact area of a quarter mile from the rupture impacting over 250 local residences, the SCE transmission lines, and all circulation in the immediate area. Regionally, the impact would disrupt the service in several counties in Southern California including parts of San Bernardino, Riverside, Orange, and San Diego Counties. The gas transmission line is the southern California natural gas source for a significant number of residential, commercial, and industrial uses within the four county area.

Flood events at this location have additional regional effects through deterioration in water quality due to erosion, sediment transport, and increased pollutant load of suspended solids and sediments being conveyed to the Prado Basin. The Prado Basin contains some of the best and largest riparian habitat in Southern California. The Prado Basin also serves as the principle source of groundwater recharge for downstream water users, primarily those within the Orange County Water District service area.

The City conducted studies through the Chino Preserve Specific Plan in 2003 and prior to determine the size of the ultimate needed facilities within the subject area. To maximize the resources available for the region, the City proposes under this grant application to construct the storm water conveyance and management system for the ultimate condition, which provides for a minimum 50-year life of the project.

Certainty: High

Magnitude and Breadth: High

More Sustainable Flood and Water Management Systems

The current conditions in the area do not provide sufficient capacity for storm water conveyance or flood control, resulting in significant and damaging flood events in events as frequent as a 2-year storm event. In constructing this project for the ultimate need within the subject area, the City is planning for a long-term sustainable system that will have a minimum life span of 50 years addressing current impacts and planning for the long term urbanization of the area. Through roadway and storm drain improvements, the roadway will require less short and long term maintenance, as well as result in a reduction in the frequency of potential road washout.

The proposed Pine Avenue Storm Drain Project will be located at a downstream point of the Preserve drainage area, which is approximately 5,435 acres. The vast majority of

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stormwater runoff from the Preserve project area flows south-southwest, under Pine Avenue to Chino Creek, which drains along the base of the Chino Hills, and a much smaller portion drains to Cucamonga Creek. Both Chino and Cucamonga Creeks drain into the Prado Basin before ultimately flowing to the Santa Ana River. This grant project focuses solely on improvements to Pine Avenue within the Preserve project area. Pine Avenue is the only major arterial in the Preserve and serves as an important east-west link between the 71 freeway and the I-15 freeway.

To achieve required water quality treatment from the Preserve Project area, a combination of source control, site design, and treatment control BMPs will be implemented. Storm drain facilities will be required to provide reduced velocities at storm water outlets in order to protect downstream drainage courses from erosion and scouring. Drainage outlets and other drainage facilities will also be designed to control urban runoff pollutants.

Design of Natural Treatment Systems (NTS) will work in conjunction with flood control facilities to control runoff. NTS is considered a “green” approach through the use of artificial wetlands and bioswales that incorporate vegetation at strategic locations to decrease peak flows of stormwater runoff, increase the detention time, and trap pollutants and/or provide for chemical breakdown.

The City of Chino Arterial Flood and Stormwater Project will address one of the initial elements of this regional storm water treatment train through the reduction of sediment transport by ameliorating the storm water conveyance within the un-named creek discharging into the Prado Lake and the associated erosion and scour to the downstream berm.

Certainty: High

Magnitude and Breadth: High

b. Protect Surface Water and Groundwater Quality

Protecting and Restoring Surface Water and Groundwater Quality to Safeguard Public and Environmental Health and Secure Water Supplies for Beneficial Uses

Construction of the Pine Avenue Storm Drain project will result in improved water quality, thereby providing source water protection for downstream users such as the Orange County Water District as well as reducing water quality impairments for downstream wildlife and habitat.

The area surrounding Pine Avenue is part of the former agricultural preserve in the Prado Basin, which contains some of the best and largest riparian habitat in Southern California. The Prado Basin also serves as the principle source of recharge for the

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Orange County groundwater basin, a primary source of drinking water for Orange County. This project provides for the construction of a portion of the overall regional water quality treatment train (sediment and associated gross solid removal), which ultimately flows to the El Prado Lake.

Reduced flooding events and improved storm flow control and conveyance will contribute to downstream water quality. The designated beneficial downstream uses are water contact and non-contact recreation, warm fresh water habitat, wildlife habitat, and habitat for rare, threatened, or endangered species. The downstream waterways include an unnamed channel, as well as El Prado Lake and other several contributing impaired confluences such as Mill Creek and Chino Creek. Several of the water quality impairments in the Prado Basin are on the 303(d) list.

Through the construction of this grant project, improvements to Pine Avenue will significantly improve flood control and storm water quality. Through the integrated approach of a treatment train, the combination of source control, site design, and treatment control BMPs will lead to greater improvements than using only one treatment method. The proposed project will focus on improving one significant element of this overall regional approach to water quality.

Certainty: High

Magnitude and Breadth: Medium