Annex D Marysville Levee Commission

D.1 Introduction

This Annex details the hazard mitigation planning elements specific to the Marysville Levee Commission (MLC or District), a new participating jurisdiction to the 2021 Yuba County Local Hazard Mitigation Plan (LHMP) Update. ***Note***: MLC participated in the original 2007 Yuba County LHMP. Staff turnover in the past 14 years has reduced institutional memory of that 2007 Plan. Actions from the 2007 Plan and their statuses are below:

- Rip-rap along the left side of the Feather River from the 10th Street Bridge upstream 3/4 mile +/- to the elongation of 16th Street
  - ✓ This item is still pending.
- Rehabilitate top and side slopes and modify access points along the escape route levee from Walnut Ave to Hallwood Blvd
  - ✓ Levee top was graded and rerocked. Levee sides had tree and brush removal.
- Pave top of levees for emergency access and stability in times of levee inspections and high water emergency evaluations.
  - ✓ This is complete. All ring levee tops are paved.
- Re-establish the flood training site east of the Historic City Cemetery. Provide for the training of flood gate setup and takedown, boil fighting, sandbag filling and sandbag wall construction, etc. To be utilized by surrounding counties.
  - ✓ This item is still pending.
- Inspect all flood gates protecting the City. Reconstruct and/or rehabilitate gates as necessary to provide needed protection.
  - ✓ 2 levee gates removed due to roadway project. 5th street bridge and hwy. 70 @ cemeteries.
- Provide 50 year protection to the Historic City Cemetery. Provide gravity gates for flood water release and spillway to allow water to enter Cemetery area slowly.
  - ✓ This item is still pending.
- Review all levee penetrations and map the penetrations. Prepare an O&M Manual for the specific areas needing attention during rising flood waters (Pump sites and penetrations, sewer line closures, etc. Determine the need for the penetrations and abandon where necessary.
  - ✓ The O&M Manual will be updated after ring levee construction project.
- Repair 17th and Hall Street Outflow Structure to the Yuba River. Rip-rap or gunite the spillway at the Yuba river. Stabilize the outflow discharge pipe and protection device. Improve access to spillway and remove brush and trees around location.
  - ✓ Pumps and valving removed. Part of ring levee project.
- Study/Construct levee and pump station/gravity flow system and eastern edge of the UP Railroad Trestle, east of the Marysville City Cemetery, to provide for storage and limit flows to the Feather River in times of hydraulic stress downstream along the Feather River.
  - ✓ This item is still pending.
- Remove and replace rip-rap from Bizz Johnson Drive east to the UP railroad trestle along the right bank of the Yuba River. Clear any existing vegetation, install vegetation control mat prior to replacing rip-rap.
  - ✓ This project is still pending due to the levee project.

It can be assumed that the 2007 Plan was not incorporated into any MLC planning mechanisms. Development in the District since 2007 was described by MLC as minimal. Development is mostly infill projects in the City of Marysville. As such, it can be assumed that the vulnerability has not changed.

This 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 District. This Annex provides additional information specific to MLC, with a focus on providing additional details on the risk assessment and mitigation strategy for this District.

D.2 Planning Process

As described above, the District followed the planning process detailed in Chapter 3 of the Base Plan. In addition to providing representation on the Yuba County Hazard Mitigation Planning Committee (HMPC), the District formulated their 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 D-1. Additional details on plan participation and District representatives are included in Appendix A.

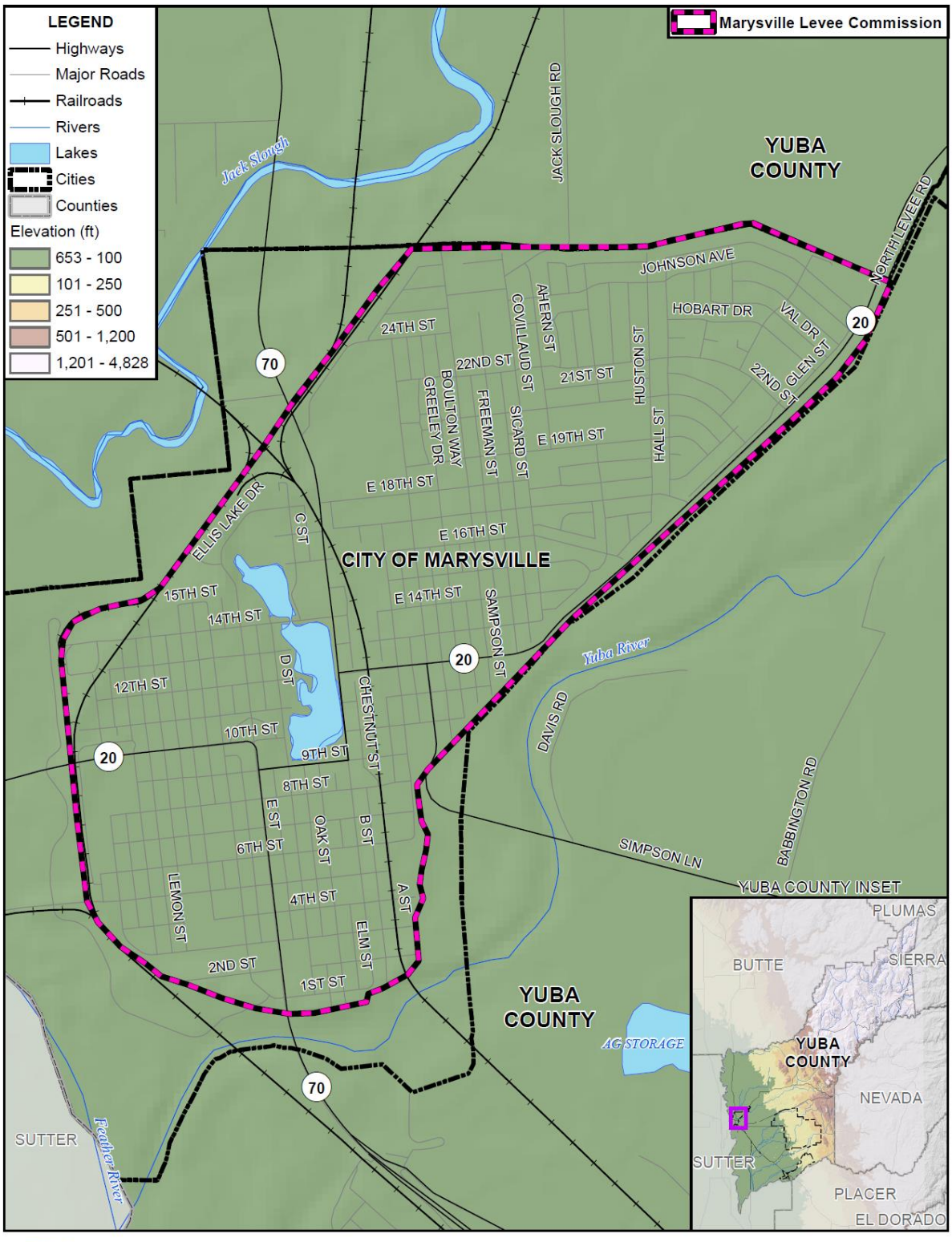
Table D-1 MLC – Planning Team

Name	Position/Title	How Participated
Pat Ajuria	Manager	Provided hazard ID table, assets, past occurrences, general document edits and District specifics, as well as mitigation action. Attended meetings.

D.3 District Profile

The District profile for the MLC is detailed in the following sections. Figure D-1 displays a map and the location of the District within Yuba County.

Figure D-1 MLC



D.3.1. Overview and Background

The Marysville Levee Commission has provided protection for the City of Marysville, known as the "Gate Way to the Gold Rush". Marysville and the MLC are located approximately 40 miles north of Sacramento, the California State Capital in California's Central Valley strategically located where State Highways 70 and 20 intersect. The Marysville Levee Commission District boundaries include:

- Unit 1- Jack Slough & Simmerly Slough South Bank from the Feather River to the Yuba River, consisting of 3.3 Miles
- Unit 2- Feather River East Bank from the Yuba River to Jack and Simmerly Slough, 1.3 Miles
- Unit 3- Yuba River North Bank from the Feather River to High Ground, 6.9 Miles

Located at the confluence of the Yuba and Feather Rivers, the MLC is responsible for maintaining the levees that protect the City of Marysville's residential population and influx of workers from both outside the City and County during workday hours. This includes the ring levee that surrounds the City of Marysville, constructed to prevent the flood waters and debris from flooding and damage that periodically flooded this historical community which was the hub of activity and business established to support gold mining in the region. Prior to the formation of the MLC, he township of Marysville was known to flood during winter rains and spring snow melts and for many the unusual weather and downstream effects of mining often turned the valley into an "inland sea". Unlike the native Indians of the region, Settlers in the Valley had little or no knowledge of the devastating seasonal floods until their homes and businesses were destroyed by flood waters.

The farmers above the City of Marysville built a seventeen-mile-long levee which flood waters broke through in 1855. The farmer that settled along the Yuba and Bear Rivers built levees, channels, and drains and opened closed drainage sloughs. The townspeople around Marysville and Yuba City knew the mines were creating heavy debris in the valley and the state, but their businesses profited from the miners and mine operations and were dependent on trade from the mines. The towns people refused to act against the mining operations and levees were constructed to protect lives and property in Marysville.

The second stage of hydraulic mining in the 1860's was responsible for serious damage to the valley from excessive debris which flowed downstream from the mountains and foothills. By 1868, the beds of the Yuba and Feather Rivers were higher than the streets of Marysville. The humble beginnings of the Marysville Levee Commission started with residents organized to form a public/private effort to build levees around the downtown area to protect the City from seasonal flooding.

D.4 Hazard Identification

MLC identified the hazards that affect the District and summarized their location, extent, frequency of occurrence, potential magnitude, and significance specific to District (see Table D-2).

Table D-2 MLC—Hazard Identification Assessment

Hazard	Geographic Extent	Likelihood of Future Occurrences	Magnitude/ Severity	Significance	Climate Change Influence
Climate Change	–	–	–	–	–
Dam Failure	–	–	–	–	Medium
Drought & Water Shortage	–	–	–	–	High
Earthquake	–	–	–	–	Low
Floods: 1%/0.5%/0.2% annual chance	Extensive	Unlikely	Critical	Medium	Medium
Floods: Localized Stormwater	–	–	–	–	Medium
Levee Failure	Extensive	Unlikely	Critical	High	Medium
Pandemic	–	–	–	–	Medium
Severe Weather: Extreme Cold and Freeze	–	–	–	–	Medium
Severe Weather: Extreme Heat	–	–	–	–	High
Severe Weather: Heavy Rains and Storms	–	–	–	–	Medium
Severe Weather: High Winds and Tornadoes	–	–	–	–	Low
Wildfire	–	–	–	–	High

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

Likelihood 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

Climate Change Influence
Low: minimal potential impact
Medium: moderate potential impact
High: widespread potential impact

D.5 Hazard Profile and Vulnerability Assessment

The intent of this section is to profile the District's hazards and assess the District's vulnerability separate from that of the Yuba County Planning Area as a whole, which has already been assessed in Section 4.3 Hazard Profiles and Vulnerability Assessment in the Base Plan. The hazard profiles in the Base Plan discuss overall impacts to the Yuba County Planning Area and describes the hazard problem description, hazard location and extent, magnitude/severity, previous occurrences of hazard events and the likelihood of future occurrences. Hazard profile information specific to the District is included in this Annex. This vulnerability assessment analyzes the property 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 Base Plan.

D.5.1. Hazard Profiles

Each hazard vulnerability assessment in Section D.5.3, includes a hazard profile/problem description as to how each medium or high significant hazard (as shown in Table D-2) affects the District and includes information on past hazard occurrences and the likelihood of future hazard occurrence. The intent of this section is to provide jurisdictional specific information on hazards and further describes how the hazards and risks differ across the Yuba County Planning Area.

D.5.2. Vulnerability Assessment and Assets at Risk

This section identifies the District's total assets at risk, including values at risk, populations at risk, critical facilities and infrastructure, natural resources, and historic and cultural resources. Growth and development trends are also presented for the District. This data is not hazard specific, but is representative of total assets at risk within the District.

Assets at Risk and Critical Facilities

This section considers the MLC'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. Critical facilities are defined for this Plan as:

> ***Critical Infrastructure describes the physical and cyber systems and assets that are so vital to the County of Yuba that their incapacity or destruction would have a debilitating impact on our physical or economic security or public health or safety. Critical infrastructure includes any location, facility, or infrastructure that are necessary to maintain normalcy in daily life, and that are essential for the delivery of vital services and for the protection of the community. Critical Facilities are further broken out into three Categories: 1) Essential Services Facilities, 2) Large Group and Vulnerable Populations Facilities, and 3) Infrastructure Facilities.***

Table D-3 lists critical facilities and other District assets identified by the District Planning Team as important to protect in the event of a disaster. MLC's physical assets, valued at over $660,000, consist of the buildings and infrastructure to support the District's operations.

Table D-3 MLC Critical Facilities, Infrastructure, and Other District Assets

Name of Asset	Facility Type	Replacement Value	Which Hazards Pose Risk
Levee Office Building	Office	$450,000	Flood, Levee Failure
District property	Vehicles, equipment, tools	$212,000	Flood, Levee Failure
Total		**$662,000**	

Source: MLC

Natural Resources

MLC has a variety of natural resources of value to the District. These natural resources parallels that of the City of Marysville. Information can be found in the City of Marysville Annex to this Plan Update.

Historic and Cultural Resources

MLC has a variety of historic and cultural resources of value to the District. These historic and cultural resources parallels that of the City of Marysville. Information can be found in the City of Marysville Annex to this Plan Update.

Populations Served

Also potentially at risk should the District be affected by natural hazard events are the populations served by the District. MLC provides services to the population of the City of Marysville

Growth and Development Trends

General growth in the District parallels that of the City of Marysville. Information can be found in the City of Marysville Annex to this Plan Update.

Future Development

The District has no control over future development in areas the District services. Future development in these areas parallels that of the City of Marysville. Information can be found in the City of Marysville Annex to this Plan Update.

D.5.3. Vulnerability to Specific Hazards

This section provides the vulnerability assessment, including any quantifiable loss estimates, for those hazards identified above in Table D-2 as high or medium significance hazards. Impacts of past events and vulnerability of the District 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

Yuba County Planning Area). Methodologies for evaluating vulnerabilities and calculating loss estimates are the same as those described in Section 4.3 of the Base Plan.

An estimate of the vulnerability of the District to each identified priority hazard, in addition to the estimate of likelihood 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.

Depending on the hazard and availability of data for analysis, this hazard specific vulnerability assessment also includes information on values at risk, critical facilities and infrastructure, populations at risk, and future development.

Power Outage/Power Failure

An impact of almost all hazards below relates to power outage and/or power failures. The US power grid crisscrosses the country, bringing electricity to homes, offices, factories, warehouses, farms, traffic lights and even campgrounds. According to statistics gathered by the Department of Energy, major blackouts are on the upswing. Incredibly, over the past two decades, blackouts impacting at least 50,000 customers have increased 124 percent. The electric power industry does not have a universal agreement for classifying disruptions. Nevertheless, it is important to recognize that different types of outages are possible so that plans may be made to handle them effectively. In addition to blackouts, brownouts can occur. A brownout is an intentional or unintentional drop in voltage in an electrical power supply system. Intentional brownouts are used for load reduction in an emergency. Electric power disruptions can be generally grouped into two categories: intentional and unintentional. More information on types of power disruptions can be found in Section 4.3.3 of the Base Plan. The District noted that this has not been a problem for the District.

Public Safety Power Shutoff (PSPS)

A new intentional disruption type of power outage/failure event has recently occurred in California. In recent years, several wildfires have started as a result of downed power lines or electrical equipment. This was the case for the Camp Fire in 2018. As a result, California's three largest energy companies (including PG&E), at the direction of the California Public Utilities Commission (CPUC), are coordinating to prepare all Californians for the threat of wildfires and power outages during times of extreme weather. To help

protect customers and communities during extreme weather events, electric power may be shut off for public safety in an effort to prevent a wildfire. This is called a PSPS. More information on PSPS criteria can be found in Section 4.3.3 of the Base Plan. The District noted minimal disruptions from PSPS.

Flood: 1%/0.2% Annual Chance

Likelihood of Future Occurrence–Occasional/Unlikely
Vulnerability–High

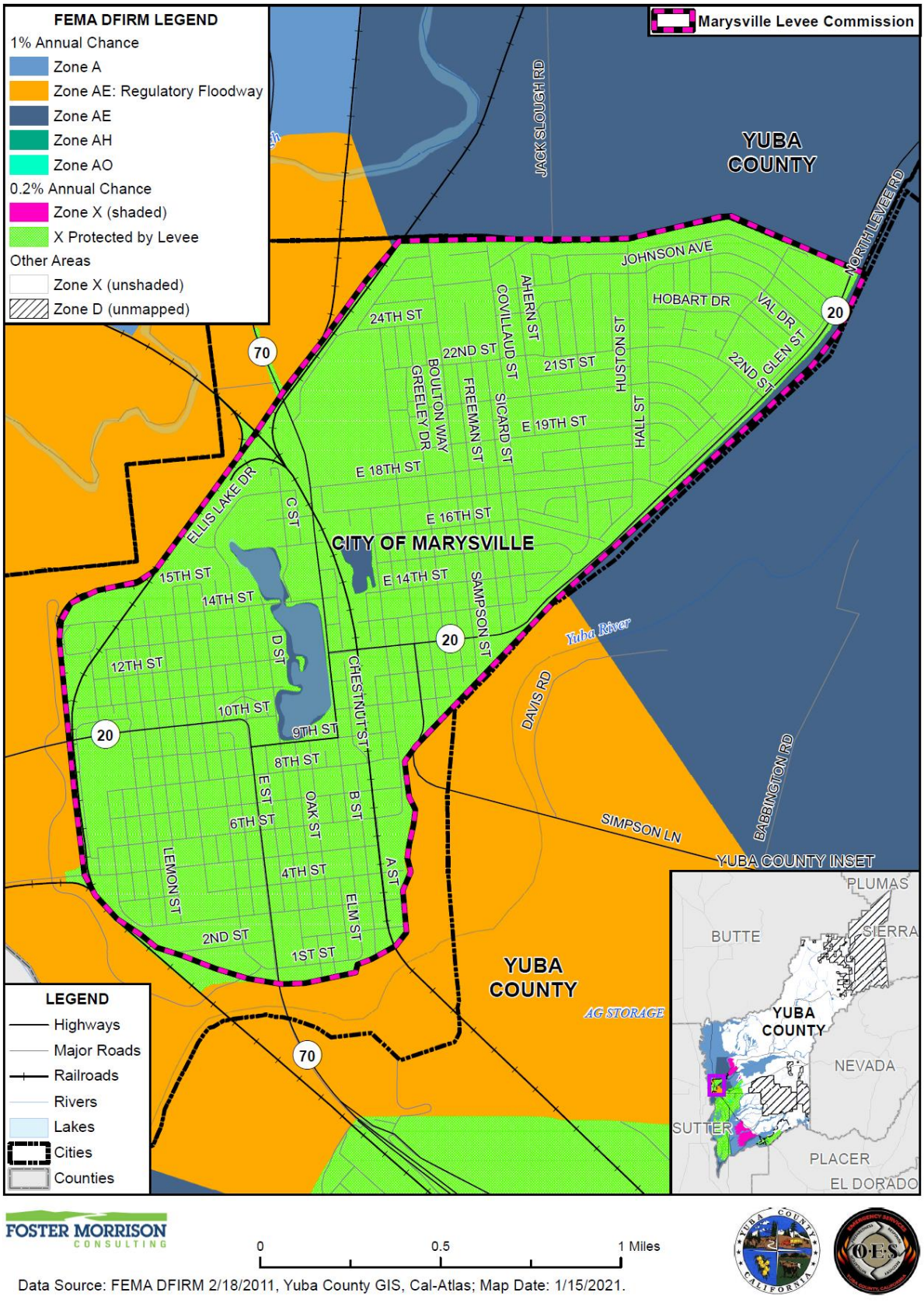
Hazard Profile and Problem Description

This hazard analyzes the FEMA DFIRM 1% and 0.2% annual chance floods. These tend to be the larger floods that can occur in the County or in the District, and have caused damages in the past. Flooding is a significant problem in Yuba County and the District. Historically, the District has been at risk to flooding primarily during the winter and spring months when river systems in the County swell with heavy rainfall and snowmelt runoff. Normally, storm floodwaters are kept within defined limits by a variety of storm drainage and flood control measures. Occasionally, extended heavy rains result in floodwaters that exceed normal high-water boundaries and cause damage. As previously described in Section 4.3.10 of the Base Plan, the Yuba County Planning Area and the MLC have been subject to historical flooding.

Location and Extent

The MLC has areas located in the 0.2% annual chance floodplain. This is seen in Figure D-2.

Figure D-2 MLC – FEMA DFIRM Flood Zones



Data Source: FEMA DFIRM 2/18/2011, Yuba County GIS, Cal-Atlas; Map Date: 1/15/2021.

Table D-4 details the DFIRM mapped flood zones within the 1% annual chance flood zone as well as other flood zones located within the District.

Table D-4 MLC– DFIRM Flood Hazard Zones

Flood Zone	Description	Flood Zone Present in the District
A	1% annual chance flooding: No base flood elevations provided	
AE	1% annual chance flooding: Base flood elevations provided	
AE Floodway	1% annual chance flood: Regulatory floodway; Base flood elevations provided	
AH	1% annual chance flood areas of shallow flooding between one to three feet deep. Regulatory floodway; Base flood elevations provided	
AO	1% annual chance flooding: sheet flow areas. BFEs derived from detailed hydraulic analyses are shown in this zone.	
Shaded X	0.2% annual chance flooding: The areas between the limits of the 1% annual chance flood and the 0.2-percent-annual-chance (or 500-year) flood	
X Protected by Levee	Areas protected by levees from 1% annual chance flood event. Levee protection places these areas in the 0.2% annual chance flood zone.	X
X (unshaded)	No flood hazard	

Source: FEMA

Additionally, flood extents can generally be measured in volume, velocity, and depths of flooding. Expected flood depths in the District vary, depending on the nature and extent of a flood event; specific depths are unknown. Flood durations in the District tend to be short to medium term, or until either the storm drainage system can catch up or flood waters move downstream. Flooding in the District tends to have a shorter speed of onset, due to the amount of water that flows through the District.

Past Occurrences

A list of state and federal disaster declarations for Yuba County from flooding is shown on Table D-5. These events also likely affected the District to some degree. Past occurrences of flooding are discussed in the Past Occurrences section of the Levee Failure hazard below.

Table D-5 Yuba County – State and Federal Disaster Declarations from Flood 1950-2020

Disaster Type	Federal Declarations		State Declarations	
	Count	Years	Count	Years
Flood (including heavy rains and storms)	16	1950, 1955, 1958, 1962, 1963 (twice), 1969, 1973, 1982, 1983, 1986, 1995 (twice), 1997, 2008, 2017	15	1955, 1962, 1963, 1964, 1969, 1970, 1983, 1986, 1995 (twice), 1997, 1998, 2006, 2017 (twice)

Source: Cal OES, FEMA

Vulnerability to and Impacts from Flood

Floods have been a part of the District's historical past and will continue to be so in the future. During winter months, long periods of precipitation and the timing of that precipitation are critical in determining the threat of flood, and these characteristics further dictate the potential for widespread structural and property damages. Predominantly, the effects of flooding are generally confined to areas near the waterways of the County. As waterways grow in size from local drainages, so grows the threat of flood and dimensions of the threat. This threatens structures in the floodplain. Structures can also be damaged from trees falling as a result of water-saturated soils. Electrical power outages happen, and the interruption of power causes major problems. Loss of power is usually a precursor to closure of governmental offices and community businesses. Roads can be damaged and closed, causing safety and evacuation issues. People may be swept away in floodwaters, causing injuries or deaths.

Floods are among the costliest natural disasters in terms of human hardship and economic loss nationwide. Floods can cause substantial damage to structures, landscapes, and utilities as well as life safety issues. Floods can be extremely dangerous, and even six inches of moving water can knock over a person given a strong current. During a flood, people can also suffer heart attacks or electrocution due to electrical equipment short outs. Floodwaters can transport large objects downstream which can damage or remove stationary structures. Ground saturation can result in instability, collapse, or other damage. Objects can also be buried or destroyed through sediment deposition. Floodwaters can also break utility lines and interrupt services. Standing water can cause damage to crops, roads, foundations, and electrical circuits. Direct impacts, such as drowning, can be limited with adequate warning and public education about what to do during floods. Other problems connected with flooding and stormwater runoff include erosion, sedimentation, degradation of water quality, loss of environmental resources, and economic impacts.

Assets at Risk

The office/warehouse, sandbag stockpile (20,000), and motorized equipment are at risk from this hazard

Levee Failure

Likelihood of Future Occurrence–Unlikely
Vulnerability–Extremely High

Hazard Profile and Problem Description

A levee is a raised area that runs along the banks of a stream or canal. Levees reinforce the banks and help prevent flooding by containing higher flow events to the main stream channel. By confining the flow to a narrower steam channel, levees can also increase the speed of the water. Levees can be natural or man-made.

Levees provide strong flood protection, but they are not failsafe. Levees are designed to protect against a specific flood level and could be overtopped during severe weather events or dam failure. For example, levees can be certified to provide protection against the 1% annual chance flood. Levees reduce, not eliminate, the risk to individuals and structures located behind them. A levee system failure or overtopping can create severe flooding and high water velocities. Levee failure can occur through overtopping or from

seepage issues resulting from burrowing rodents, general erosion, excessive vegetation and root systems and other factors that compromise the integrity of the levee. No levee provides protection from events for which it was not designed, and proper operation and maintenance are necessary to reduce the probability of failure.

Location and Extent

There is not a scientific scale or measurement system in place for levee failure. Expected flood depths from a levee failure in the District vary by event and location. The speed of onset is slow as the river rises, but if a levee fails the warning times are generally short for those in the inundation area. The duration of levee failure risk times can be hours to weeks, depending on the river flows that the levee holds back. When northern California dams and reservoirs are nearing maximum capacity, they release water through the river systems, causing additional burdens on County levees. Levees and their level of protection in the District are shown on Figure D-3.

Figure D-3 MLC – Levee Protected Areas

Source: MLC

Past Occurrences

The Marysville Levee system has prevented major flooding within the City of Marysville since its construction. High water events in 1955, 1986, and 1997 led to the evacuation of the City and concerns about the possibility of a levee failure, but breaks in other locations along the Yuba and Feather Rivers relieved the pressure on the Marysville Levee system in each instance. Former Marysville Levee Commissioner, W. T. Ellis, noted during high water periods in the early 20th century that the only location of concern during those events was the southern section of the levee system; the same area that the historic Yuba River Channel once occupied. This section of levee has been prone to seepage issues in the past. No past occurrences were noted since the 2007 Plan.

Vulnerability to and Impacts from Levee Failure

A levee failure can range from a small, uncontrolled release to a catastrophic failure. Levee failure flooding can occur as the result of prolonged rainfall and flooding. The primary danger associated with levee failure is the high velocity flooding of those properties outside and downstream of the breach.

Should a levee fail, some or all of the area protected by the levees would be at risk to flooding. Impacts from a levee failure include property damage, critical facility damage, and life safety issues. Business and economic losses could be large as facilities could be flooded and services interrupted. School and road closures could occur. Road closures would impede both evacuation routes and ability of first responders to quickly respond to calls for aid. Other problems connected with levee failure flooding include erosion, sedimentation, degradation of water quality, losses of environmental resources, and certain health hazards.

If a levee failure were to occur, it would be catastrophic to the City. The ring levee system which protects Marysville from rising river waters would act as a bowl, ensuring the City would be inundated by water flowing through the broken levee.

Assets at Risk

All District assets (from Table D-3) are at risk from this hazard

D.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.

D.6.1. Regulatory Mitigation Capabilities

Table D-6 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 MLC.

Table D-6 MLC 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/General Plan	N	
Capital Improvements Plan	N	
Economic Development Plan	N	
Local Emergency Operations Plan	N	
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)	Y	Five Year Plan
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	Floodplain ordinance – the District uses the State's floodplain rules. With floodplain ordinance, the District is able to control projects in flood plain, identify potential problems or projects that could negatively impact levee system.
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	N	
Other		

How can these capabilities be expanded and improved to reduce risk?
The District has no regulatory ability, and depends on the County and City of Marysville to enforce any regulations. The District will update its Five-Year Plan and will include additional hazard related items to reduce risk.

Source: MLC

D.6.2. Administrative/Technical Mitigation Capabilities

Table D-7 identifies the District department(s) responsible for activities related to mitigation and loss prevention in MLC.

Table D-7 MLC'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	
Mutual aid agreements	Y	With RD 784. Equipment caches located in strategic locations.
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	N	
Emergency Manager	N	
Community Planner	N	
Civil Engineer	N	
GIS Coordinator	N	
Other	Y	District Manager is trained on hazard mitigation.
Technical		
Warning systems/services (Reverse 911, outdoor warning signals)	Y	Reverse 911. County provides this.
Hazard data and information	N	
Grant writing	N	
Hazus analysis	N	
Other		
How can these capabilities be expanded and improved to reduce risk?		
The District is quite small and has one employee. Additional funding would allow for hiring of more employees, or contracting with companies to provide staff. Expanding our mutual aid capabilities with D10 to the north of the District would improve joint operations during incidents. Improved communications, quickly identify problems. Improve response.		

Source: MLC

D.6.3. Fiscal Mitigation Capabilities

Table D-8 identifies financial tools or resources that the District could potentially use to help fund mitigation activities.

Table D-8 MLC'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	218 election and assessment. To fund current levee improvement projects.
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	N	
Incur debt through private activities	N	
Community Development Block Grant	N	
Other federal funding programs	Y	USACE Authorized project partnership.
State funding programs	Y	Partnership with CVFPB for current project.
Other	Y	Yuba Water Agency
How can these capabilities be expanded and improved to reduce risk?		
The District will seek funds from Cal OES, FEMA, DWR, and other sources to perform levee related mitigation in order to reduce risk. This mitigation will vary depending on funding sources and funding amounts. Partnerships allow districts to maximize funding for projects. Utilize Yuba Water Agency, private entity dedicated to water and flood issues in Yuba County. Ability to propose and campaign for tax through the 218 process could increase funding. This allows the District to identify and educate public on ongoing OMRRR to the standard that will be required at completion of Yuba Basin Project, which Marysville project is final piece.		

Source: MLC

D.6.4. Mitigation Education, Outreach, and Partnerships

Table D-9 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 D-9 MLC'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)	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	Y	Yuba Water Agency. Formed to deal with water and flood issues in Yuba County. Agency could help with future mitigation issues.
How can these capabilities be expanded and improved to reduce risk?		
Due to the small size of the District and limitations of District staff, without funding it will be difficult to improve these capabilities to reduce risk. The District may seek to do public education to engage volunteers to assist on levee related issues. Public education, improved flow in flood way with setback levees, and grants to districts for mitigation planning are being pursued to reduce risk.		

Source: MLC

D.6.5. Other Mitigation Efforts

The District has many other completed or ongoing mitigation efforts that include levee improvements. There has been a concerted effort to place slurry walls below levee bases to address underseepage.

D.7 Mitigation Strategy

D.7.1. Mitigation Goals and Objectives

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

D.7.2. Mitigation Actions

The planning team for the MLC 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. The following hazards were considered a priority for purposes of mitigation action planning:

- Flood: 1%/0.2% Annual Chance
- Levee Failure

It should be noted that many of the projects submitted by each jurisdiction in Table 5-4 in the Base Plan benefit all jurisdictions whether or not they are the lead agency. Further, many of these mitigation efforts are collaborative efforts among multiple local, state, and federal agencies. In addition, the countywide public outreach action, as well as many of the emergency services actions, apply to all hazards regardless of hazard priority. Collectively, this multi-jurisdictional mitigation strategy includes only those actions and projects which reflect the actual priorities and capacity of each jurisdiction to implement over the next 5-years covered by this plan. It should further be noted, that although a jurisdiction may not have specific projects identified for each priority hazard for the five year coverage of this planning process, each jurisdiction has focused on identifying those projects which are realistic and reasonable for them to implement and would like to preserve their hazard priorities should future projects be identified where the implementing jurisdiction has the future capacity to implement.

Multi-Hazard Actions

Action 1. Eliminate Openings in Levees

Hazards Addressed: Floods: 1%/0.2% Annual Chance, Levee Failure

Goals Addressed: 1, 2, 3, 4, 5

Issue/Background: Levees have openings for roadways at lower elevation than levee tops.

Project Description: This project will seek to continue work that has been done. Actions implemented due to bridge replacement between Marysville and Yuba City. Bridge elevation eliminated levee opening and put roadway at grade. Also opening Eliminated due to Cal Trans Hwy 70 project. Elevation changes and levee placement took care of 2nd openings. Other openings will be remedied with this project.

Other Alternatives: Sandbag when needed.

Existing Planning Mechanisms through which Action will be Implemented: None.

Responsible Office: Marysville Levee Commission, Cal Trans, Yuba City, Marysville

Cost Estimate: Unknown at this time.

Potential Funding: Cal OES, Cal Trans, DWR, and FEMA

Benefits (avoided Losses): District benefits by having openings removed. Improved flood fight.

Schedule: When funding is available.

Priority (H, M, L): H

Action 2. Addressed Levee Underseepage

Hazards Addressed: Floods: 1%/0.2% Annual Chance, Levee Failure

Goals Addressed: 1, 2, 3, 4, 5

Issue/Background: Levees underseepage can cause flooding on the dry side of the levee. It can also cause levee failure.

Project Description: Levee improvement flood rating 200 years ++. Borings will be done by USACE identified underseepage potential. Slurry walls midlevee to below grade.

Other Alternatives: Fix after the fact.

Existing Planning Mechanisms through which Action will be Implemented: None.

Responsible Office: Partnership between USACE, CVFPB, MLC and Yuba Water Agency.

Cost Estimate: $200 million

Potential Funding: Cal OES, Cal Trans, DWR, and FEMA

Benefits (avoided Losses): Reduce potential levee failure due to under seepage.

Schedule: Within 5 years.

Priority (H, M, L): H