

Delta Annex Chapter 10 Reclamation District 1002

10.1 Introduction

This chapter to the Delta Annex details the hazard mitigation planning elements specific to the Reclamation District 1002 (RD 1002), a new participating jurisdiction to the Sacramento County Local Hazard Mitigation Plan (LHMP) Update. This chapter to 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 1002. This chapter of the Delta Annex provides additional information specific to RD 1002, with a focus on providing additional details on the planning process, risk assessment, and mitigation strategy for this District.

10.2 Planning Process

As described above, the District followed the planning process detailed in Section 1002 of the base plan. In addition to providing representation on the Sacramento County Hazard Mitigation Planning Committee (HMPC), RD 1002 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 10-1. Additional details on plan participation and RD 1002 representatives are included in Appendix A.

Table 10-1 RD 1002 Planning Team

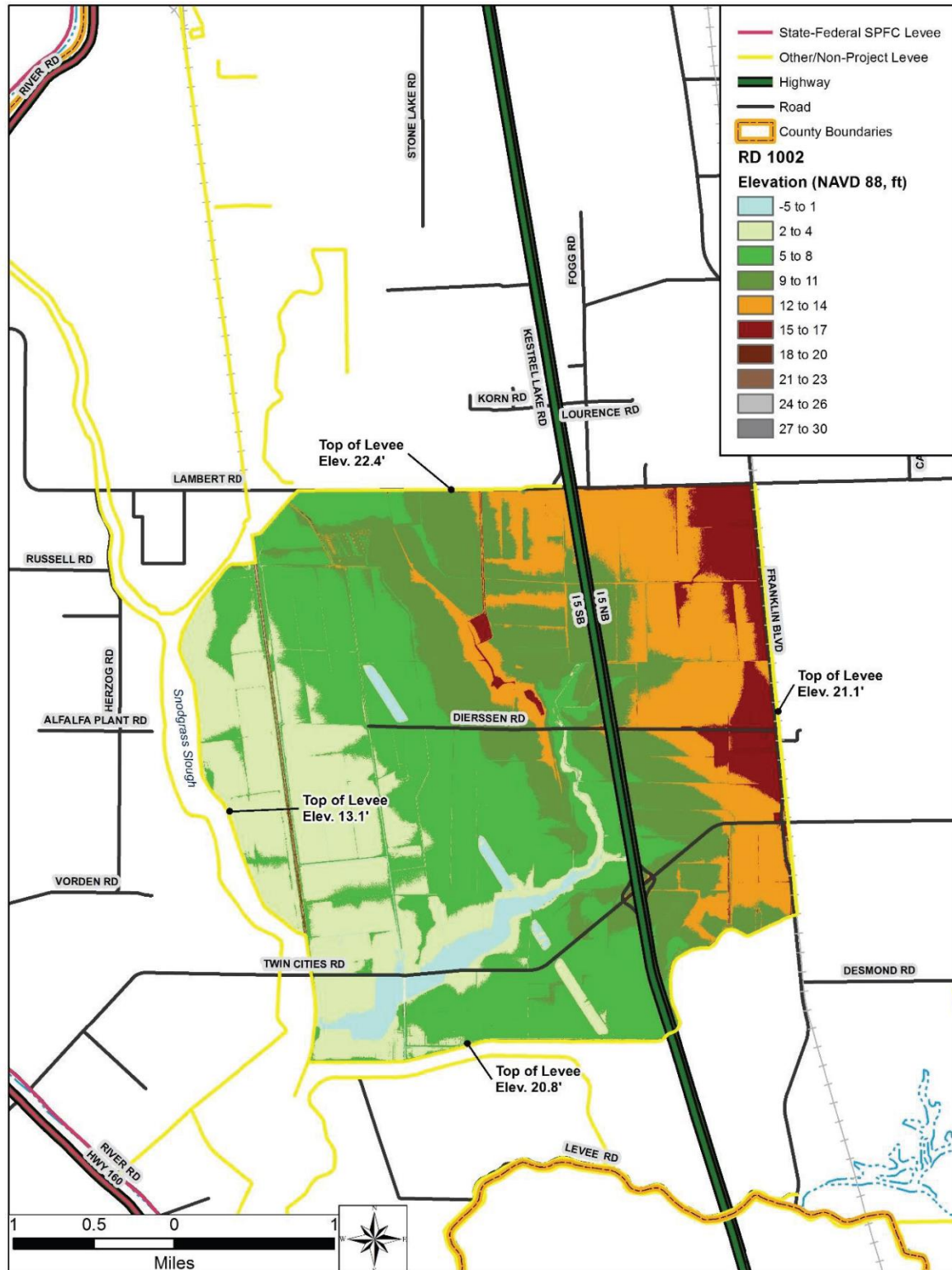
| Name | Position/Title | How Participated |
|------------------|-------------------|--|
| Emily Pappalardo | Project Manager | Attended meetings, collected data, drafted text, reviewed draft docs |
| Gilbert Labrie | District Engineer | Collected data, reviewed draft docs |

Source: RD 1002

10.3 Community Profile

The community profile for RD 1002 is detailed in the following sections. Figure 10-1 displays a map and the location of RD 1002 boundaries within Sacramento County.

Figure 10-1 Reclamation District 1002



10.3.1. RD 1002 Overview, Background, and History

Glanville Tract, Reclamation District 1002 (RD 1002 or District) was established in May 6, 1912 under water code Section 50000 et. seq. It has three trustees that are elected in 4-year, staggered terms. The Board of Trustees meets on an as needed basis. Glanville Tract is 6,829 acres and is surrounded by Snodgrass Slough on the south and west. Glanville Tract is located in Sacramento County in the Primary and Secondary Zone of the Delta. Approximately 13.4 miles of levees surround RD 1002 and are non-project levees.

As described in the Glanville Tract Flood Emergency Safety Plan, Reclamation District 1002 is responsible for maintenance, repair, and improvements of its nearly than 13.4 miles of levees and drainage system providing flood protection. The District maintains canals and ditches that provide drainage to the property owners. The levees protect the District, which is predominantly agricultural land, from flooding. Alfalfa, grain, orchards, tomatoes, potatoes, vineyards are the primary crops grown on the island; there is also a significant amount of irrigated pasture for cattle and goats.

There are 15 households on the Tract with a changing population of no more than 59 people. The maintenance of the levee system is critical to the economy supported by acres of prime agricultural land. Interstate 5 runs through the middle of the Tract, Lambert Road on the north, Franklin Boulevard on the east, and Twin Cities Road on the south.

10.4 Hazard Identification

RD 1002'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 1002 (see Table 10-2).

Table 10-2 RD 1002—Hazard Identification

| Hazard | Geographic Extent | Probability of Future Occurrences | Magnitude/Severity | Significance |
|---|-------------------|---|--------------------|--------------|
| Agricultural Hazards | Significant | Occasional | Critical | Low |
| Bird Strike | Limited | Unlikely | Negligible | Low |
| Climate Change | Limited | Occasional | Negligible | Low |
| Dam Failure | Extensive | Unlikely | Catastrophic | Medium |
| Drought and Water Shortage | Significant | Likely | Critical | Medium |
| Earthquake | Limited | Occasional | Limited | Low |
| Earthquake: Liquefaction | Significant | Occasional | Limited | Low |
| Flood: 100/200/500-year | Extensive | Occasional | Catastrophic | High |
| Flood: Localized Stormwater Flooding | Significant | Highly Likely | Medium | High |
| Landslides | Limited | Unlikely | Limited | Low |
| Levee Failure | Limited | Occasional | Critical | High |
| River/Stream/Creek Bank Erosion | Limited | Highly Likely | Limited | Medium |
| Severe Weather: Extreme Temperatures – Cold/Freeze | Extensive | Likely | Limited | Low |
| Severe Weather: Extreme Temperatures – Heat | Extensive | Highly Likely | Limited | Low |
| Severe Weather: Fog | Extensive | Highly Likely | Limited | Low |
| Severe Weather: Heavy Rains and Storms (Thunderstorms, Hail, and Lightning) | Extensive | Highly Likely | Critical | Medium |
| Severe Weather: Wind and Tornadoes | Extensive | Highly Likely | Limited | Medium |
| Subsidence | Limited | Occasional | Negligible | Low |
| Volcano | Limited | Unlikely | Negligible | Low |
| Wildfire:(Burn Area/Smoke) | Limited | Likely | Limited | Medium |
| Geographic Extent Limited: Less than 10% of planning area Significant: 10-50% of planning area Extensive: 50-100% of planning area | | Magnitude/Severity Catastrophic —More than 50 percent of property severely damaged; shutdown of facilities for more than 10020 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 | | |
| 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. | | Significance Low: minimal potential impact Medium: moderate potential impact High: widespread potential impact | | |

10.5 Hazard Profile and Vulnerability Assessment

The intent of this section is to profile RD 1002’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 1002 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.

10.5.1. Hazard Profiles

Each hazard vulnerability assessment in Section 10.5, includes a description as to how the hazard affects the RD 1002 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.

10.5.2. Vulnerability Assessment

This section identifies RD 1002’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 10-3 lists critical facilities and other District assets identified by the RD 1002’s planning team as important to protect in the event of a disaster. RD 1002’s physical assets, valued at over \$120 million, consist of the buildings and infrastructure to support the RD 1002 operations.

Table 10-3 RD 1002’s Critical Facilities, Infrastructure, and Other District Assets

| Name of Asset | Facility Type | Address/ Coordinates | Replacement Value | Hazard Info |
|-----------------|----------------|-------------------------|----------------------|-------------|
| Levee | Infrastructure | n/a | \$115,000,000 | |
| Pumping Station | Infrastructure | 38° 16' 08.40" | \$5,000,000 | |

| Name of Asset | Facility Type | Address/ Coordinates | Replacement Value | Hazard Info |
|---------------|---------------|-------------------------|----------------------|-------------|
| | | 121° 29' 05.24" | | |

Source: RD 1002

Natural Resources

There is a significant amount of riparian vegetation along Snodgrass Slough which is approximately 7 miles in length on the western and southern ends of Glanville Tract. There are also areas of freshwater marsh on the south east corner of the district.

Historic and Cultural Resources

There are several homes and structures that house the farmers and support agricultural activities on the island.

Growth and Development Trends

Due to zoning and floodplain restrictions, essentially no growth has occurred on the island in recent history. For this reason no growth is expected.

10.5.3. Vulnerability to Specific Hazards

This section provides the vulnerability assessment, including any quantifiable loss estimates, for those hazards identified above in Table 10-2 as high or medium significance hazards. Impacts of past events and vulnerability of the RD 1002 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 4.1002 of the base plan and are based on data provided by the District as described further below. In general, the most vulnerable District assets include the levees and supporting structures that the District owns. Of the 13.4 miles of levee that surrounds the district 7 miles of that system border Snodgrass Slough. The levee system is subject to riverine flooding and storm water run-off. The levee system could fail due to overtopping or seepage. A high water situation could increase the hydraulic gradient within the levee that could result in under or through seepage. Seepage, if left unchecked, can result in levee failure and subsequent flooding.

An estimate of the vulnerability of RD 1002 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.

Dam Failure

Likelihood of Future Occurrence—Unlikely

Vulnerability—Medium

Hazard Profile and Problem Description

While unlikely, it is possible that dam failure can create a high water situation in the adjacent channels that could put the levee system at risk of failure from overtopping, under seepage, through seepage or debris impact. Given the distance from the dam system, a dam surge could dissipate prior to reaching this point in the Delta and result in a minor change in water elevation.

Past Occurrences

There are no past occurrences of dam failure.

Vulnerability to Dam Failure

Assets/Critical Facilities at Risk

The levees and pumping station are at the highest risk to this hazard.

Natural Resources at Risk

Riparian habitats that border the channel can be lost due to erosive forces of high flows from dam failure.

Historic and Cultural Resources at Risk

Homes and agricultural facilities could be lost as a result of flooding due to dam failure.

Future Development

While future development may occur in the areas protected by levee, which could be compromised by an upstream dam failure, the District does not control this development. The District only can control whether the levees meet certification standards and the ongoing maintenance of these levees.

Drought and Water Shortage

Likelihood of Future Occurrence–Likely

Vulnerability–Medium

Hazard Profile and Problem Description

This hazard could disrupt crop irrigation. Prolonged disruption could result in the loss of a crop that year. In the event that orchards or vineyards experience disruption in irrigation, they could be lost for multiple years until they are replanted and begin producing a crop between 3 to 5 years. Agriculture is the primary industry on the island. Agricultural users pay assessments for levee maintenance and improvements. If agriculture is lost the District will not be able to cover levee maintenance or make any necessary improvements.

Past Occurrences

Although California did recently experience an extended drought, agriculture in this District remained largely unaffected due to senior water rights and riparian water rights. Some farmers voluntarily cut water use by 25% in the Delta in response to the drought in the Summer of 2015.

Vulnerability to Drought and Water Shortage

Assets/Critical Facilities at Risk

None.

Natural Resources at Risk

None.

Historic and Cultural Resources at Risk

None.

Future Development

While future development may occur in the areas protected by levee, the District does not control this development. The District only can control whether the levees meet certification standards and the ongoing maintenance of these levees.

Flood: 100/200/500-year

Likelihood of Future Occurrence—Occasional

Vulnerability—High

Hazard Profile and Problem Description

A 100/200/500-year flood event could cause flooding within the District. A high water event, depending on the water elevation, could cause failure due to overtopping and/or could increase hydraulic gradients within the levee section resulting in landside seepage or boils. Continued seepage, if left unaddressed, could erode the levee and result in failure. Heavy flows could also cause erosion and scour on the waterside bank that could undermine the levee and cause failure.

Past Occurrences

The District has had to implement the use of sandbags in high water years. The District experienced flooding in 1986 and 1997 due to events that were closest to a 100-year flood event.

Vulnerability to Flood: 100/200/500-year

Assets/Critical Facilities at Risk

The levee system is very vulnerable to a 100/200/500-year flood. Riverine floods and storm water run off lows could exceed the capacity of the levee system. The flood could also overtax the District's flooding system that could cause even further flooding.

Natural Resources at Risk

Riparian habitats that border the channel can be lost due to erosive forces of high flows from 100/200/500-year flows.

Historic and Cultural Resources at Risk

Homes and agricultural facilities could be lost as a result of flooding due to a 100/200/500 year flood event.

Future Development

While future development may occur in the areas protected by levee, the District does not control this development. The District only can control whether the levees meet certification standards and the ongoing maintenance of these levees.

Flood: Localized Stormwater Flooding

Likelihood of Future Occurrence–Highly Likely

Vulnerability–High

Hazard Profile and Problem Description

Localized stormwater flooding can occur during heavy rains or seepage events that exceed the District’s drainage capabilities. Lower areas around the island may be subject to flooding.

Past Occurrences

Some form of localized stormwater flooding occurs during most heavy rains. The most likely time this could have occurred in the past was during the wet years of 2011, 2006, 1997 and 1986. The District must address storm water runoff with sandbags to provide ample freeboard.

Vulnerability to Flood: Localized Stormwater Flooding

Assets/Critical Facilities at Risk

Localized flooding can overtax the Districts drainage and levee system and create for a more hazardous situation involving the levee system by limiting the ability for inspection.

Natural Resources at Risk

None.

Historic and Cultural Resources at Risk

Homes and agricultural facilities and crops could be damaged as a result of localized flooding.

Future Development

While future development may occur in the areas protected by levee, the District does not control this development. The District only can control whether the levees meet certification standards and the ongoing maintenance of these levees.

Levee Failure

Likelihood of Future Occurrence–Occasional

Vulnerability–High

Hazard Profile and Problem Description

Levee failure could result in inundation of the District.

Past Occurrences

1986, through an intentional levee break.

Vulnerability to Levee Failure

For RD 1002 the problematic areas are near the south-western end of the district near the packing house where boils have occurred in the past. Also the eastern levee near the Cosumnes River Preserve was intentionally broken in 1986 and has been problematic since.

Assets/Critical Facilities at Risk

Levees are the most at risk of this hazard. An island inundation can create an open water situation where a large fetch could develop and erode the interior of other levees within the District. The pumping station if inundated can also be damaged from a levee break.

Natural Resources at Risk

Waterside habitat that is adjacent to the break could be lost due to the erosive forces of the water flowing through the break.

Historic and Cultural Resources at Risk

Homes and agricultural facilities could be lost as a result of flooding due to a levee failure.

Future Development

While future development may occur in the areas protected by levee, the District does not control this development. The District only can control whether the levees meet certification standards and the ongoing maintenance of these levees.

River/Stream/Creek Bank Erosion

Likelihood of Future Occurrence–Highly Likely

Vulnerability–Medium

Hazard Profile and Problem Description

River/Stream/Creek bank erosion could destabilize the levee slope and, if left unaddressed, cause levee failure through undercutting.

Past Occurrences

Bank erosion is currently occurring on the District levees and must be remedied.

Vulnerability to Erosion

Assets/Critical Facilities at Risk

The District's levees are at risk of erosion.

Natural Resources at Risk

Riparian benches exist along the District's levee and are at risk of being lost due to bank erosion.

Historic and Cultural Resources at Risk

None.

Future Development

While future development may occur in the areas protected by levees, which can be compromised from severe erosion, the District does not control this development. The District only can control whether the levees meet certification standards and the ongoing maintenance of these levees.

Severe Weather: Heavy Rains and Storms (Thunderstorms, Hail, Lightning)

Likelihood of Future Occurrence—Highly Likely

Vulnerability—Medium

Hazard Profile and Problem Description

Heavy rains and storms can result in higher flood flows that could increase the hydraulic gradients within the levee section and result in seepage or if great enough, possibly overtopping. They can also increase flows and result in erosion of the waterside bank.

Past Occurrences

The last heavy rain and storm event the District experienced was in 2006, 1997 and 1986. No significant damages occurred due to these high water events.

Vulnerability to Heavy Rain and Storms

Assets/Critical Facilities at Risk

The District levees and pumping plant are at risk of damage from heavy rains and storms.

Natural Resources at Risk

Riparian benches could be lost from high flows as a result of heavy rains and large storms.

Historic and Cultural Resources at Risk

None.

Future Development

While future development may occur in the areas protected by levee, which can be compromised by severe weather events, the District does not control this development. The District only can control whether the levees meet certification standards and the ongoing maintenance of these levees.

Wildfire

Likelihood of Future Occurrence–Likely

Vulnerability–Medium

Hazard Profile and Problem Description

A wildfire could destroy private property and other such structures on the island as well as the pumping plant.

Past Occurrences

None.

Vulnerability to Wildfire

Assets/Critical Facilities at Risk

The vegetation on the District levees could be burned leaving bare soil that could be subject to erosion.

Natural Resources at Risk

Riparian, shrub scrub and freshwater marsh vegetation could be lost in a wildfire.

Historic and Cultural Resources at Risk

Homes, agricultural facilities and crops could be lost as a result of flooding due to wildfire.

Future Development

While future development may occur in the areas protected by levee, the District does not control this development. The District only can control whether the levees meet certification standards and the ongoing maintenance of these levees.

10.6 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.

10.6.1. Regulatory Mitigation Capabilities

Table 10-4 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 1002.

Table 10-4 RD 1002'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 | N | |
| Capital Improvements Plan | N | |
| Economic Development Plan | N | |
| Local Emergency Operations Plan | In development | While this plan is being developed, there is unofficial protocol of those that live on the island have used over time to respond to flooding related hazards. |
| Continuity of Operations Plan | N | |
| Transportation Plan | N | |
| Stormwater Management Plan/Program | N | |
| 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) | N | |
| Building Code, Permitting, and Inspections | Y/N | Are codes adequately enforced? |
| Building Code | Y | Version/Year: CBC 2013 |
| 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 | Y | Yes, the District is mostly zoned agriculture which limits development |
| Subdivision ordinance | N | |
| Floodplain ordinance | Y | Yes, Sacramento County Floodplain Ordinance restricts development in the floodplain |
| Natural hazard specific ordinance (stormwater, steep slope, wildfire) | N | |
| Flood insurance rate maps | Y | Zone AE |
| Elevation Certificates | N | |
| Acquisition of land for open space and public recreation uses | N | |
| Erosion or sediment control program | N | |
| Other | N | |
| How can these capabilities be expanded and improved to reduce risk? | | |
| The District must develop a strategy to resolve erosion issues. | | |

Source: RD 1002

10.6.2. Administrative/Technical Mitigation Capabilities

Table 10-5 identifies the department(s) responsible for activities related to mitigation and loss prevention for RD 1002.

Table 10-5 RD 1002'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) | N | Must develop vegetation management strategy |
| Mutual aid agreements | N | |
| Other | N | |
| 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 | Y | Determined via the Emergency Operations Plan (in development) |
| Emergency Manager | Y | Determined via the Emergency Operations Plan (in development) |

| | | |
|--|---|--|
| Community Planner | N | |
| Civil Engineer | Y | Staff is trained to coordinate with agencies and perform tasks in an emergency situation |
| GIS Coordinator | N | |
| Other | N | |
| Technical | | |
| Warning systems/services (Reverse 911, outdoor warning signals) | Y | Reverse 911, phone tree |
| Hazard data and information | N | |
| Grant writing | N | |
| Hazus analysis | N | |
| Other | N | |
| How can these capabilities be expanded and improved to reduce risk? | | |
| The District must develop a better warning system to alert residents. | | |

Source: RD 1002

10.6.3. Fiscal Mitigation Capabilities

Table 10-6 identifies financial tools or resources that the RD 1002 could potentially use to help fund mitigation activities.

Table 10-6 RD 1002'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 | N | |
| Authority to levy taxes for specific purposes | Y | Proposition 218 provides the District with the ability to raise assessments through a vote |
| Fees for water, sewer, gas, or electric services | N | |
| Impact fees for new development | N | |
| Storm water utility fee | Y | Assessments for drainage |
| Incur debt through general obligation bonds and/or special tax bonds | | |
| Incur debt through private activities | Y | Bonds can be obtained from the Bank of Rio Vista |
| Community Development Block Grant | N | |
| Other federal funding programs | N | |
| State funding programs | N | |
| Other | N | |
| How can these capabilities be expanded and improved to reduce risk? | | |

| 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? |
|--|---------------------------------|--|
| The District could apply to become a part of the Delta Levees Subventions Program to aide in funding levee improvement projects. | | |

Source: RD 1002

10.6.4. Mitigation Education, Outreach, and Partnerships

Table 10-7 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 10-7 RD 1002'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 | |
| Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education) | N | |
| Natural disaster or safety related school programs | N | |
| StormReady certification | N | |
| Firewise Communities certification | N | |
| Public-private partnership initiatives addressing disaster-related issues | N | |
| Other | N | |
| How can these capabilities be expanded and improved to reduce risk? | | |
| The District could develop a public outreach program it inform residents of disaster related issues. | | |

10.6.5. Other Mitigation Efforts

The District plans on removing dense vegetation along Snodgrass Slough to reveal areas with significant erosion. Once these areas are determined the District will develop a multi-year plan to address problematic areas.

10.7 Mitigation Strategy

10.7.1. Mitigation Goals and Objectives

RD 1002 adopts the hazard mitigation goals and objectives developed by the HMPC and described in Chapter 5 Mitigation Strategy.

10.7.2. Mitigation Actions

The planning team for RD 1002 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. Geotechnical Investigation

Hazards Addressed: Levee Failure, Earthquake: Liquefaction, River Bank Erosion, Flood 100/200/500-year, Severe Weather: Heavy Rains, Severe Weather: Wind

Goals Addressed: 1, 2, 3

Issue/Background: The District has problematic areas in Snodgrass Slough that require a geotechnical investigation to determine the best steps to take to resolve.

Project Description: District will have CPT tests done and analyzed to determine soil stability in the effort to design the appropriate solution to resolve levee issues

Other Alternatives: None

Existing Planning Mechanism(s) through which Action Will Be Implemented: None

Responsible Office/Partners: Reclamation District Board of Trustees and District Engineer Gilbert Labrie

Project Priority: High

Cost Estimate: \$30,000

Benefits (Losses Avoided): Aides in providing information for projects that will reduce in flood risk from levee failure, bank erosion, 100/200/500-year flood and heavy rains.

Potential Funding: District assessments and Delta Levees Subventions Program

Timeline: Winter 2018

Action 2. Snodgrass Slough Levee Improvements

Hazards Addressed: Levee Failure, Earthquake: Liquefaction, River Bank Erosion, Flood 100/200/500-year, Severe Weather: Heavy Rains, Severe Weather: Wind

Goals Addressed: 1, 2, 3, 4

Issue/Background: Erosion areas have been hidden by dense vegetation and have not been addressed due to a lack of funding.

Project Description: Once erosion areas would be revealed the district can create designs to repair and maintain the levee system to meet Bulletin 192-82 standards. The levees will be graded to accommodate a 3:1 waterside and 2:1 landside slope.

Other Alternatives: None

Existing Planning Mechanism(s) through which Action Will Be Implemented: None

Responsible Office/Partners: Reclamation District Board of Trustees and District Engineer Gilbert Labrie

Project Priority: High

Cost Estimate: In planning stages, unknown.

Benefits (Losses Avoided): Aides in providing information for projects that will reduce in flood risk from levee failure, bank erosion, 100/200/500 year flood and heavy rains.

Potential Funding: District assessments and Delta Levees Subventions Program

Timeline: Summer 2020

Action 3. Snodgrass Slough Vegetation Management

Hazards Addressed: Levee Failure, Earthquake: Liquefaction, River Bank Erosion, Flood 100/200/500-year, Severe Weather: Heavy Rains, Severe Weather: Wind, Wildfire

Goals Addressed: 1, 2, 3

Issue/Background: Limited funding has resulted in deferred maintenance of the levees vegetation. The vegetation is so dense it covers any potential erosion areas on the levee system.

Project Description: Trim trees and remove dense vegetation in accordance with the Central Valley Flood Protection Plan

Other Alternatives: None

Existing Planning Mechanism(s) through which Action Will Be Implemented: None

Responsible Office/Partners: Reclamation District Board of Trustees and District Engineer Gilbert Labrie

Project Priority: High

Cost Estimate: \$200,000

Benefits (Losses Avoided): Aides in providing information for projects that will reduce in flood risk from levee failure, bank erosion, 100/200/500-year flood and heavy rains.

Potential Funding: District assessments and Delta Levees Subventions Program

Timeline: Fall 2017