Delta Annex Chapter 3 Reclamation District 3

3.1 Introduction

This chapter of the Delta Annex details the hazard mitigation planning elements specific to the Reclamation District 3 (RD 3), a new participating jurisdiction to the Sacramento County Local Hazard Mitigation Plan (LHMP) Update. This chapter of the Delta Annex is not intended to be a standalone document, but appends to and supplements the information contained in the Base Plan document. As such, all sections of the Base Plan, including the planning process and other procedural requirements apply to and were met by the RD 3. This chapter of the Delta Annex provides additional information specific to RD 3, with a focus on providing additional details on the planning process, risk assessment, and mitigation strategy for this District.

3.2 Planning Process

As described above, the District followed the planning process detailed in Section 3 of the Base Plan. In addition to providing representation on the Sacramento County Hazard Mitigation Planning Committee (HMPC), RD 3 formulated its own internal planning team to support the broader planning process requirements. Internal planning participants, their positions, and how they participated in the planning process are shown in Table 3-1. Additional details on plan participation and RD 3 representatives are included in Appendix A.

Table 3-1 RD 3 Planning Team

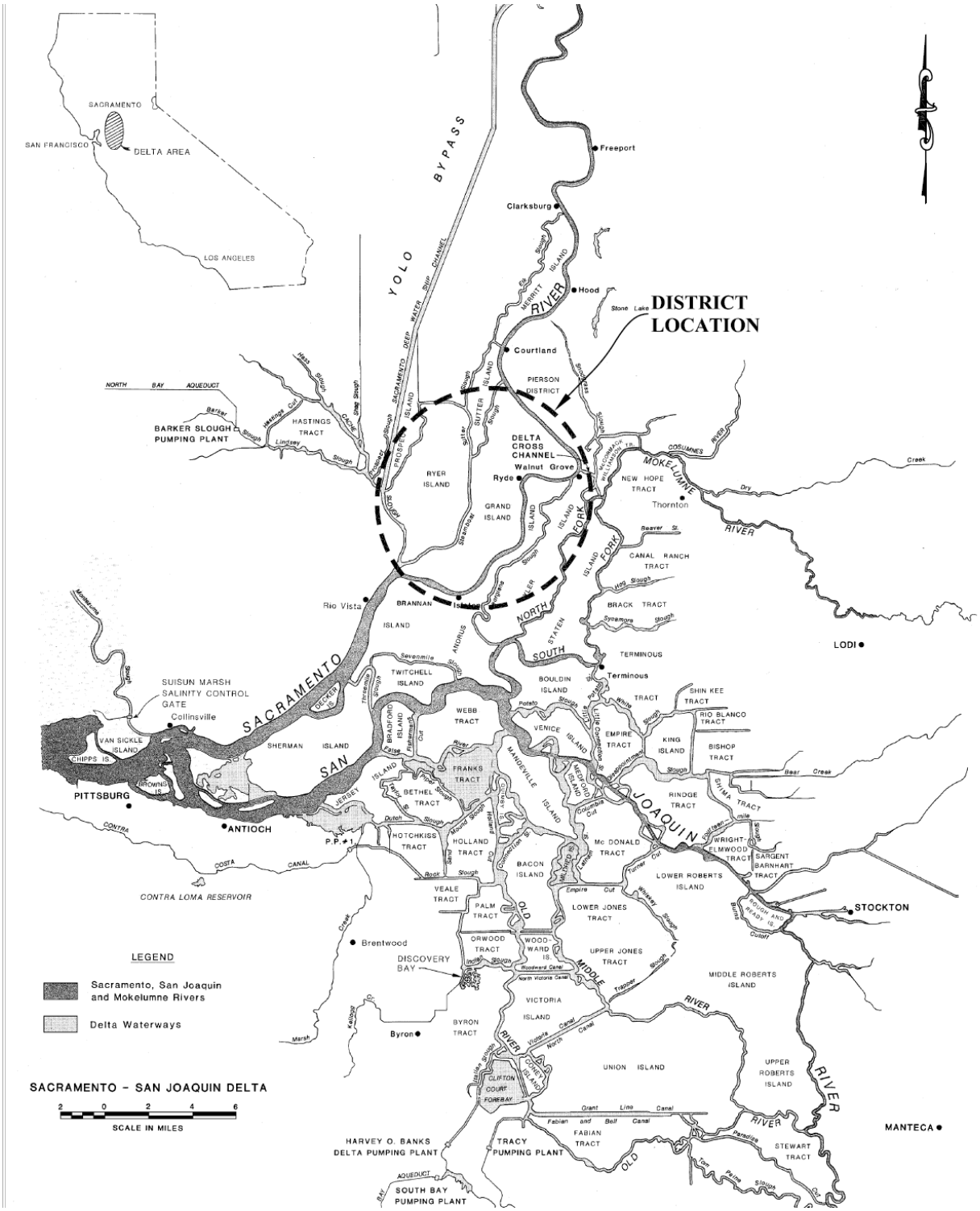
Name	Position/Title	How Participated
Gilbert Cosio	District Engineer	Attended meetings and workshops; reported to the District; compiled data for this annex; review draft documents
David Robinson	District Manager	Briefed in Sacramento County LHMP
Buddy Fonseca	President RD 3	Briefed in Sacramento County LHMP

Source: RD 3

3.3 Community Profile

The community profile for RD 3 is detailed in the following sections. Figure 3-1 displays a map and the location of RD 3 boundaries within Sacramento County.

Figure 3-1 Reclamation District 3 Map



3.3.1. RD 3 Overview, Background, and History

Reclamation District No. 3, Grand Island, is the local public entity that provides flood control and drainage services to the landowners of Grand Island. These functions are provided in the most economical and environmentally sound manner, with the greatest consideration of the areas rich agrarian culture and heritage.

As one of the first reclamation districts formed in 1861, Grand Island was given the number Reclamation District No. 3. The area protected by Reclamation District No. 3 has remained the same for essentially the entire time of its existence. As described in Division of Water Resources, (currently known as Department of Water Resources) Bulletin No. 37, which was published in 1930, the Reclamation District is described as protecting 17,100 gross acres, with a net protected area of 16,245 acres.

The Reclamation District No. 3 levees are part of the Federal Sacramento River Flood Control Project. This federally authorized project reconstructed the levees of Grand Island in the late 1950s. As part of a Federal project, the State of California is the local sponsor with Reclamation District No. 3 acting as the local maintaining agency. In order to verify that the District is maintaining its levees properly, the State inspects the levees two times a year (spring and fall) and Reclamation District No. 3 inspects its levees twice a year (summer and winter). The key inspection is the fall inspection performed by the State of California. This inspection, which occurs just prior to the flood season, is used by the Corps of Engineers to determine whether the levee is being properly maintained in order for Reclamation District No. 3 to qualify for Federal emergency funding through Public Law 84-99.

Reclamation District No. 3 provides flood protection in the form of levee maintenance and rehabilitation. The District also provides interior island flood protection and drainage. The District operates and maintains all the levees that protect the landowners of Grand Island. These 28.8 miles of levees border the Sacramento River and Steamboat Slough. The district also maintains 37.2 miles of ditches and canals, and 3 pumping plants to drain the properties of Grand Island. The protected area includes the communities of Walnut Grove and Ryde.

3.4 Hazard Identification

RD 3's planning team identified the hazards that affect the District and summarized their geographic extent, probability of future occurrences, potential magnitude/severity, and significance specific to RD 3 (see Table 3-2).

Table 3-2 RD 3—Hazard Identification

Hazard	Geographic Extent	Probability of Future Occurrences	Magnitude/ Severity	Significance
Agricultural Hazards	Extensive	Occasional	Limited	Low
Bird Strike				
Climate Change	Extensive	Occasional	Limited	Low
Dam Failure	Limited	Unlikely	Negligible	Low
Drought and Water Shortage	Extensive	Occasional	Critical	Low
Earthquake	Extensive	Occasional	Limited	Low
Earthquake: Liquefaction	Significant	Occasional	Limited	Low
Flood: 100/200/500-year	Extensive	Occasional	Catastrophic	High
Flood: Localized Stormwater Flooding	Significant	Likely	Critical	High
Landslides				
Levee Failure	Extensive	Occasional	Catastrophic	High
River/Stream/Creek Bank Erosion	Significant	Highly Likely	Catastrophic	High
Severe Weather: Extreme Temperatures – Cold/Freeze				
Severe Weather: Extreme Temperatures – Heat				
Severe Weather: Fog				
Severe Weather: Heavy Rains and Storms (Thunderstorms, Hail, and Lightning)	Significant	Likely	Critical	Medium
Severe Weather: Wind and Tornadoes				
Subsidence	Significant	Likely	Limited	Low
Volcano				
Wildfire:(Burn Area/Smoke)				

Geographic Extent
Limited: Less than 10% of planning area
Significant: 10-50% of planning area
Extensive: 50-100% of planning area

Probability of Future Occurrences
Highly Likely: Near 100% chance of occurrence in next year, or happens every year.
Likely: Between 10 and 100% chance of occurrence in next year, or has a recurrence interval of 10 years or less.
Occasional: Between 1 and 10% chance of occurrence in the next year, or has a recurrence interval of 11 to 100 years.
Unlikely: Less than 1% chance of occurrence in next 100 years, or has a recurrence interval of greater than every 100 years.

Magnitude/Severity
Catastrophic—More than 50 percent of property severely damaged; shutdown of facilities for more than 30 days; and/or multiple deaths
Critical—25-50 percent of property severely damaged; shutdown of facilities for at least two weeks; and/or injuries and/or illnesses result in permanent disability
Limited—10-25 percent of property severely damaged; shutdown of facilities for more than a week; and/or injuries/illnesses treatable do not result in permanent disability
Negligible—Less than 10 percent of property severely damaged, shutdown of facilities and services for less than 24 hours; and/or injuries/illnesses treatable with first aid

Significance
Low: minimal potential impact
Medium: moderate potential impact
High: widespread potential impact

3.5 Hazard Profile and Vulnerability Assessment

The intent of this section is to profile RD 3's hazards and assess the District's vulnerability separate from that of the Planning Area as a whole, which has already been assessed in Sections 4.2 and 4.3 Vulnerability Assessment in the main plan. The hazard profiles in the main plan discuss overall impacts to the Planning Area and describes the hazard problem description, hazard extent, magnitude/severity, previous occurrences of hazard events and the likelihood of future occurrences. Hazard profile information specific to RD 3 is included in this Annex. This vulnerability assessment analyzes the property, population, critical facilities, and other assets at risk to hazards ranked of medium or high significance specific to the District. For more information about how hazards affect the County as a whole, see Chapter 4 Risk Assessment in the main plan.

3.5.1. Hazard Profiles

Each hazard vulnerability assessment in Section 3.5.3, includes a description as to how the hazard affects the RD 3 and information on past occurrences. The intent of this section is to provide jurisdictional specific information on hazards and further describe how the hazards and risks differ across the Planning Area.

3.5.2. Vulnerability Assessment

This section identifies RD 3's assets at risk, including values at risk, critical facilities and infrastructure, economic assets, natural resources, historic and cultural resources, and growth and development trends.

Assets at Risk and Critical Facilities

This section considers the District's assets at risk, with a focus on key District assets such as critical facilities, infrastructure, and other District assets and their values. With respect to District assets, the majority of these assets are considered critical facilities as defined for this plan:

> *Any facility (a structure, infrastructure, equipment or service), that is adversely affected during a hazardous event may result in interruption of services and operations for the District at any time before, during and after the hazard event. A critical facility is classified by the following categories: (1) Essential Services Facilities, (2) At-risk Populations Facilities, and (3) Hazardous Materials Facilities.*

Table 3-3 lists critical facilities and other District assets identified by the RD 3's planning team as important to protect in the event of a disaster. RD 3's physical assets, valued at over $8 million, consist of the buildings and infrastructure to support the RD 3 operations. In addition, other assets protected by RD 3 have an estimated value of over $250,000,000.

Table 3-3 RD 3's Critical Facilities, Infrastructure, and Other District Assets

Name of Asset	Facility Type	Address	Replacement Value	Hazard Info
Pumping Plant – Sac. River	Drain Pump		$2,000,000	

Name of Asset	Facility Type	Address	Replacement Value	Hazard Info
Pump Plant – Steamboat Sl (old)	Pump Plant		$2,000,000	
Pump Plant –Steamboat Sl (new)	Pump Plant		$2,000,000	
District owned Facilities	Home, Buildings & Equipment		$2,000,000	

Source: RD 3

Natural Resources

In the past, RD 3 has protected a number of natural gas wells. Currently, there are no wells in operation on Grand Island. RD 3's levees support vegetation that provide fish and wildlife habitat. Agricultural ground and ditches also support wildlife.

Historic and Cultural Resources

Since the land has been settled for over 150 years, there are many historic structures on Grand Island. These include the Ryde Hotel, the Grand Island Mansion and the Beaver Union School.

Growth and Trends

Grand Island is within the Primary Zone of the Delta. Therefore, in addition to Sacramento County, development is controlled by a State agency, the Delta Protection Commission. Therefore, there is little, if any, potential for growth beyond that allowed by agricultural zoning.

3.5.3. Vulnerability to Specific Hazards

This section provides the vulnerability assessment, including any quantifiable loss estimates, for those hazards identified above in Table 3-2 as high or medium significance hazards. Impacts of past events and vulnerability of the RD 3 to specific hazards are further discussed below (see Section 4.1 Hazard Identification in the Base Plan for more detailed information about these hazards and their impacts on the Sacramento County Planning Area). Methodologies for calculating loss estimates are the similar to those described in Section 4.3 of the Base Plan and are based on data provided by the District as described further below. In general, the most vulnerable structures are those located within the floodplain or within levee inundation areas, older facilities that may be constructed with unreinforced masonry and buildings built prior to the introduction of modern building codes. Buildings that contain electronic or electrically operated equipment are also vulnerable to flood inundation.

In general, the most vulnerable District assets include the levees and supporting structures that the District owns. As stated, above, the RD 3 levees provide protection to over $250,000,000 in assets as estimate by the Delta Risk Management Strategy.

An estimate of the vulnerability of RD 3 to each identified priority hazard, in addition to the estimate of probability of future occurrence, is provided in each of the hazard-specific sections that follow. Vulnerability is measured in general, qualitative terms and is a summary of the potential impact based on

past occurrences, spatial extent, and damage and casualty potential. It is categorized into the following classifications:

- **Extremely Low—**The occurrence and potential cost of damage to life and property is very minimal to nonexistent.
- **Low—**Minimal potential impact. The occurrence and potential cost of damage to life and property is minimal.
- **Medium—**Moderate potential impact. This ranking carries a moderate threat level to the general population and/or built environment. Here the potential damage is more isolated and less costly than a more widespread disaster.
- **High—**Widespread potential impact. This ranking carries a high threat to the general population and/or built environment. The potential for damage is widespread. Hazards in this category may have occurred in the past.
- **Extremely High—**Very widespread with catastrophic impact.

Flood: 100/200/500 Year

Likelihood of Future Occurrence–Occasional
Vulnerability–Extremely High

Hazard Profile and Problem Description

Flooding on the Sacramento River has threatened the levees of RD 3 in the past. Flooding inside the leveed area would occur as a result of levee failure or overtopping. The flood elevations around Grand Island exceed the elevation of almost every acre of ground protected by RD 3 levees. Therefore, a levee breach under flood conditions would be catastrophic to the landowners. In addition, the Grand Island levees are not certified to protect against the 100-year flood.

Past Occurrences

Past river floods have damaged the RD 3 levees in the form of erosion. Some of this erosion was repaired by RD 3 under flood fight conditions. Restoration erosion repair has typically been performed by the Corps of Engineers as authorized under PL 84-99. Repair work under PL 84-99 was performed by the Corps of Engineers on Grand Island levees following the recent floods of 1986, 1997, 1998, and 2006. Erosion experienced in other years was repaired by RD 3.

Past floods have also required flood fighting by RD 3. This flooding fighting has consisted of seepage control and emergency erosion repair. Seepage control is critical in levee breach prevention. The levees and levee foundations of Grand Island are very porous and subject to flood water seeping through, and under, the levee. If left uncontrolled, this seepage could accelerate to the point that it has the force to move levee material. This phenomenon is called piping, or internal erosion of the levee. Once enough material is moved out of the levee section, a levee breach occurs.

Vulnerability to Flood

Assets/Critical Facilities at Risk

Flooding of Delta islands has the potential to negatively impact water quality both locally and statewide. The largest of California's drinking water sources is the Sacramento-San Joaquin Delta and its tributaries. The Delta provides water throughout the state via the State and Federal water projects. During a flood, there is a higher potential for the waters in the Delta to be exposed to chemicals, fuel, oil, and multiple other constituents of concern that can quickly degrade water quality. Flooding can also disturb soil and soil-borne materials such as mercury and organic matter that can degrade water quality. If the flood water rushing into a Grand Island levee breach is large enough in volume, the surge of water into the island will call saltwater to be pull from San Francisco Bay and into the Delta, thus impacting the water quality of the Delta and water users who export water out of the Delta.

Should a flood breach the levees, the entirety of the assets of RD 3 would be at risk. These assets include the small communities of Ryde and Walnut Grove. All of the RD 3 drain pumps would be flooded and therefore, RD 3 could not drain the flooded areas with their existing pumps; auxiliary pumps would have to be brought in.

Flood: Localized Stormwater Flooding

Likelihood of Future Occurrence–Likely
Vulnerability–High

Hazard Profile and Problem Description

During high rainfall events, the drainage system is not capable to evacuate water from the interior of Grand Island without flooding some low lying properties. On properties that farm annual row crops, this is not a problem since crops are not normally planted until after the rainy season. However, winter wheat, perennial, or multi-year crops are susceptible to damage when water overflows the banks of the drain canals.

Past Occurrences

Stormwater flooding occurs every few years. In most years, it is not significant enough to be a problem. For the most part, past flooding has damaged alfalfa and winter wheat. However, in 2006 overbank flooding came very near to flooding homes along Highway 220 in Ryde. In addition, many acres of vineyards and orchards have been planted in the past few years, so it is anticipated that these recently planted permanent crops may be damaged by future canal bank flooding.

Vulnerability to Flood

Assets/Critical Facilities at Risk

As stated above, stormwater flooding has the potential to result in significant damage due to the increased acreage of permanent crops. In addition, residences in the lower elevations of Walnut Grove and Ryde are at risk.

Levee Failure

Likelihood of Future Occurrence–Occasional
Vulnerability–High

Hazard Profile and Problem Description

Floods can threaten the District from several sources. Usually, the possibility of flooding can be anticipated from eight to twenty hours before the "Emergency Period" is reached. However, as demonstrated in Linda, California, in February 1986, it is possible for a levee to collapse with little or no warning when there are still four or more feet of freeboard available.

Generally, levees fail due to overtopping or collapse. A catastrophic levee failure resulting from collapse probably will occur very quickly with relatively little warning. Such a failure would occur where the levee is saturated and the high hydrostatic water pressure on the river side, and possibly coupled with erosion of the levee from high water flows or an inherent defect in the levee, causes an almost instant collapse of a portion of the levee. Under such circumstances, structures located relatively near the break will suffer immediate and extensive damage. Several hundred yards away from the break the energy of the flood waters will be dispersed sufficiently to reduce, but not eliminate, flooding damage to structures in its path. The flood water will flow in a relatively shallow path toward any low point in the affected area. Flood water will collect in these low areas and the levels will rise as the flow continues. When the rivers are high, it is not possible to close or repair a levee break until the water surface in the river and the flooded area equalize.

A major overtopping of a levee, if flow persists, will result in severe erosion of the levee crowns on the landward side and cause levee failure over a period of minutes to several hours. A severe levee overtopping can, therefore, be considered as a levee break for the purpose of determining the extent of flooding that any area will suffer. Generally, overtopping can be predicted based on river stages and the warning given depending on the source of the flood waters

Past Occurrences

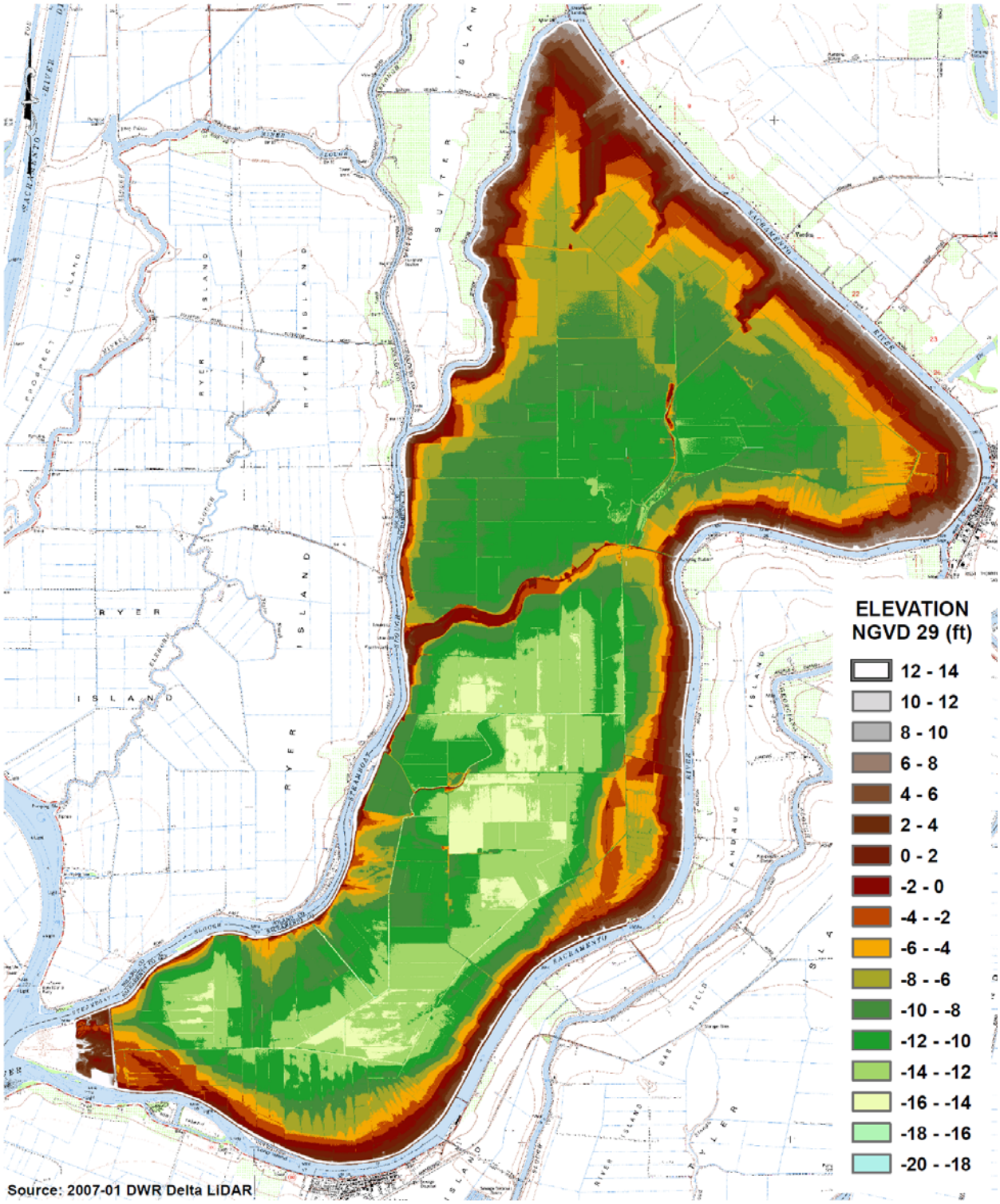
The RD 3 levees have not failed in over 100 years. Two floods over the past few decades (1986 & 1997) required extensive flood fighting by RD 3 forces in order to prevent a levee breach.

Vulnerability to Levee Failure

Assets/Critical Facilities at Risk

A levee failure would impact almost all the assets and critical facilities on Grand Island; including the small communities of Walnut Grove and Ryde. State Highways 160 and 220, as well as a number of county roads are at risk. Approximately 16,000 of agricultural land would be damaged and possibly rendered unfarmable for at least a year. There are many permanent crops on Grand Island, such as wine grapes, pears, apples and cherries that would be destroyed.

Figure 3-2 Elevation Map of Reclamation District 3



Source: Reclamation District 3

River/Stream/Creek Bank Erosion

Likelihood of Future Occurrence–Highly Likely
Vulnerability–High

Hazard Profile and Problem Description

Stream bank erosion is a natural process, but acceleration of this natural process leads to a disproportionate sediment supply, stream channel instability, land loss, habitat loss and other adverse effects. As farmers settled the valleys in the 1800's, the Gold Rush drew prospectors to the hills. As mining in the Sierra Nevada turned to the more "efficient" methods of hydraulic mining, the use of environmentally destructive high-pressure water jets washed entire mountainsides into local streams and rivers. As a result, the enormous amounts of silt deposited in the riverbeds of the Central Valley increased flood risk. As a remedy to these rising riverbeds, levees were built very close to the river channels to keep water velocity high and thereby scour away the sediment. However, the design of these narrow channels has been too successful. While the Gold Rush silt is long gone, the erosive force of the constrained river continues to eat away at the levee system and stream banks within the District.

Past Occurrences

RD 3 experiences bank erosion essentially every year there is above normal precipitation. As part of the Corps of Engineers Sacramento River Flood Control Project, RD 3 erosion has been periodically repaired by the Corps of Engineers under PL84-99. In years when the Corps does not perform repair, RD 3 repairs the erosion with financial assistance from the state's Delta Levees Subventions Program. Since RD 3 has been recently deemed ineligible for PL84-99 assistance, the likelihood is that the Corps will not perform erosion repairs in the future.

Vulnerability to Erosion

Assets at Risk

Erosion by itself puts the levee and any structures on the levee at risk. These structures include irrigation and drainage systems, residential buildings, agricultural buildings, wildlife habitat, etc. If left unresolved, erosion would lead to a levee breach, imposing risk on all of the assets of Grand Island.

Severe Weather: Heavy Rain and Storms

Likelihood of Future Occurrence–Likely
Vulnerability–Medium

Hazard Profile and Problem Description

According to historical hazard data, severe weather is an annual occurrence in the District. Damage and disaster declarations related to severe weather have occurred and will continue to occur in the future.

Past Occurrences

Although water surface elevation is a major factor to levee seepage and overtopping, severe weather can cause significant damage, such as erosion, that puts the integrity of the Grand Island levee system at risk.

Vulnerability to Heavy Rain and Storms

Assets at Risk

Heavy rain and thunderstorms are the most frequent type of severe weather occurrence in the area. Wind and lightning often accompany these storms and have caused damage in the past. Problems associated with the primary effects of severe weather include erosion, flooding, pavement deterioration, washouts, landslide/mudslides, and downed trees. However, it is the secondary effects of heavy rain and storms that are of concern to RD 3. Heavy rains can cause flooding, levee failure, and stream bank erosion. Flooding, levee failure, and stream bank erosion can cost RD 3 millions in damages.

OTHER HAZARDS

Other hazards that affect RD 3 levees and the area they protect include earthquake and liquefaction. Although there has never been documented levee damage due to an earthquake, hypothetically damage can occur due to levee construction materials. The sands and gravels that comprise a large amount of the levee and its foundation are highly susceptible to liquefaction during an earthquake.

3.6 Capability Assessment

Capabilities are the programs and policies currently in use to reduce hazard impacts or that could be used to implement hazard mitigation activities. This capabilities assessment is divided into five sections: regulatory mitigation capabilities, administrative and technical mitigation capabilities, fiscal mitigation capabilities, mitigation education, outreach, and partnerships, and other mitigation efforts.

3.6.1. Regulatory Mitigation Capabilities

Table 3-4 lists regulatory mitigation capabilities, including planning and land management tools, typically used by local jurisdictions to implement hazard mitigation activities and indicates those that are in place in the RD 3.

Table 3-4 RD 3's Regulatory Mitigation Capabilities

Plans	Y/N Year	Does the plan/program address hazards? Does the plan identify projects to include in the mitigation strategy? Can the plan be used to implement mitigation actions?
Comprehensive/Master Plan	Y/2011	Five-year plan consisting of levee stability, seepage control and maintenance projects.
Capital Improvements Plan	N	
Economic Development Plan	N	

Local Emergency Operations Plan	Y/2017	Through a state grant, Sacramento County is funding development of an Emergency Action Plan for RD 3. The plan will be complete in early 2017
Continuity of Operations Plan	N	
Transportation Plan	N	
Stormwater Management Plan/Program	Y/Ongoing	RD 3 is evaluating flooding of low areas and the need for improvements in it drainage system
Engineering Studies for Streams	N	
Community Wildfire Protection Plan	N	
Other special plans (e.g., brownfields redevelopment, disaster recovery, coastal zone management, climate change adaptation)	Y	Annual routine maintenance plans and participation in the state Delta Levees Subventions Program which assists in funding levee maintenance. RD 3 is also drafting a Letter of Intent to draft a System-Wide Improvement Framework to respond to maintenance and rehabilitation issues brought up by the Corps of Engineers 2103 Periodic Inspection Report
Building Code, Permitting, and Inspections	**Y/N**	**Are codes adequately enforced?**
Building Code	N	Version/Year:
Building Code Effectiveness Grading Schedule (BCEGS) Score	N	Score:
Fire department ISO rating:	N	Rating:
Site plan review requirements	N	
Land Use Planning and Ordinances	**Y/N**	**Is the ordinance an effective measure for reducing hazard impacts?** **Is the ordinance adequately administered and enforced?**
Zoning ordinance	N	
Subdivision ordinance	N	
Floodplain ordinance	N	
Natural hazard specific ordinance (stormwater, steep slope, wildfire)	N	
Flood insurance rate maps	N	
Elevation Certificates	N	
Acquisition of land for open space and public recreation uses	N	
Erosion or sediment control program	Y	Erosion control measures on levee and canal slopes as necessary. Sediment removal from drainage system canals as necessary.
Other		
How can these capabilities be expanded and improved to reduce risk?		

Source: RD 3

3.6.2. Administrative/Technical Mitigation Capabilities

Table 3-5 identifies the department(s) responsible for activities related to mitigation and loss prevention for RD 3.

Table 3-5 RD 3's Administrative and Technical Mitigation Capabilities

Administration	Y/N	Describe capability Is coordination effective?
Planning Commission	N	
Mitigation Planning Committee	N	
Maintenance programs to reduce risk (e.g., tree trimming, clearing drainage systems)	Y	RD 3 annually performs over $500,000 in maintenance. In addition, it periodically constructs projects to repair deficiencies in the levee such as a $1.5 million seepage berm constructed in 2014.
Mutual aid agreements	N	
Other		
Staff	**Y/N FT/PT**	**Is staffing adequate to enforce regulations? Is staff trained on hazards and mitigation? Is coordination between agencies and staff effective?**
Chief Building Official	N	
Floodplain Administrator	N	
Emergency Manager	Y	David Robinson - District Manager
Community Planner	N	
Civil Engineer	Y	Gilbert Cosio and the staff at MBK Engineers has served as District Engineer for over 35 years and has participated in many flood fight actions.
GIS Coordinator	N	
Other		
Technical		
Warning systems/services (Reverse 911, outdoor warning signals)	N	
Hazard data and information	N	
Grant writing	N	
Hazus analysis	N	
Other		
How can these capabilities be expanded and improved to reduce risk?		

Source: RD 3

3.6.3. Fiscal Mitigation Capabilities

Table 3-6 identifies financial tools or resources that the RD 3 could potentially use to help fund mitigation activities.

Table 3-6 RD 3's Fiscal Mitigation Capabilities

Funding Resource	Access/ Eligibility (Y/N)	Has the funding resource been used in past and for what type of activities? Could the resource be used to fund future mitigation actions?
Capital improvements project funding	Y	RD 3's annual assessment includes funding for future anticipated capital projects
Authority to levy taxes for specific purposes	Y	Yes, RD 3 modified its benefit assessment roll in 1996 and it provides authority and flexibility
Fees for water, sewer, gas, or electric services	N	
Impact fees for new development	N	
Storm water utility fee	N	
Incur debt through general obligation bonds and/or special tax bonds	Y	RD 3 has the ability to levy special assessments
Incur debt through private activities	N	
Community Development Block Grant	Y	
Other federal funding programs		
State funding programs		
Other		
How can these capabilities be expanded and improved to reduce risk?		

Source: RD 3

3.6.4. Mitigation Education, Outreach, and Partnerships

Table 3-7 identifies education and outreach programs and methods already in place that could be/or are used to implement mitigation activities and communicate hazard-related information.

Table 3-7 RD 3's Mitigation Education, Outreach, and Partnerships

Program/Organization	Yes/No	Describe program/organization and how relates to disaster resilience and mitigation. Could the program/organization help implement future mitigation activities?
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	N	

Program/Organization	Yes/No	Describe program/organization and how relates to disaster resilience and mitigation. Could the program/organization help implement future mitigation activities?
Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	Y	RD 3 maintains a web page with appropriate information to educate the public
Natural disaster or safety related school programs	N	
StormReady certification	Y	The RD 3 manager, trustees, and District Engineer have been, or soon will be, trained in SEMS and NIMS
Firewise Communities certification	N	
Public-private partnership initiatives addressing disaster-related issues	N	
Other		
How can these capabilities be expanded and improved to reduce risk?		

3.6.5. Other Mitigation Efforts

As stated previously, RD 3 modified its benefit assessment roll in 1996, adding a tremendous amount of flexibility, while still complying with Proposition 218 legal requirements. In addition, RD 3 has been a very active participant in the state's Delta Levee Subventions Program for about 20 years. These 2 factors have proven useful and have enabled RD 3 to react financially if a non-routine cost arises.

3.7 Mitigation Strategy

3.7.1. Mitigation Goals and Objectives

RD 3 adopts the hazard mitigation goals and objectives developed by the HMPC and described in Chapter 5 Mitigation Strategy.

3.7.2. Mitigation Actions

The planning team for RD 3 identified and prioritized the following mitigation actions based on the risk assessment. Background information and information on how each action will be implemented and administered, such as ideas for implementation, responsible office, potential funding, estimated cost, and timeline are also included.

Action 1. Levee Improvements

Hazards Addressed: EQ, EQ Liquefaction, Flood: 100/200/500-year, Flood: Localized Stormwater Flooding, Levee Failure, River/Stream/Creek Bank Erosion, Severe Weather: Heavy Rains and Storms (Thunderstorms/Hail, Lightning), Severe Weather (Wind and Tornadoes)

Goals Addressed: 1, 3

Issue/Background: The goal of this Mitigation Action is to improve the Grand Island levees over the next five years to a level of protection that repairs current deficiencies as noted in the state's Flood System Repair Project, and correct issues noted in the 2013 Corps of Engineers Periodic Inspection Report.

Other Alternatives: None proposed at this time

Existing Planning Mechanisms through which Action will be Implemented:

Responsible Office: Reclamation District No. 3 as the local maintaining agency and the State of California Flood Protection Board as the local sponsor of the federal flood control project.

Priority (H, M, L): High

Cost Estimate: $15 million

Potential Funding: Delta Levee Subventions Project currently funded by Propositions 1, 1E and 84. The state flood control deferred maintenance program (2016), the state Flood System Repair Program.

Benefits (avoided Losses): Preservation of the protection of nearly 17,000 acres. Most of this property is farmed and thus a contributing factor to the local, state and national economy. The assets on Grand Island have been estimated to exceed $250 million 10 years ago, and therefore are much larger today.

Schedule: 1 – 10 years depending on the availability of funds