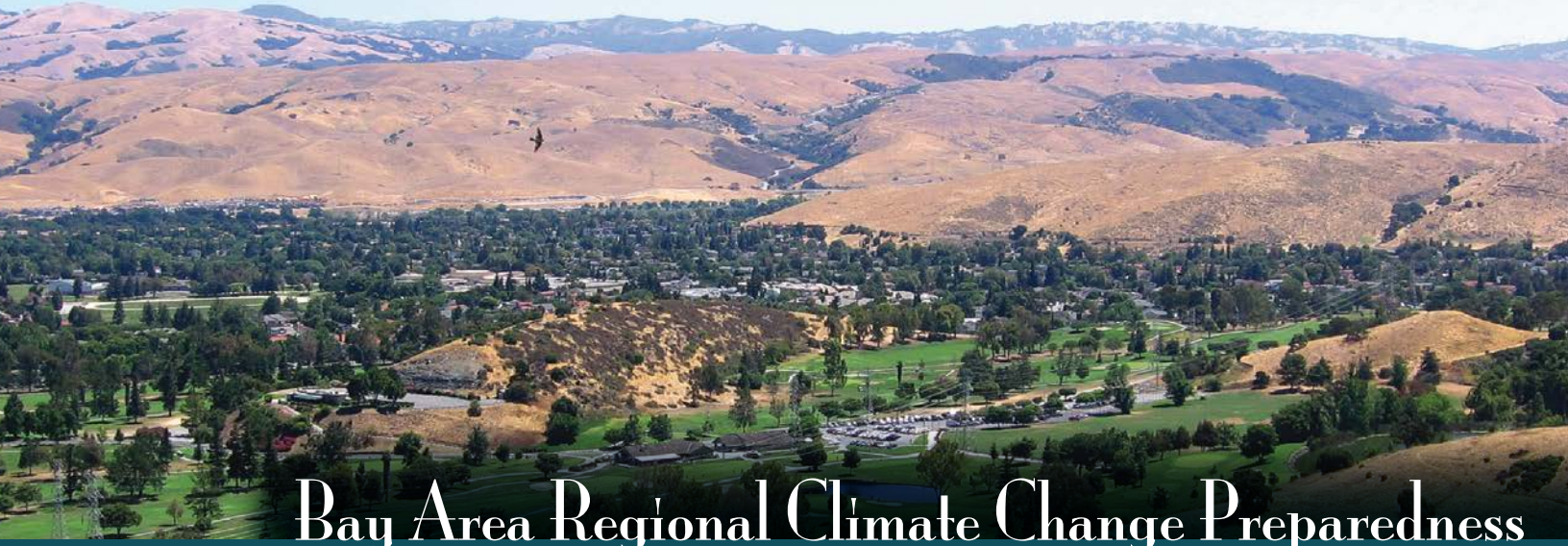

Bay Area Regional Climate Change Preparedness

Attachment 7

Disadvantaged Community Assistance

Association of Bay Area Governments

Proposition 84

Integrated Regional Water Management

2015 Implementation Grant Application

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Introduction

This attachment documents how the Bay Area Regional Climate Change Preparedness Program addresses critical water supply and quality needs of a Disadvantaged Community (DAC) within the San Francisco Bay Area.

Documentation of the Presence of DACs within the Region

The Department of Water Resources (DWR) defines disadvantaged communities (DACs) as communities with an annual median household income (MHI) that is less than 80 percent of the statewide annual MHI. While the MHI of each of the nine Bay Area counties is well above the 80 percent threshold for the State, there are disadvantaged communities located in each county. DWR's Disadvantaged Community Mapping Tool (DCMT)[1] was used to identify projects located within a DAC. For the purpose of this analysis, DACs were defined as census places, tracts, or block groups with an MHI of $48,875 or less, which is 80 percent of the statewide MHI. The U.S. Census Bureau's American Community Survey (ACS) from the five-year period of 2009 to 2013 was used to provide the median income information for the DCMT. Local knowledge of project communities, supplemented by income surveys, was used to determine the DAC status of communities, in addition to the DCMT and ACS information.

The Bay Area IRWM Region has a total population of approximately 6,510,091 people; the population living within DACs in the region is approximately 1,066,894, equivalent to 16.4% of the total population in the region (American Fact Finder 2013[2]). Census tract block groups that qualify as DACs cover an area of 331,390 acres, or approximately 11.4% of the geographic area of the Bay Area IRWM region. The census tracts that have sizable populations of people with an MHI of $48,875 or less are located throughout the Bay Area and are generally areas in the North Bay where agricultural workers live; in the large cities of the region including San Francisco (West Bay), Oakland (East Bay), and San Jose (South Bay); and in medium or smaller cities with large minority populations including Vallejo (North Bay), Richmond and Concord (East Bay), and East Palo Alto (South/West Bay).

Serving the water needs of low-income DACs is a high priority for the Bay Area IRWM Region. The 2013 IRWMP update process targeted DACs for inclusion in the development of the IRWMP and identification of potential water resources management projects. The Bay Area Regional Climate Preparedness Program includes three projects that will have direct benefits to DACs. Two projects are in the City of East Palo Alto in the South/West Bay and one is in the City of Novato in the North Bay. The projects that will directly benefit DACs in the Bay Area IRWM Region are:

- Project 4 - East Palo Alto Groundwater Supply Project
- Project 6 - San Francisquito Creek Flood Protection and Ecosystem Restoration Project
- Project 9 - Novato Creek Flood Protection and Habitat Enhancement Project

The DACs within each of these project areas are described in further detail below.

[1] Department of Water Resources (DWR). 2015. Disadvantaged Communities Mapping Tool. Available: http://www.water.ca.gov/irwm/grants/resources_dac.cfm. Accessed July 2015.

[2] American Fact Finder. 2013. American Community Survey data for the 2009-2013 period. Available: http://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml.

City of East Palo Alto DAC

The Bay Area Regional Climate Change Preparedness Program specifically includes two projects that will benefit the City of East Palo Alto DAC located in southern San Mateo County. Five hundred thirty-eight (32.6%) out of 1,650 acres in East Palo Alto are a DAC (DWR. 2015). Eight out of 16 census tract block groups in East Palo Alto are DACs (Table 7-1). The MHIs of the identified DACs range from $30,303 to $46,917, with an average MHI of $39,623.

Table. 7-1. Disadvantaged Communities in East Palo Alto

DAC Block Group	2013 Median Household Income
060816119005	$42,455
060816120001	$34,091
060816121002	$30,303
060816120004	$42,484
060816121003	$46,917
060816121004	$31,140
060816121005	$43,158
060816119004	$46,434

Source: American Fact Finder 2013.

Critical Water Supply and Water Quality Needs of DACs within the Region

To meet DWR's DAC Program Preference requirements, projects must serve a DAC and meet a critical water supply or water quality need of the DAC. The primary water supply and water quality issues facing DACs in East Palo Alto are:

- a need for improved water supply reliability,
- a need for more affordable water,
- lack of a reliable supply of water in the event of droughts, fires, and other emergencies, and
- the threat of damage from flooding.

East Palo Alto has a single source of water—a supply allocation of 1.94 million gallons per day (MGD) that it obtains from the San Francisco Public Utilities Commission (SFPUC) regional water system (RWS), which is relied upon by 26 other agencies within the Bay Area. East Palo Alto's current demand meets or exceed its supply allocation, which means that it cannot approve any additional economic development. Furthermore, due to current drought conditions, the SFPUC RWS supply is constrained, and deliveries from this system could be reduced by as much as 20% during future dry years. Based on the projections in East Palo Alto's current Urban Water Management Plan (UWMP), the normal-year supply deficit will be 1,200 AFY by 2035; drought shortfalls will be even greater. East Palo Alto already has one of the lowest residential per-capita water uses in California (45 GPCD), which makes drought cutbacks very difficult to achieve without significantly impacting customers. Most, if not all, of East Palo Alto's residential homes have minimal landscape irrigation or other discretionary water usage.

East Palo Alto currently does not have any storage tanks or alternative supplies that can provide a source of treated water during emergencies or other supply disruptions, which makes the city and its customers extremely vulnerable. An incident occurred on March 3, 2015, when the SFPUC released untreated water to the RWS that East Palo Alto had no choice but to serve to its customers, including those in the DAC neighborhoods, due to lack of storage or alternate sources within the city's water system. In this instance, no public health issues were noted; however, a more catastrophic incident would result in a public health crisis.

Portions of East Palo Alto are chronically plagued by low system pressures (as low as 20 psi), such that during peak usage periods during the day and year residents cannot shower or otherwise use water in a manner consistent with the Human Right to Water tenets. Furthermore, chronic low pressures in the DAC neighborhoods leave those high-density portions of the city extremely vulnerable to fire or other emergency situations because water would be insufficient in quantity to fight a fire or otherwise respond to an emergency.

Flood protection is also a primary water-related need of the city. Many properties sit below sea level, with rooftops at or below the height of the existing creek levees. A catastrophic flood in this area would lead to several feet of inundation and would require water rescue to evacuate those left stranded, similar to what was required in New Orleans following Hurricane Katrina in 2005. While the geographic expanse of flooding would be less than in New Orleans, the threat to those affected would be similar.

Water-Related Benefits to DACs Provided by Proposed Projects

The Bay Area Regional Climate Change Preparedness Program includes two projects that will directly support critical water supply needs within East Palo Alto:

- Project 4 - East Palo Alto Groundwater Supply Project
- Project 6 - San Francisquito Creek Flood Protection and Ecosystem Restoration Project

The locations of these projects and the DAC benefit area are shown in **Figure 7-1**.

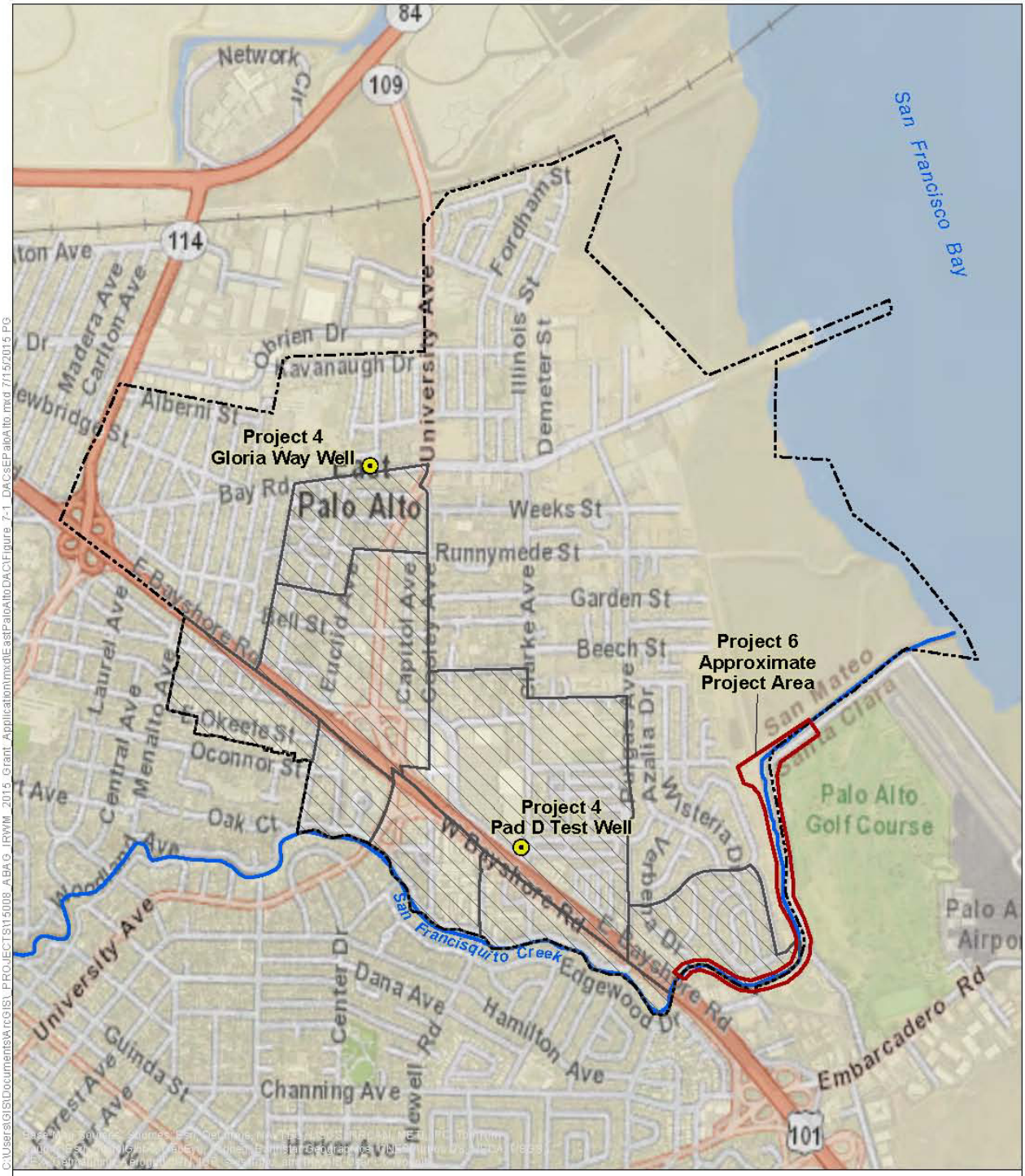

Figure 7-1
Project Locations and DACs in the City of East Palo Alto

N

0 0.125 0.25 0.5
Miles

East Palo Alto City Limits

Disadvantaged Communities by Census Block Group

Project 6 Approximate Project Area (DAC Benefit Area = 26.2%)

Project 4 Well Locations (DAC Benefit Area = 32.6%)

Horizon WATER and ENVIRONMENT

Project 4 - East Palo Alto Groundwater Supply Project

The East Palo Alto Groundwater Supply Project will increase supply reliability for the city's service area (city limits) during drought conditions. This project will provide clean, safe, affordable, and accessible water to East Palo Alto. Approximately 32.6% of the area served by this project will directly benefit water supply and fire flow pressure needs of DACs. Approximately 13,226 East Palo Alto residents live in DAC neighborhoods. These residents represent approximately 45% of the residents.

> This project will provide Critical Water Supply Needs to DACs related to *augmentation of inadequate water supply pressure in a public water supply system needed to prevent loss of system integrity and to maintain adequate fire protection flows* (DWR 2015 IRWM Grant Program Guidelines, page 85).
>
> With the addition of 2 operational groundwater wells, the City will ensure adequate pressure for fire protection flows in DACs.

The cost to produce highly treated groundwater as part of this project is estimated to be $400/AF, as compared to the current cost of $1,960/AF to purchase SFPUC water. As such, development of the groundwater resource will make East Palo Alto's water supplies more affordable for low-income residents. By lowering the cost of the potable water supply, this project will make it easier for low-income residents to afford water sufficient for consumption, cooking, and sanitary purposes. This project supports the State's Human Right to Water Policy.

By adding a supplemental source of water at key points in East Palo Alto's distribution system, this project will also increase system pressures and fire flows in DACs. This will ensure emergency response can adequately be provided to DACs. **Figure 7-2** illustrates the well locations in relation to the East Palo Alto DAC.

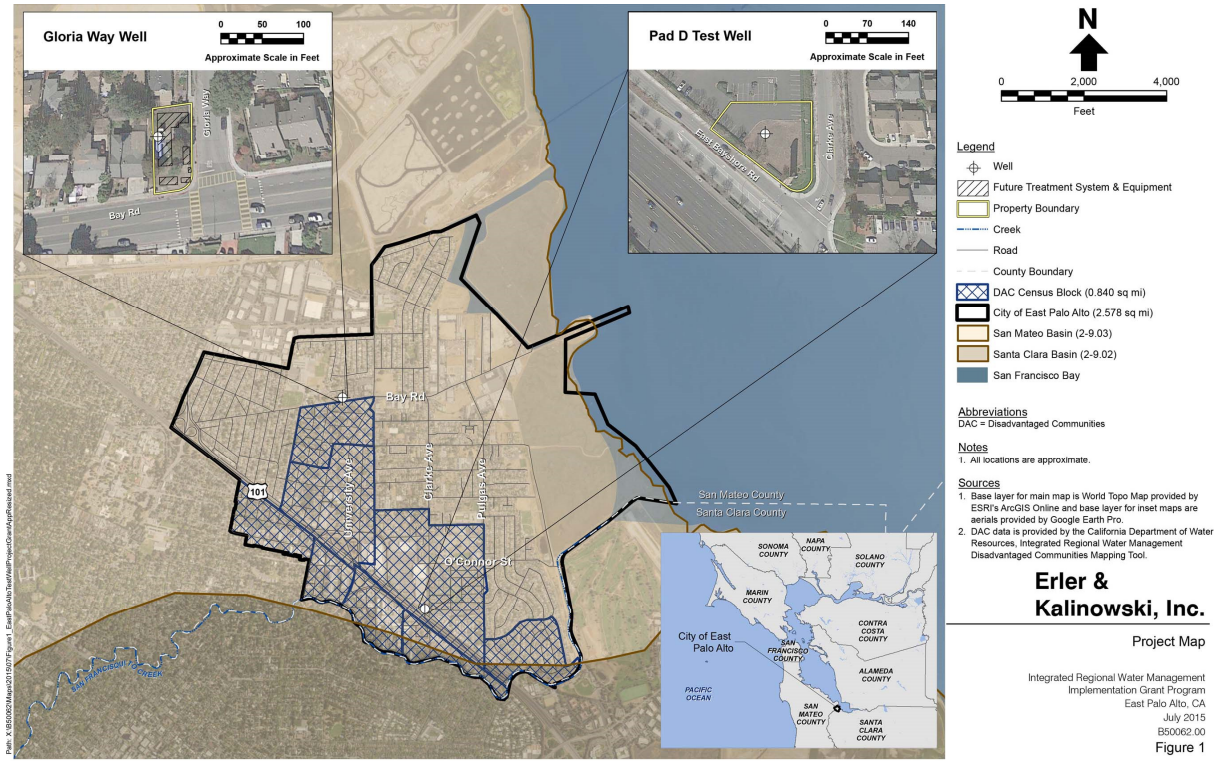

Figure 7-2: East Palo Alto Well Locations within DAC

Project 6 - San Francisquito Creek Flood Protection and Ecosystem Restoration Project

The San Francisquito Creek Flood Protection and Ecosystem Restoration Project will remove fluvial flooding risks from San Francisquito Creek for approximately 1,300 properties, 1,100 of which are primary residences in East Palo Alto, with 341 of these within the DAC. Of all of the areas within the fluvial floodplain of San Francisquito Creek, the DAC area of East Palo Alto to be protected by this project is at the highest risk of loss of human life resulting from overtopping or levee failure. **Figure 7-3** depicts the 100-year flood area with respect to the East Palo Alto DAC (darker shades of blue represent greater flood depth).

> This project will provide Critical Water Quality Needs to DACs related to *management of flood flows that threaten the habitability of dwellings* (DWR 2015 IRWM Grant Program Guidelines, page 85).
>
> After construction, this project will protect approximately 1,100 residences in DACs from flood damage.

The DAC of East Palo Alto experienced flooding as recently as December 2012, when floodwaters broke out of San Francisquito Creek and flowed into the DAC. This project will provide direct flood protection to the East Palo Alto DAC, which encompasses 26.2% of the project benefit area by geography. Once this project is completed, the East Palo Alto DAC will be protected from fluvial flooding up to the 100-year flood event, which has a 1% chance of occurring in any given year.

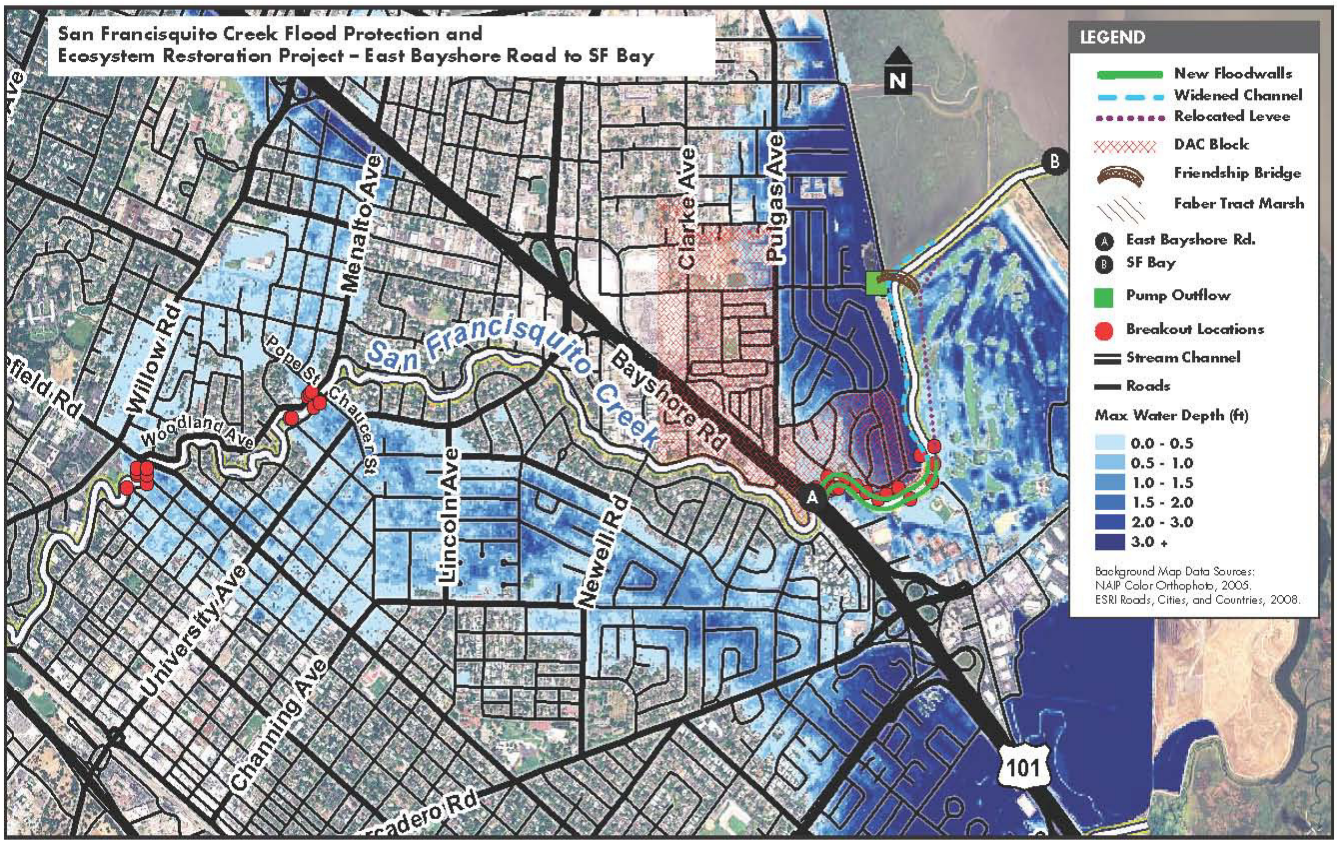

Figure 7-3: San Francisquito Creek Flood Area and East Palo Alto DAC

City of Novato DAC

The Bay Area Regional Climate Change Preparedness Program specifically includes one project that will benefit the City of Novato DAC located in northern Marin County, the Project 9 Novato Creek Flood Protection and Habitat Enhancement Project - Element B: Novato Creek Phase I Flood Reduction and Wetland Enhancement Project. Two out of 34 census tract block groups in Novato are DACs (Table 7-2). The MHIs of the identified DACs range from $26,868 to $36,552, with an average MHI of $31,710. The total 2013 population of Novato is 52,704 (American Fact Finder 2013[3]). The total DAC population in Novato is 3,048 (DWR 2015). While the majority of Novato does not qualify as a DAC, the area that will benefit from Project 9, Element B, contains large portions of the two DAC Block Groups.

Approximately 134 (24.7%) out of 542 acres of the project benefit area are a DAC. This estimate is an approximation of the project flood modeling effort described in Attachment 2, primary benefit response to Question 3 (also see Attachment 2: Project 9, Figure 3). The data used to generate the benefit area estimates can be provided upon request.

Table. 7-2. Disadvantaged Communities in Novato

DAC Block Group	2013 Median Household Income
60411022021	$26,868
60411032002	$36,552

Source: American Fact Finder 2013.

Critical Water Supply and Water Quality Needs of DACs within the Region

The primary water supply and water quality issues facing DACs in Novato is the threat of damage from flooding. Novato Creek is the principal drainage in the vicinity, and has an approximate total watershed area of 44 square miles (USACE 2003[4]). Railroad bridges downstream of Highway 101 and adjacent to Highway 37 constrict flow and reduce the actual discharge in the lower reaches. As a result, overtopping can occur in the upstream reaches of Novato Creek. Tidal influence can extend upstream of Highway 101 to the City of Novato. Under current conditions, Novato will continue to be at risk from flooding in residential and commercial areas along the creek. Without intervention, this flooding will worsen over time as the sea level rises due to storm surge and tidal propagation up-channel.

Project 9 - Novato Creek Flood Protection and Habitat Enhancement Project: Element B, Novato Creek Phase I Flood Reduction and Wetlands Enhancement of the Bay Area Regional Climate Change Preparedness Program will directly reduce the risk of flood flows that threaten the habitability of dwellings within Novato. The location of the Project 9, Element B project and the DAC benefit area are shown in **Figure 7-4**.

[3] American Fact Finder. 2013. American Community Survey data for the 2009-2013 period. Available: http://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml.

[4] U.S. Army Corps of Engineers (USACE) 2003. Bel Marin Keys Unit V Expansion of the Hamilton Wetland Restoration Project General Reevaluation Report. April.

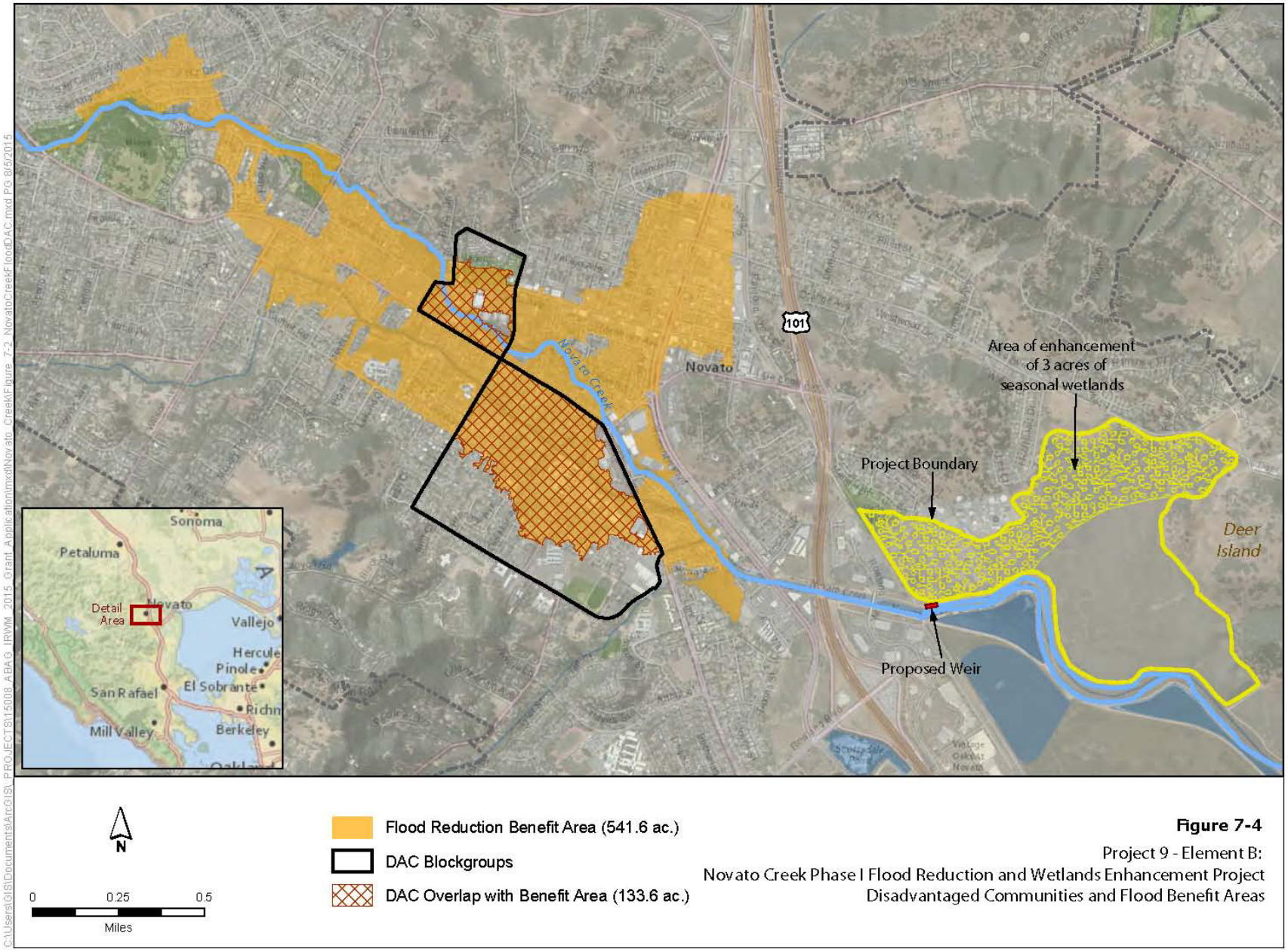

Figure 7-4

Project 9 - Element B:
Novato Creek Phase I Flood Reduction and Wetlands Enhancement Project
Disadvantaged Communities and Flood Benefit Areas

Water-Related Benefit to DACs Provided by Proposed Project

> This project will provide Critical Water Quality Needs to DACs related to *management of flood flows that threaten the habitability of dwellings* (DWR 2015 IRWM Grant Program Guidelines, page 85).
>
> After construction, this project will protect approximately 134 acres in DACs from flood damage.

The Novato Creek Flood Protection and Habitat Enhancement Project consists of two elements: Bel Marin Keys Wetlands Restoration Phase I (Element A) and Novato Creek Phase I Flood Reduction and Wetlands Enhancement (Element B). The lower Novato Creek watershed contains one of the largest remaining undeveloped areas of potential wetlands that can be enhanced as a natural approach to shoreline resiliency to reduce flood risks now and into the future. The Novato Creek Flood Protection and Habitat Enhancement Project (both elements) will result in a combined total of 870 acres of flood protection and 28 acres of seasonal wetland habitat in the Novato Creek watershed, restoring previously lost habitat and enhancing community safety in the area.

Currently, the residential and downtown commercial areas of Novato experience chronic flooding during relatively low-level storm events that coincide with high tides. Most recently in December 2014, storms caused flooding in residential areas of Novato. The two DAC block groups are located within the residential area that frequently floods. Figure 7-4 depicts the flood benefit area in Novato with respect to the Novato DACs, which encompasses approximately 25% of the project benefit area by geography (134 of 542 acres).

Project 9, Element B includes Phase I of the Novato Creek Flood Reduction and Wetlands Enhancement Project, which involves construction of a flood flow diversion structure to divert flood flows into the Deer Island basin during storm events in order to reduce flooding in downtown Novato. The County of Marin owns the Deer Island basin and as such, this is the most cost-effective location to divert flood waters where they can be beneficially used to create and enhance seasonal wetlands and habitat.

The flood flow diversion weir will be constructed in Novato Creek, downstream of the SMART train and Highway 101 bridges, and will help to reduce the flood risk to critical infrastructure and residential communities. The flood flow diversion structure will be approximately 50 to 100 feet long and will be operated to divert flood flows when they reach critical elevations to lessen and prevent flooding and protect life and property in Novato. The Element B weir and seasonal wetlands will be constructed and operational by the fall of 2019, and will then provide immediate flood protection to DACs in Novato.