APPENDIX D
REPETITIVE LOSS AREA ANALYSIS

On May 3, 2016, the City of Sacramento's Repetitive Loss Area Analysis (RLAA) was adopted by City Council as part of the City of Sacramento's Comprehensive Flood Management Plan. Since its initial adoption, additional investigations have been performed in the city's repetitive loss areas. This report reflects all current and past findings.

Based on data received by the National Flood Insurance Program (NFIP), there are currently 21 repetitive loss buildings within the City. Only five repetitive loss buildings are insured with flood insurance. The City has had a total of 49 repetitive loss buildings, 28 of these buildings have been mitigated.

D.1 Repetitive Loss Area Analysis Process

The RLAA planning process incorporated requirements from Section 510 of the 2013 *CRS Coordinator's Manual*. The planning process also incorporated requirements from the following guidance documents: 1) Federal Emergency Management Agency (FEMA) publication *Reducing Damage from Localized Flooding: A Guide for Communities*, Part III Chapter 7; 2) CRS publication *Mapping Repetitive Loss Areas* dated August 15, 2008; and 3) Center for Hazards Assessment Response and Technology, University of New Orleans draft publication *The Guidebook to Conducting Repetitive Loss Area Analyses*. Most specifically, this RLAA included all five planning steps included in the 2013 *CRS Coordinator's Manual*:

Table D.1. Five Planning Steps

Step 1	Advise all the properties in the repetitive loss areas that the analysis will be conducted and request their input on the hazard and recommended actions.
Step 2	Contact agencies and organizations that may have plans or studies that could affect the cause or impacts of the flooding. The agencies and organizations must be identified in the analysis report.
Step 3	Visit each building and collect basic data.
Step 4	Review alternative approaches and determine whether any property protection measures or drainage improvements are feasible.
Step 5	Document the findings. A separate analysis report must be prepared for each area.

The majority of the repetitive loss area experience the same cause of flooding, local drainage, however each region has unique characteristic that impact the property protection measures that are most effective in promoting flood protection. Therefore, data collected and analyzed in steps three, four, and five have been organized by region.

Advise all Property Owners

The City of Sacramento sends an annual notice to all repetitive loss area properties with information on the potential flood hazard and recommended mitigation activities. However, for this process the city developed a questionnaire, Figure D.1, that would allow homeowners to share important information about flooding in their neighborhoods. City staff walked each repetitive loss area and delivered the questionnaire directly to each structure. The questionnaire included an explanation of what a repetitive loss area was and also requested historical information on the properties flood history.

The City received four completed questionnaires from three repetitive loss areas. One homeowner was also able to provide pictures of flooding that occurred during recent storms.

Figure D.1. Sample Repetitive Loss Area Property Questionnaire

WAS THERE FLOODING IN YOUR AREA?
FLOOD PROTECTION QUESTIONNAIRE

Name: _____ Email: _____

Address: _____

1. How many years have you occupied the home/building at this address? _____
2. Do you rent or own this home/building? ❑ Rent ❑Own
3. What type of foundation does the home/building have?
   ❑ Slab ❑ Crawl Space ❑ Basement ❑ Other _____
4. Has this home/building or property ever been flooded or has a water problem?
   ❑ Yes ❑ No (if "no" please complete only 10-14)
5. In what year(s) did it flood? _____
6. What do you feel was the cause of the flooding? Check all that affect your home/building.
   ❑ Storm drain backup ❑ Standing water next to house/building
   ❑ Drainage from nearby property ❑ Saturated ground/leaks in basement walls
   ❑ Overbank flooding from: _____ ❑ Other: _____
7. How did the water enter your home/building? _____
8. How deep did the water get?
   ❑ Yard Only: _____ feet ❑ Crawl Space: _____ feet
   ❑ Over First Floor: _____ feet ❑ Basement: _____ feet
   ❑ Water kept out of house by sandbagging, sewer valve, or other protective measures
9. What was the longest timeframe that water stayed in the house/building? ____hours or ____days
10. Have you installed any flood protection measures on the property?
    ❑ Sump pump ❑ Waterproofed the outside walls ❑ Re-graded yard to reduce water
    ❑ Moved things out of basement ❑ Backup power system/generator ❑ Sandbagged
    ❑ Elevated utilities (water heater, etc.) ❑ Onsite Drainage ❑ Other _____
11. Did any of the measures checked in item 10 work? If so, which ones? If not, do you know why they failed? _____
12. Do you have flood insurance? ❑ Yes ❑ No
13. Are you interested in mitigating your flooding issues through grant programs and/or floodproofing actions? ❑ Yes ❑ No
14. Include any additional information and comments you may have about flooding in your area:
    _____
    _____
    _____
    _____

Please help us by completing this survey by **February 24, 2017** and returning it to:
EMAIL: floodinfo@cityofsacramento.org FAX: (916) 808-1497
MAIL: Kelly Sherfey, Department of Utilities, 1395 35th Avenue, Sacramento, California 95822

SIGN UP FOR EMERGENCY ALERTS | WWW.SACRAMENTO-ALERT.ORG

Why You Received This Questionnaire

The City of Sacramento is conducting an analysis of specific areas in the City that have experienced repetitive flooding throughout the years. These areas are called **Repetitive Loss Areas.** You have received this survey because you are located in or near a Repetitive Loss Area.

Any information you can provide us will help the City determine the source of flooding in your neighborhood and what measures can be taken to prevent future flooding. There may be opportunities to receive grant funding to mitigate flooding issues. **If you are interested in information on grant programs and property protection, please check "yes" on question 13 of the survey.**

The Repetitive Loss Area Analysis, which includes information from this survey, will be published online for review by March 10, 2017. You can review and comment on this document by visiting our website at http://www.cityofsacramento.org/floodready. If you would like to receive an email notification when the analysis is ready for review, please provide your email address on the returned survey.

General Flood Preparedness

- We have enclosed a brochure on how to prepare and project yourself, property, and family in the event of a flood. We also encourage residents to purchase flood insurance to protect their assets. Most homeowner's insurance policies do not cover loss from flooding.
- Sign up for emergency alerts at www.sacramento-alert.org. Sacramento Alert is the new "reverse 911" system for the Sacramento region. In the event of an emergency, this system will be used to provide real-time information such as levee updates, evacuation routes, and other important information.
- For onsite visits, grant information, or general flood information, please contact Kelly Sherfey at (916) 808-2539 or ksherfey@cityofsacramento.org. **In the case of active flooding, please contact 311.**

Has your neighborhood experienced flooding?

Please take a moment to fill out this survey
or call us at 916-808-2539.

We may be able to help.

City of
SACRAMENTO
Department of Utilities

Contact Agencies & Organizations

The City reached out to external agencies and internal departments to access plans and studies that could affect or help determine the cause or impacts of flooding within the repetitive loss area. The following reports could help determine future problems and potentially assist in mitigation measures for the property owners.

- City of Sacramento
  - Comprehensive Flood Management Plan
  - Sacramento Rescue and Flood Evacuation Maps: Levee & Folsom Dam Breach
  - Capital Improvement Plan and Utilities Drainage Master Plans
  - Urban Design Guidelines
  - Historical flood data
- County of Sacramento
  - Sacramento County Local Hazard Mitigation Plan
- California Department of Water Resources (DWR)
  - FloodSAFE
    - Levee Flood Protection Zone Map (LFPZ)
    - Best Available Maps (BAM)
    - California Data Exchange Center (CDEC)
- US Army Corps of Engineers
  - Sacramento District Levee Systems Inspection Status
- Federal Emergency Management Agency
  - Repetitive Loss & Flood Insurance Claims Data
  - FEMA Flood Insurance Studies/Flood Insurance Rate Maps
  - NFIP Coordinators Manual
- National Oceanic and Atmospheric Administration
  - California Nevada River Forecast Center
- GEI Consultants, Inc.
  - Technical Memorandum: Repetitive Flood Loss Investigation

Summary of Studies and Reports

City of Sacramento Comprehensive Flood Management Plan

The purpose of the City of Sacramento's Comprehensive Flood Management Plan is to identify, assess and mitigate flood hazards and flood risk in the City using non-structural and structural measures. This plan analyzes improving floodplain management through land use planning and development, levee security, outreach, internal drainage, structural measures, and emergency management. The plans also develops strategies and action items on how the City will mitigate flood hazards and vulnerabilities.

Sacramento Rescue and Evacuation Maps

The maps show the results of levee and dam breaks at different locations within the City and County of Sacramento for the 100-year and 200-year flood events. The maps show evacuation routes and water depths over time.

Capital Improvement Plan and Utilities Drainage Master Plans

The 2015-2020 Capital Improvement Plan is a five-year plan for the funding and construction or repair of City buildings and facilities such as streets, roads, storm drains, traffic signals, parks, and community centers. The total planned CIP budget for fiscal year 2015/16 is $92.9 million. Of that only $600,000 is designated for drainage projects.

Department of Utilities Drainage Master Plans exist for approximately half of the drainage basins within the City. The plans analyze piping and pump station drainage.

Sacramento County Local Hazard Mitigation Plan

The purpose of hazard mitigation is to reduce or eliminate long-term risk to people and property from hazards. The communities within Sacramento County developed this Local Hazard Mitigation Plan (LHMP) update to make its residents less vulnerable to future hazard events. This plan was prepared pursuant to the requirements of the Disaster Mitigation Act of 2000 so that Sacramento County would be eligible for the Federal Emergency Management Agency's (FEMA) Pre-Disaster Mitigation and Hazard Mitigation Grant programs.

The communities followed a planning process prescribed by FEMA, which began with the formation of a hazard mitigation planning committee (HMPC) comprised of key representatives and other regional stakeholders. The HMPC conducted a risk assessment that identified and profiled hazards that pose a risk within the County, assessed the County's vulnerability to these hazards, and examined the capabilities in place to mitigate them. The County is vulnerable to several hazards that are identified, profiled, and analyzed in this plan. Floods, levee failures, wildfires, and severe weather are among the hazards that can have a significant impact on the County.

FloodSAFE, Levee Flood Protection Zone Map, and Best Available Maps

The FloodSAFE program is a sustainable integrated flood management and emergency response system though out California where steps are taken to manage flood risk. Multiple types of maps have been prepared as part of this program.

LFPZ maps were prepared for the Lower Sacramento Valley Region as part of the FloodSAFE initiative. The LFPZ maps identify the areas that are protected by a project levee. The LFPZ maps are also used as part of the DWR's levee risk notification program.

DWR has the Best Available Maps to display the latest floodplains in a web viewer located at http://gis.bam.water.ca.gov/bam. With this viewer, DWR has expanded the floodplains to cover all counties in the State and to include 500-year floodplains. The 100-, 200-, and 500-year floodplains can be selected for display using this viewer. The web viewer allows users to view a particular area, identify their potential flood hazards, and print a floodplain map.

Sacramento District Levee Systems Inspection Status

The levee inspections show any unacceptable items within the levees that may have affected the repetitive loss area properties in the past and future projects. These unacceptable items include items such as encroachments, slope stability issues, animal burrowing, and erosion. The State of California also provide levee inspection reports.

California Data Exchange Center (CDEC)

The CDEC installs, maintains, and operates an extensive hydrologic data collection network, including automatic precipitation and river stage sensors for the flood forecasting program through a centralized location online.

CDEC stores and processed real-time hydrologic information gathered by various cooperators throughout the State; and then disseminates this information to support forecasting and flood operations activities and to meet the data reporting needs of various cooperators, public and private agencies, the news media, and the public.

The CDEC includes the ALERT gauges maintained by the City and County of Sacramento. ALERT is an acronym which stands for Automated Local Evaluation in Real Time. The Sacramento City and County's ALERT system consists of 2 base stations, and approximately 50 gauging stations.

FEMA Flood Insurance Studies (FIS)

FEMA's FIS for the City of Sacramento are dated August 16, 2012 and June 16, 2015. The FIS revises and updates information on the existence and severity of flood hazards within the City. The FIS also includes part of the revised digital Flood Insurance Rate Maps (FIRMs) which provide updated Special Flood Hazard Areas (SFHAs) and flood zones for the City.

Repetitive Loss & Flood Insurance Claims Data

The data received on the Repetitive Loss file such as the date(s), amount(s), and frequency of past flood insurance claims was used to analyze the cause of flooding.

The Privacy Act of 1974 (5 U.S.C. 522a) restricts the release of flood insurance policy and claims data to the public. This information can only be released to state and local governments for the use in floodplain management related activities. Therefore, all claims data in this report are only discussed in general terms, but the data was used internally.

California Nevada River Forecast Center

The California Nevada River Forecast Center is a source that provides weather, water and climate data. The City of Sacramento utilized this source to help in the analysis and explanation of claims that occurred during heavy precipitation events.

Technical Memorandum: Repetitive Flood Loss Investigation

GEI Consultants provided assistance to the City of Sacramento, Department of Utilities in determining why three repetitive loss areas flooded. This investigation reviewed the capacity of the local drainage system and the topographic/field survey to determine if the building finished floor elevations have adequate freeboard.

Regional Reports

Many methods were utilized to collect data for the RLAA. While delivering the flood protection questionnaires discussed in Step 2, staff conducted field surveys for all structures in the 18 repetitive loss areas. Elevation data was collected from the Sacramento County Assessor's Office, as well as, some onsite surveying. Staff reviewed all available Drainage Master Plans for the affected areas. These studies provided drainage capacity information and potential mitigation strategies. Flood management plans were analyzed to help determine the community's current mitigation activities and provided hazard information. Lastly, past insurance claim information was analyzed for each repetitive loss area to identify patterns in flooding issues.

The repetitive loss properties are vastly spread throughout the City of Sacramento. The majority of the structures flooded during the winter storms of 1995 and 1997 due to undersize drainage conveyance systems, power outages at the pump stations, and low-lying properties within their respective neighborhood.

For reporting purposes, the 21 repetitive loss properties have been categorized into five regions which are then broken down into individually selected areas/neighborhoods where the properties are located. At no point is the repetitive loss property specifically identified in this report. All structures within a repetitive loss area are susceptible to the same flooding conditions, however may not have experienced flood losses.

Table D.2 illustrates the percentages of the properties that are located in each flood zone.

Table D.2. Percentage of Repetitive Loss Properties in Each Flood Zone

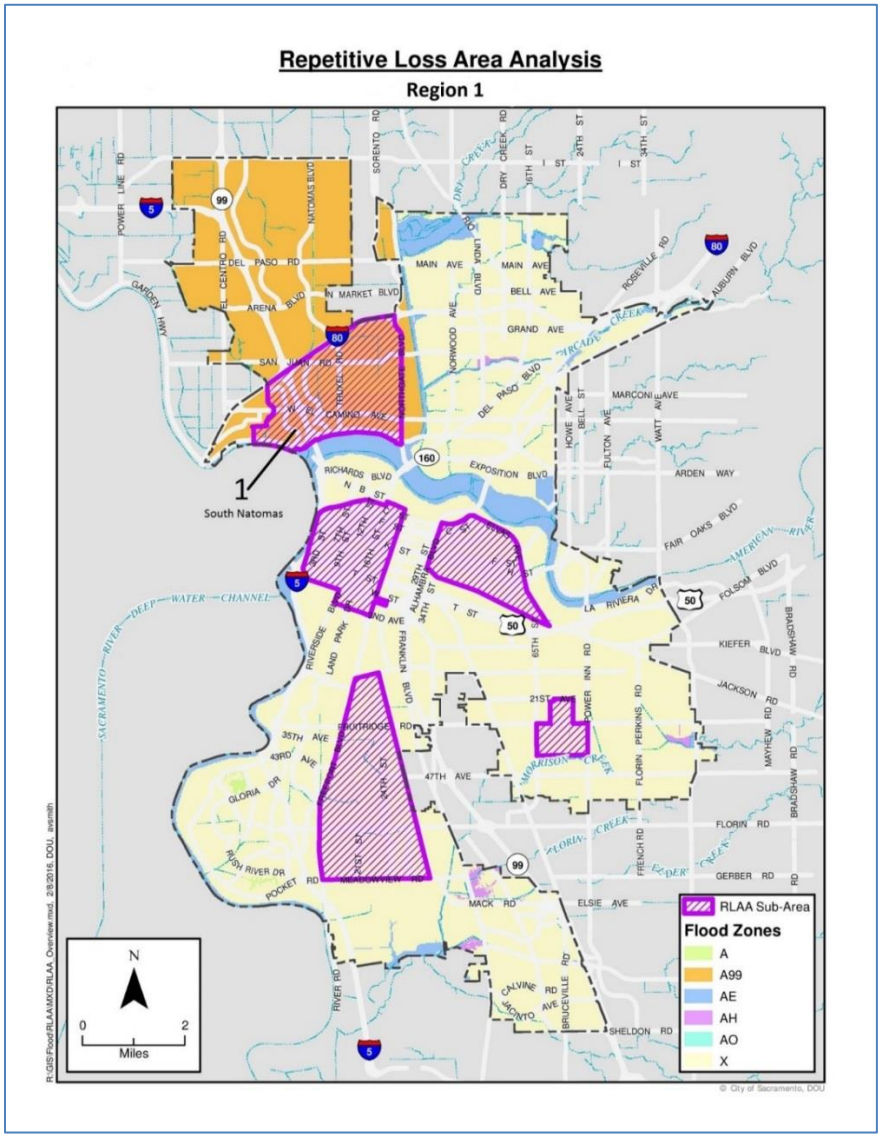
Repetitive Loss Area	Percentage of Area			
	Zone AE	X Zone Minimal Flood Hazard	X Zone Protected by Levees	Zone A99
Region 1	33%	0%	0%	67%
Region 2	0%	33%	67%	0%
Region 3	0%	0%	100%	0%
Region 4	0%	0%	100%	0%
Region 5	0%	0%	100%	0%
Total # of Properties	1	1	17	2

Many of the properties are located in areas outside of a Special Flood Hazard Area. This is consistent with the majority of the City of Sacramento classified as an X Zone whether it is due to minimal flood hazard or reduced risk due to levees. The exception is found in Region 1 where the area is classified mostly as an A99 Zone, with only a small fraction listed as an AE Zone. The AE Zone is found on the Garden Highway which runs along the Sacramento River where a small amount of development that was built on the waterside of the levee. Based on this information, traditional flood zones are not a contributing factor in determining repetitive loss areas within the City. It also reinforces the findings that many of the repetitive loss area are affected by grading and draining issues during heavy, long duration storms.

Region 1 – South Natomas

The greater Natomas Basin is 55,000 acres in size and extends into the northwest portion of Sacramento County running south. The Basin is north of downtown at the American River Parkway (3 miles from downtown). Within the City, the area of the Natomas Basin is approximately 12,500 acres and is surrounded by levees. Natomas is in a FEMA A99 zone meaning that levee construction is more than 50% complete to reach 100-year flood protection among other requirements. In addition to riverine flooding and potential levee breach, the Natomas Basin has interior levees and canals, so it is also at risk to internal drainage issues,. The Natomas area is divided into North Natomas and South Natomas. The focus of the RLAA is in South Natomas where three repetitive loss areas were analyzed.

Figure D.2. Repetitive Loss Area Regions Map – Region 1



RLAA Region 1 – Area 1

Location: Garden Valley Park, West of Northgate Blvd.

Number of Properties in Defined Area:10

Number of RL Properties in Area: 1

Flood Zone: A99

Dates of RL Flooding: 1/10/1995 1/24/2000

Source of RL Flooding: This area is in Drainage Basin 14, which is prone to street flooding due to increased development in the area. Also, some properties are more prone to structural damage due to the addition of fill to their property. The changes in grading causes water to pool and seep into a portion of the structure that is built below or at grade. *Mitigation Recommendations:* For the area, flooding can be reduced by the addition of a detention basin, increase in pumping capacity, and pipe improvements. These projects are identified in the Drainage Master Plan for Basin 141. As new development is constructed, drainage improvements will be funded and built. For individual property protection, insure proper grading on the property to allow runoff to reach street drains. Other options include, installation of a drain or diversion, elevate the portion of the structure that is built below or at grade, and sandbagging can provide additional protection from localized flooding.

Example of different front yard grading found within the neighborhood. Also, front rooms are built at or below grade.

RLAA Region 1 – Area 2

Location: Northgate Park, East of Truxel Road

Number of Properties in Defined Area: 27

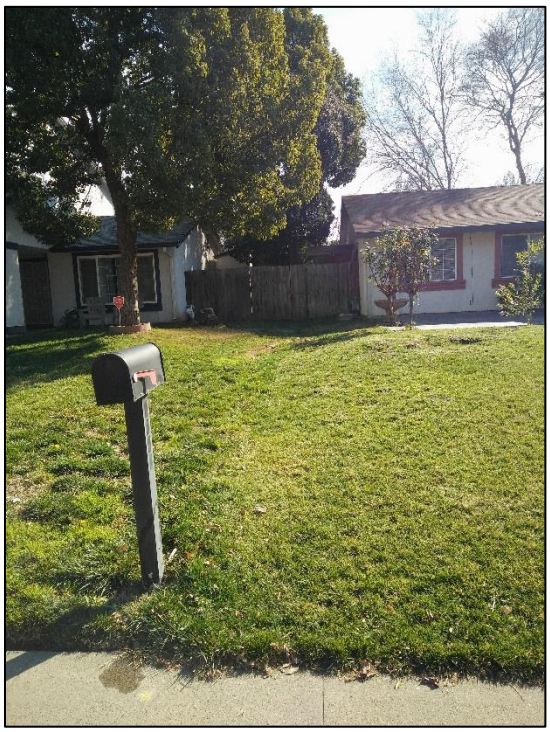
Number of RL Properties in Area: 1

Flood Zone: A99

Dates of RL Flooding: 1/05/1997
2/04/1998

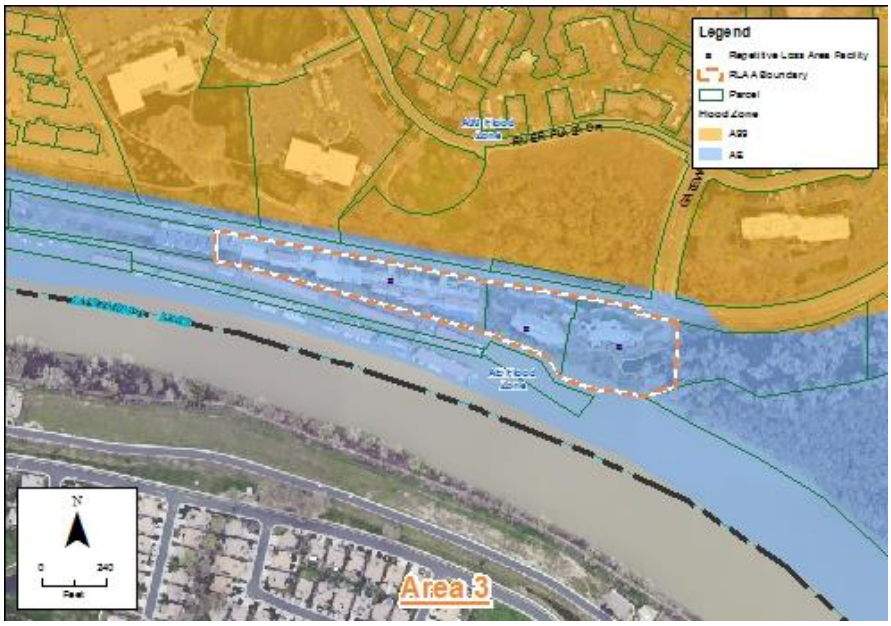
Source of RL Flooding: Flooding occurred during heavy winter storms. The source of the flooding is runoff from adjacent properties graded to a higher elevation. *Mitigation Recommendations:* Grading to redirect the flow of water, installation of drains to divert pooling water, construction of a floodwall, or sandbags.

Example of the change in ground elevation between adjust properties within the neighborhood.



Diversion was created to direct water away from structures.

RLAA Region 1 – Area 3



Location: Garden Highway, North of Sacramento River

Number of Properties in Defined Area: 3

Number of RL Properties in Area: 1

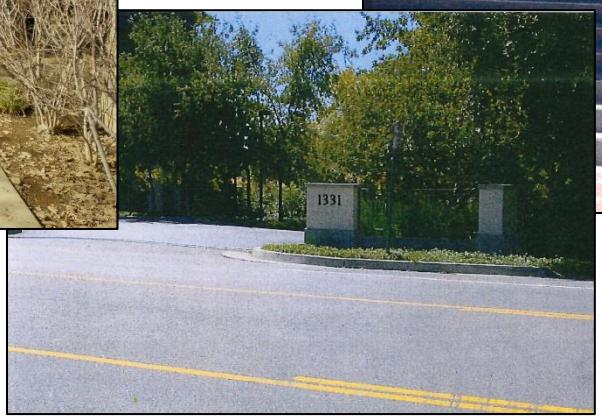
Flood Zone: AE

Dates of RL Flooding: 1/09/1995 1/01/1997

Source of RL Flooding: During winter storms, this strip of commercial development will experience a large amount of water draining down into the parking structures and overflow from the Sacramento River. Flooding has occurred when the pump system located in the parking structures fail. *Mitigation Recommendations:* Improvement or replacement of sump system. Based on information provided by occupants of this area, improvements have been made to the pump systems and no additional failures have occurred. Also, the repetitive loss area is located in a natural area. Care should be given to preserve the natural quality of its surrounding to promote natural flood control qualities found near the river.

Parking garage located near the edge of the Sacramento River.

Habitable spaces of structures are elevated.



Entrance to parking garages below main structures.

Region 1 – Field Visits

Table D.3 provides field visit information collected for all structures located in Region 1's repetitive loss areas. Questionnaires were left at each building and City staff talked with residents and tenants in the area after a large storm in January and February of 2017 to help further understand flooding patterns in the area.

Table D.3. Region 1 Field Visit Summary

Region	Area	Address	Elevation (NAVD 88) (FT.)	Onsite Contact	Foundation	Condition
1	1	3485 BINGHAMPTON DR.	15.1746		Slab	Average
1	1	3491 BINGHAMPTON DR.	15.2789		Slab	Average
1	1	3497 BINGHAMPTON DR.	15.6841		Slab	Average
1	1	3503 BINGHAMPTON DR.	15.7027		Slab	Average
1	1	3509 BINGHAMPTON DR.	16		Slab	Average
1	1	3515 BINGHAMPTON DR.	16.1021		Slab	Average
1	1	3521 BINGHAMPTON DR.	16.6888		Slab	Average
1	1	3527 BINGHAMPTON DR.	16.3052		Slab	Average
1	2	1320 OAK NOB WAY	14		Slab	Average
1	2	1330 OAK NOB WAY	14.1143		Slab	Average
1	2	1340 OAK NOB WAY	14.2517		Slab	Average
1	2	1350 OAK NOB WAY	14.5096		Slab	Average
1	2	1360 OAK NOB WAY	14.1886		Slab	Average
1	2	1370 OAK NOB WAY	14.5409		Slab	Average
1	2	1380 OAK NOB WAY	14.0413		Slab	Average
1	2	1390 OAK NOB WAY	13.4144		Slab	Average
1	2	1400 OAK NOB WAY	13.571		Slab	Average
1	2	1410 OAK NOB WAY	13.7153		Slab	Average
1	2	1420 OAK NOB WAY	13.7407		Slab	Average
1	2	1430 OAK NOB WAY	13.6304	✓	Slab	Average
1	2	1440 OAK NOB WAY	13.5395		Slab	Average
1	2	1450 OAK NOB WAY	13.8545		Slab	Average
1	2	1431 WOODSIDE GLEN WAY	12.9108		Slab	Average
1	2	1423 WOODSIDE GLEN WAY	13.7833		Slab	Average
1	2	1415 WOODSIDE GLEN WAY	13.8217		Slab	Average
1	2	1407 WOODSIDE GLEN WAY	14.1763		Slab	Average
1	2	1399 WOODSIDE GLEN WAY	14.4965		Slab	Average

1	2	1391 WOODSIDE GLEN WAY	14.8546		Slab	Average
1	2	1383 WOODSIDE GLEN WAY	14.0629		Slab	Average
1	2	1375 WOODSIDE GLEN WAY	14.215		Slab	Average
1	2	1367 WOODSIDE GLEN WAY	14.5882		Slab	Average
1	2	1359 WOODSIDE GLEN WAY	14.343		Slab	Average
1	2	1351 WOODSIDE GLEN WAY	14.1717		Slab	Average
1	2	1343 WOODSIDE GLEN WAY	14.7193		Slab	Average
1	2	1335 WOODSIDE GLEN WAY	14.3229		Slab	Average
1	3	1331 GARDEN HWY	27.4152	✓	Slab	Average
1	3	1321 GARDEN HWY	39.0228	✓	Slab	Average
1	3	1383 GARDEN HWY #200	26.1868		Elev. Slab on Supports	Average

Region 1 - Mitigation and Action Items

Various mitigation activities were considered when analyzing Region 1's hazard assessment. Table D.4 lists all considered mitigation activities and identifies appropriate mitigation activities for each repetitive loss area.

Table D.4. Region 1 Review of Alternative Approaches

Mitigation Activity	Region 1		
	Area 1	Area 2	Area 3
Prevention			
Continue Enforcement of Stormwater Regulations	X	X	X
Continue Drainage System Maintenance	X	X	X
Continue Enforcement of Floodplain Management Regulations			X
Property Protection			
Building Elevation	X		
Relocation			
Improvement or Installation of Private Sumps			X
Sewer Backup Protection			
Floodproofing			
Flood Insurance	X	X	X
Grading	X	X	
Sandbags	X	X	

Elevate Utilities			
Natural Resource Protection			
Natural Area Preservation			X
Natural Area Restoration			
Emergency Services			
Hazard Threat Recognition	X	X	X
Hazard Warnings	X	X	X
Health & Safety Maintenance			X
Structural Projects			
Floodwalls		X	
Diversions	X	X	
Conveyance System Improvements (Structural)			
Detention Basin	X		
Increased Pumping Capacity	X		
Pipe Improvements	X		
Public Information			
Outreach Projects	X	X	X
Map Information	X	X	X
Technical Assistance	X	X	X

Based on the complete analysis of this region the following action items were identified. These action items were selected based on community feedback, funding, current City activities, and data reports.

Table D.5. Region 1 Action Items

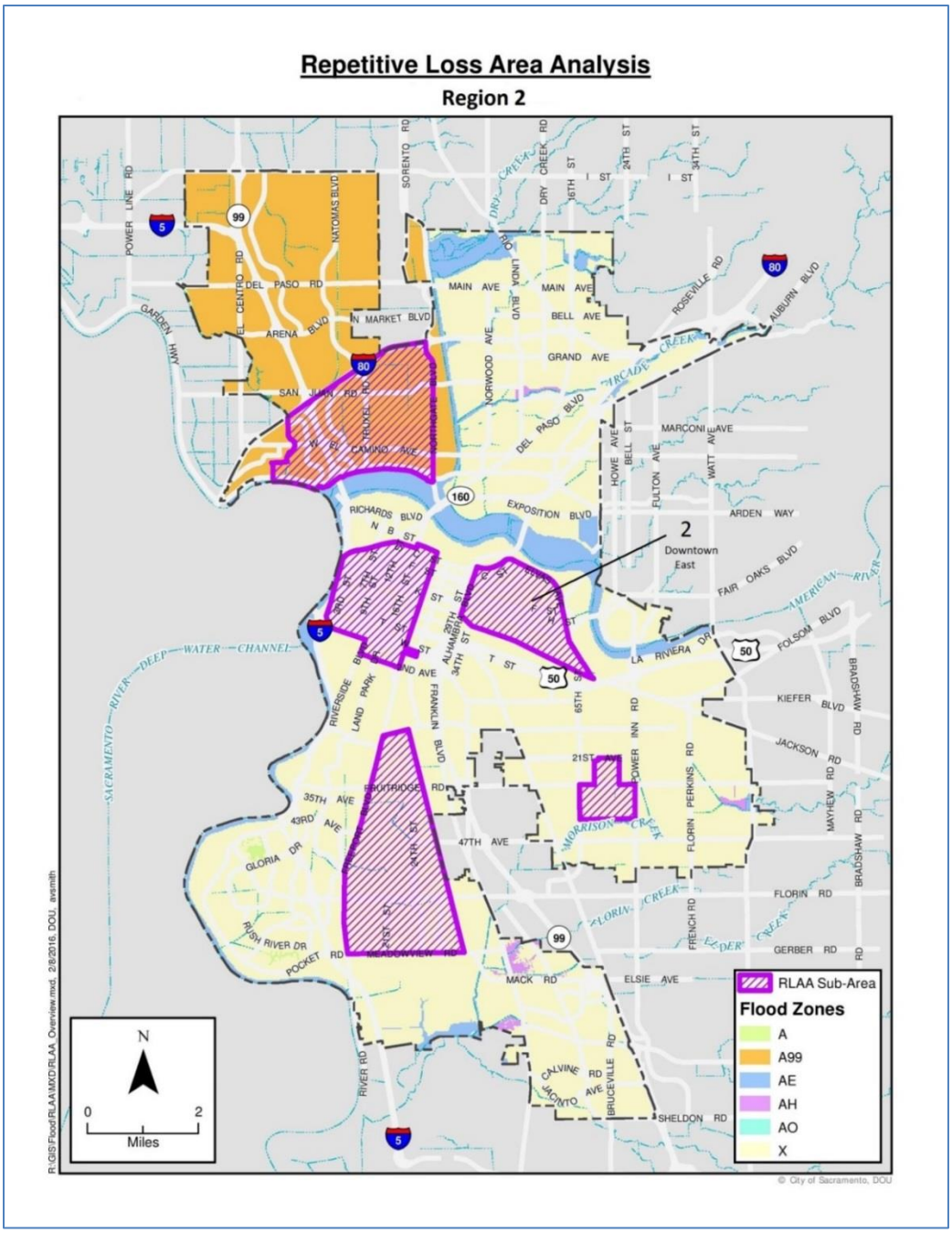
Action Item	Responsible Office	Schedule	Potential Funding
Elevate structures that are built at or below grade	Department of Utilities, Floodplain Management	Dependent of property owner interest and grant opportunities	Grants and Private Funding
Improvement and maintenance of private sumps	Property Owner	Ongoing	Private Funding
Onsite grading to divert water to city conveyance system	Property Owner	Dependent of property owner interest	Private Funding or Grants
Sandbagging	Department of Utilities, Operations & Maintenance (supplies only); Property Owner	During Flood Event	Department Funding (supplies only)
Develop sandbag locations closer to repetitive loss area	Department of Utilities	October 2018	Department Funding
Diversions to direct stormwater to City conveyance system	Property Owner	Dependent of property owner interest	Private Funding or Grants

Conveyance system improvements identified in Drainage Master Plan for Basin 141	Department of Utilities, Wastewater & Stormwater Engineering Program	Long-Term	Capital Improvement Program
Enforcement of stormwater regulations	Department of Utilities, Environmental & Regulatory Compliance	Ongoing	Department Funding
Drainage system maintenance	Department of Utilities, Operations & Maintenance	Ongoing	Department Funding
Enforcement of floodplain management regulations	Department of Utilities, Floodplain Management	Ongoing	Department Funding
Promotion of flood insurance	Department of Utilities, Floodplain Management	Ongoing	Department Funding
Hazard threat recognition system	Department of Utilities	Ongoing	Department Funding
Hazard warnings	Department of Utilities; Emergency Services; Public Information Office	During Flood Event	Department Funding
Flood/Map information hotline	Department of Utilities, Floodplain Management	Ongoing	Department Funding
Technical Assistance Visits	Department of Utilities, Floodplain Management	Ongoing	Department Funding

Region 2 – Downtown East

The three repetitive loss areas in Region 2 are located in the neighborhoods of River Park, McKinley Park, and Coloma Terrace. These are older areas of the City that is vulnerable to overbanking, erosion, and seepage from the American River levees nearby and has other risks such as interior drainage issues (i.e., undersized and aged pipes).

Figure D.3. Repetitive Loss Area Regions Map – Region 2



RLAA Region 2 – Area 4

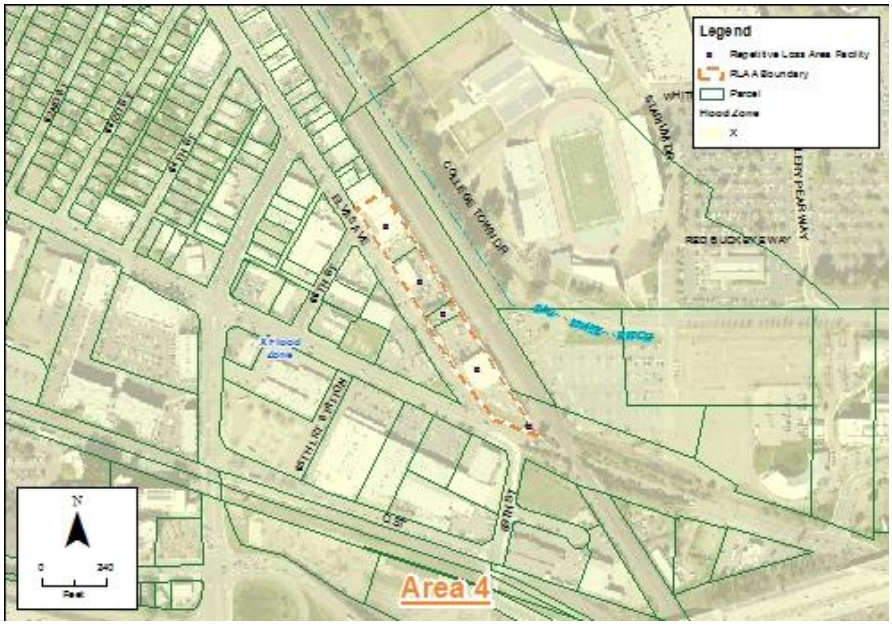
Location: River Park Neighborhood, West of Sacramento State

Number of properties in defined area: 5

Number of RL Properties in area: 1

Flood Zone: Shaded-X Zone

Dates of RL Flooding:
2/18/1986
6/04/1993
1/22/1997



Source of RL Flooding: This industrial park is in a low-lying area in River Park, which is west of California State University, Sacramento and follows the American River levee. The industrial park is also next to the City's secondary levee. At the time when flooding occurred, the area had an undersized drainage conveyance system with no onsite drainage. *Mitigation Recommendations:* It is recommended that this area be removed from the repetitive loss list because of the completion of two key mitigation projects in 2007. Sump 31 was enlarged and a new force main was constructed to the American River. Additionally, the Redding Avenue detention basin was constructed to help mitigate flooding in the basin. As always, flood insurance and general flood preparedness is advised for property owners in the area.

Improved drainage system project on Elvas Avenue that was completed in 2009.

Overview image of Redding Avenue detention basin that was completed in 2007.

Overview of Area 4

RLAA Region 2 – Area 5

Location: 45th Street, East of Elvas Avenue in Coloma Terrace Neighborhood

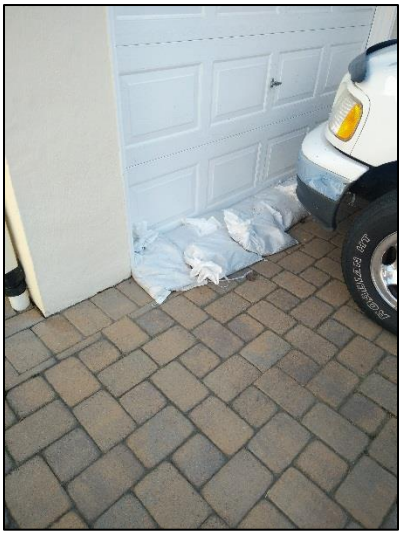
Number of Properties in Defined Area: 15

Number of RL Properties in Area: 1

Flood Zone: Shaded-X Zone

Dates of RL Flooding:
4/08/1995
2/04/1998

Source of RL Flooding: Flooding occurs during heavy storms that overwhelmed the undersized drainage system in the area. The structures included in the repetitive loss are located in a low-lying area of the neighborhood, so they are more dramatically affected by street flooding. *Mitigation Recommendations:* Based on Basin 10's Drainage Master Plan, it is suggested that critical pipes in the system be enlarged and a detention basin be constructed to provide adequate flood protection for the basin. These improvements would mitigate the repetitive loss properties in Area 5. Individual property owners can mitigate flood losses by using sandbags, keeping street drains clear of debris, constructing floodwalls on their property, installing sump pumps, and elevating utilities.



Left: Residents use sandbags to protect their garage from street flooding during January 2017 storms.

Right: Debris collecting on a storm drain at the corner of 45th and C Streets.

RLAA Region 2 – Area 6

Location: McKinley Park, East of the Capitol City Freeway

Number of Properties in Defined Area: 12

Number of RL Properties in Area: 1

Flood Zone: Shaded-X Zone

Dates of RL Flooding: 1/29/1995 1/25/1997

Source of RL Flooding: This area is located in a basin with an undersized drainage conveyance system. This area is also impacted by overflows from the Combined Sewer System. During large storms water pools in the streets and yards of the surrounding properties. Most flood loss is due to water seeping into garages, basements and entryways located at grade level. *Mitigation Recommendations:* The Department of Utilities is currently in the pre-design stage for a water vault that will reduce flooding in this area. The estimated completion date is 2019. In the meantime, flood insurance, using sandbags, sumps, sewer backup protection, and preparedness outreach are all mitigation activities that will increase area flood protection.

Street flooding from February 2017 storm. Overwhelmed conveyance system.

Above: Some homes in this area have basements and doorways located at grade level.

Left: Example of the City's warning that the area may contain sewage.

Region 2 – Field Visits

Table D.6 provides field visit information collected for all structures located in Region 2's repetitive loss areas. Questionnaires were left at each building and City staff talked with residents and tenants in the area after a large storm in January and February of 2017 to help further understand flooding patterns in the area.

Table D.6. Region 2 Field Visit Summary

A	SA	Address	Elevation (NAVD 88) (FT.)	On-site Contact	Foundation	Condition
2	4	6661 ELVAS AVE.	37.6479		Slab	Average
2	4	6667 ELVAS AVE.	38.9518		Slab	Average
2	4	6801 ELVAS AVE.	39.2869		Slab	Average
2	4	6601 ELVAS AVE.	38.4684		Slab	Average
2	5	421 45TH ST.	34.0295		Crawlspace	Average
2	5	411 45TH ST.	34.1746		Crawlspace	Average
2	5	4508 D ST.	34.6069		Crawlspace	Average
2	5	410 45TH ST.	34.0805	✓	Crawlspace	Average
2	5	300 45TH ST.	28.0695		Crawlspace	Average
2	5	4500 C ST.	27.4958	✓	Crawlspace	Average
2	5	420 45TH ST.	32.3734	✓	Crawlspace	Average
2	5	4467 D ST.	32.2387		Crawlspace	Average
2	5	4501 D ST.	32		Crawlspace	Average
2	6	3300 PARK WAY	21.9656		Slab	Average
2	6	577 33RD ST.	22		Crawlspace	Average
2	6	570 34TH ST.	21.1883	Survey Returned	Crawlspace & Basement	Average
2	6	576 34TH ST.	22.0575		Crawlspace	Average
2	6	569 34TH ST.	22.339		Crawlspace	Average
2	6	577 34TH ST.	22.4859		Crawlspace	Average
2	6	568 35TH ST.	24.1344		Crawlspace	Average
2	6	576 35TH ST.	24.9616		Crawlspace	Average
2	6	569 35TH ST.	23.3812		Slab	Average
2	6	577 35TH ST.	25.3244		Crawlspace	Average
2	6	551 35TH ST.	21.3513	Survey Returned	Basement	Average
2	6	568 SANTA YNEZ WAY	22.7485		Crawlspace	Average
2	6	548 SANTA YNEZ WAY	23.259		Crawlspace	Average

Region 2 - Mitigation and Action Items

The following mitigation activities were considered to address the hazards found in Region 2. Table D.7 lists all considered mitigation activities and identifies appropriate mitigation activities for each repetitive loss area.

Table D.7. Region 2 Review of Alternative Approaches

Mitigation Activity	Region 2		
	Area 4	Area 5	Area 6
Prevention			
Continue Enforcement of Stormwater Regulations	X	X	X
Continue Drainage System Maintenance	X	X	X
Continue Enforcement of Floodplain Management Regulations	X	X	X
Property Protection			
Building Elevation			X
Relocation			
Improvement or Installation of Private Sumps			X
Sewer Backup Protection			X
Floodproofing			
Flood Insurance	X	X	X
Grading			
Sandbags		X	X
Elevate Utilities		X	X
Natural Resource Protection			
Natural Area Preservation			
Natural Area Restoration			
Emergency Services			
Hazard Threat Recognition	X	X	X
Hazard Warnings	X	X	X
Health & Safety Maintenance			X
Structural Projects			
Floodwalls		X	
Diversions			
Conveyance System Improvements (Structural)			
Detention Basin/Vault	X	X	X
Increased Pumping Capacity	X		X
Pipe Improvements		X	X
Public Information			
Outreach Projects		X	X
Map Information	X	X	X
Technical Assistance		X	X

Based on the complete analysis of this region the following action items were identified. These action items were selected based on community feedback, funding, current City activities, and data reports.

Table D.8. Region 2 Action Items

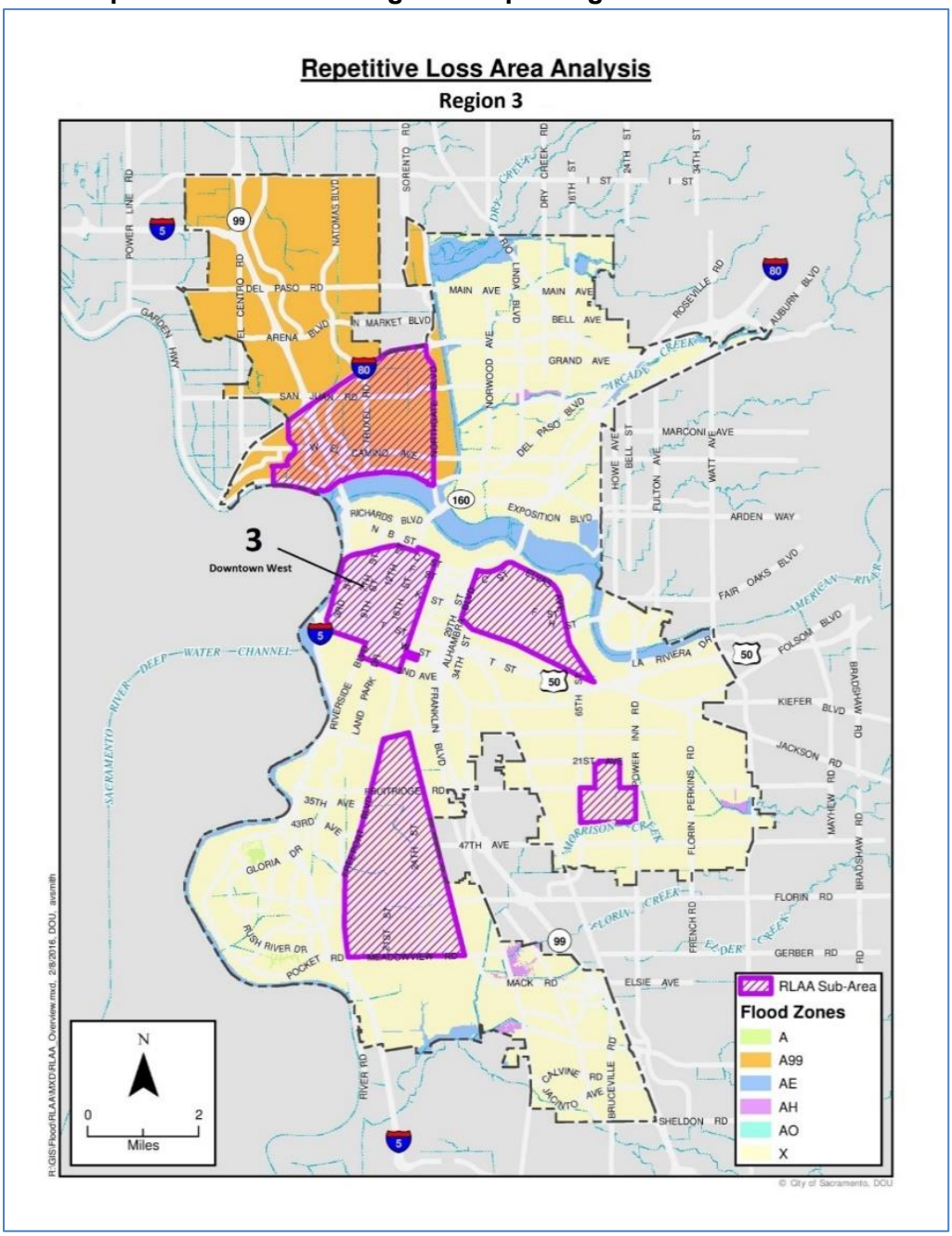
Action Item	Responsible Office	Schedule	Potential Funding
Conveyance system improvements identified in Drainage Master Plan for Basin 31	Department of Utilities	Complete	Capital Improvement Program
Elevate structures that are built at or below grade	Department of Utilities, Floodplain Management	Dependent of property owner interest and grant opportunities	Grants and Private Funding
Improvement and maintenance of private sumps	Property Owner	Ongoing	Private Funding
Sandbagging	Department of Utilities, Operations & Maintenance (supply only); Property Owner	During Flood Event	Department Funding (supply only)
Develop grant proposal for installation of sumps to protect garages and basements	Department of Utilities, Floodplain Management	Summer 2018	Department Funding
Sewer backup protection system	Property Owner	Dependent of property owner interest	Private Funding or Grants
Health & safety warnings and inspection of combined sewer system area	Department of Utilities, Operations & Maintenance	During/After Flood Event	Department Funding
Construction of a floodwall	Property Owner	Dependent of property owners interest	Private Funding or Grants
Provide neighborhood with storm/flood ready information - include emergency alert information	Department of Utilities, Floodplain Management	Annual	Department Funding
McKinley Water Vault Protect	Department of Utilities	2019	Capital Improvement Program
Enlarge critical pipes and construct detention basin in Drainage Basin 10	Department of Utilities	Dependent on Funding	Capital Improvement Program
Enforcement of stormwater regulations	Department of Utilities, Environmental & Regulatory Compliance	Ongoing	Department Funding
Drainage system maintenance	Department of Utilities, Operations & Maintenance	Ongoing	Department Funding

Enforcement of floodplain management regulations	Department of Utilities, Floodplain Management	Ongoing	Department Funding
Promotion of flood insurance	Department of Utilities, Floodplain Management	Ongoing	Department Funding
Hazard threat recognition system	Department of Utilities	Ongoing	Department Funding
Hazard warnings	Department of Utilities; Emergency Services; Public Information Office	During Flood Event	Department Funding
Flood/Map information hotline	Department of Utilities, Floodplain Management	Ongoing	Department Funding
Technical Assistance Visits	Department of Utilities, Floodplain Management	Ongoing	Department Funding

Region 3 – Downtown West

Region 3 of the City of Sacramento's RLAA is the western portion of Downtown Sacramento located just east of the Sacramento River. This area consists of several commercial buildings and high-rises as well as housing. The repetitive loss properties in this region are residential and the primary source of flooding in this area occurs due to an undersized Combined Sewer System that gets overwhelmed during large storms.

Figure D.4. Repetitive Loss Area Regions Map – Region 3



RLAA Region 3 – Area 7

Location: Broadway near St. Josephs Cemetery.

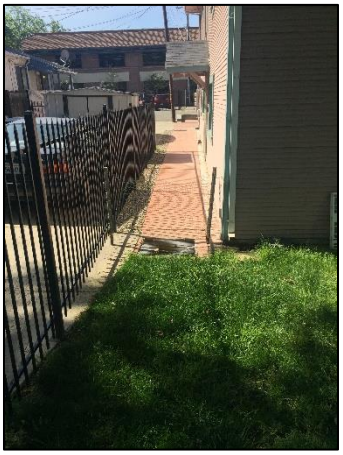
Number of Properties in Defined Area: 8

Number of RL Properties in Area: 1

Flood Zone: X-Zone

Dates of RL Flooding:
12/12/1995
1/22/1997
9/19/2004

Source of RL Flooding:
During moderately intense storms, flooding occurs in Area 7 due to the undersized conveyance system. Also, during times of high-level ground saturation ponding, uneven grading, and seepage cause additional flooding in resident's yards, garages, and basements. *Mitigation Recommendations*: Improvement of Combined Sewer System, floodproof basements, installation of sump pumps, sewer system backup protection, basement fill-in, property grading, on-site drainage to flow into main system, sandbags, utilities elevation, outreach on storm/flood preparedness, and flood insurance.



Left: On-site drainage added to aid in storm water drainage.
Right: A fractured basement wall caused by hydrostatic pressure. The cracks have led to water seeping into the basement.

RLAA Region 3 – Area 8

Location: Land Park Dr. & Broadway

Number of Properties in Defined Area: 33

Number of RL Properties in Area: 1

Flood Zone: X-Zone

Dates of RL Flooding:

1/10/1995
9/19/2004

Source of RL Flooding: During long duration storms, flooding occurs due to an undersized conveyance system. Many residents experience flooding in their yards, garages, and basements. Because of hills in the areas, there are garages located below grade and can be inundated by water during large storms. *Mitigation Recommendations*: Improvement of Combined Sewer System, floodproof basements, installation of sumps, sewer system backup protection, sandbags, elevate utilities, outreach on storm/flood preparedness, and flood insurance.

Example of debris in the storm drain. Leaf piles are allowed to be left on streets for City pick up. Many times, these leaves can be sweep down into the storm drain.

Example of a typical home in this area that wouldn't flood. Elevated on a crawlspace and the garage located in the back of the property. Some homes have basements.

RLAA Region 3 – Area 9

Location: N Street West of the Capital City Freeway

Number of Properties in Defined Area: 5

Number of RL Properties in Area: 1

Flood Zone: X - Zone

Dates of RL Flooding:
1/10/1995
1/25/1997
9/19/2004

Source of RL Flooding:
During long duration storms, flooding occurs due to an undersized conveyance system. This is a commercial area and many of the business entryways are not elevated. If street flooding overtops the curbs, water can flow into the structure causing structural damage. *Mitigation Recommendations*: Improvement of Combined Sewer System, sewer system backup protection, sandbags, elevate utilities, elevate buildings, outreach on storm/flood preparedness, and flood insurance.

The majority of the buildings in Area 9 do not have elevated entry ways

RLAA Region 3 – Area 10

Location: Q Street north of Southside Park

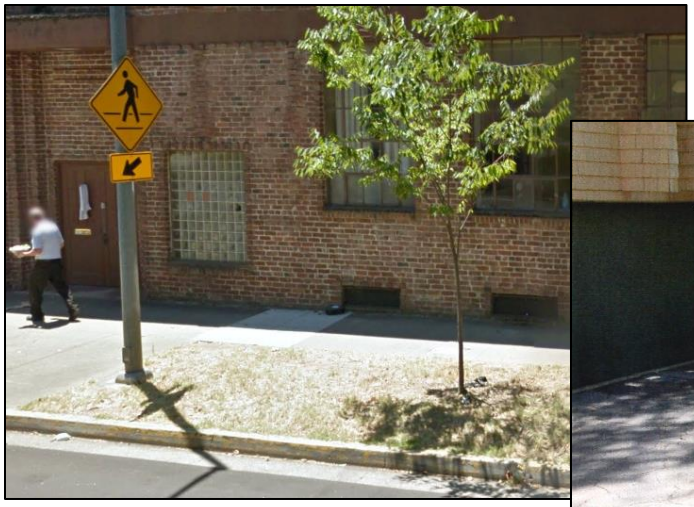
Number of Properties in Defined Area: 3

Number of RL Properties in Area: 1

Flood Zone: X-Zone

Dates of RL Flooding:
3/02/1995
1/25/1997
9/19/2004

Source of RL Flooding:
During long duration storms, flooding occurs due to an undersized conveyance system. This is an area that is commercial and residential. Only some of the structures are elevated. If street flooding overtops the curb, water can flow into the structure. There are also garages that are located below grade and can be inundated by water during large storms. *Mitigation Recommendations*: The Drainage Master Plan for Basin 52 recommends the improvement of critical pipes and the installation of a new vault and pumping plant to reduce flooding in the area. For individual property mitigation, using sandbags, installation of a temporary floodwall, elevate buildings. outreach on storm/flood preparedness, and flood insurance are recommended.



Basement windows and entry door are not elevated.

Garages are located below grade.

RLAA Region 3 – Area 11

Location: North of the Capitol Building by the Convention Center

Number of Properties in Defined Area: 3

Number of RL Properties in Area: 1

Flood Zone: X-Zone

Dates of RL Flooding:
1/09/1995
1/01/1997

Source of RL Flooding: During moderately intense storms, flooding occurs when stormwater flows into the underground parking structures. Some of structures are now equipped with temporary floodwalls and sumps. *Mitigation Recommendations*: Installation of temporary floodwalls, sumps, and sandbags.

Area 11 is located in the middle of downtown Sacramento. Many for entryways are elevated, but the parking structures are below ground.

Region 3 – Field Visits

Table D.9 provides field visit information collected for all structures located in Region 3's repetitive loss areas. Questionnaires were left at each building and City staff talked with residents and tenants in the area after a large storm in January and February of 2017 to help further understand flooding patterns in the area.

Table D.9. Region 3 Field Visit Summary

A	SA	Address	Elevation (NAVD 88) (FT.)	On-site Contact	Foundation	Condition
3	7	2222 X ST.	18.8002		Crawlspace	Average
3	7	2400 23RD ST.	18.664		Crawlspace	Average
3	7	2406 23RD ST.	18.6949		Crawlspace	Average
3	7	2300 X ST.	18.9901		Crawlspace	Average
3	7	2405 23RD ST.	18.9878	Survey Returned	Basement	Average
3	7	2409 23RD ST.	19.461		Parking Lot	Average
3	7	2415 23RD ST.	19.176		Parking Lot	Average
3	8	2601 14TH ST.	14.4933		Crawlspace	Average
3	8	2607 14TH ST.	14.3069		Crawlspace	Average
3	8	2613 14TH ST.	14.0657		Crawlspace	Average
3	8	2619 14TH ST.	14.2442		Crawlspace	Average
3	8	2625 14TH ST.	14.3534		Crawlspace	Average
3	8	2631 14TH ST.	14.3956	Survey Returned	Crawlspace & Basement	Average
3	8	2637 14TH ST.	14.6973		Crawlspace	Average
3	8	2643 14TH ST.	14.4287		Crawlspace	Average
3	8	2649 14TH ST.	15.0664		Crawlspace	Average
3	8	2655 14TH ST.	15.762		Crawlspace	Average
3	8	2661 14TH ST.	16.0271		Crawlspace	Average
3	8	2667 14TH ST.	16		Crawlspace	Average
3	8	2673 14TH ST.	16.1603		Crawlspace	Average
3	8	2679 14TH ST.	16.0504		Crawlspace	Average
3	8	2685 14TH ST.	16.0504		Crawlspace	Average
3	8	2691 14TH ST.	15.5941		Crawlspace	Average
3	8	2697 14TH ST.	16		Crawlspace	Average
3	8	2600 14TH ST.	14.0877		Crawlspace	Average
3	8	2610 14TH ST.	13.494		Crawlspace	Average
3	8	2616 14TH ST.	13.8971		Crawlspace	Average
3	8	2622 14TH ST.	14.0953		Crawlspace	Average

3	8	2628 14TH ST.	13.9878		Crawlspace	Average
3	8	2634 14TH ST.	14.5663		Crawlspace	Average
3	8	2640 14TH ST.	14.6859		Crawlspace	Average
3	8	2646 14TH ST.	14.0221		Crawlspace	Average
3	8	2652 14TH ST.	15.7929		Crawlspace	Average
3	8	2658 14TH ST.	15.7667		Crawlspace	Average
3	8	2664 14TH ST.	15.2215		Crawlspace	Average
3	8	2670 14TH ST.	16.4142		Crawlspace	Average
3	8	2676 14TH ST.	15.9408		Crawlspace	Average
3	8	2682 14TH ST.	15.9276		Crawlspace	Average
3	8	2688 14TH ST.	16.1479		Crawlspace	Average
3	8	2694 14TH ST.,	15.9632		Crawlspace	Average
3	9	2730 N ST.	21.5453		Slab	Average
3	9	2720 CAPITOL AVE.	21.7841		Parking Garage	Average
3	9	1404 28TH ST.	22		Slab	Average
3	9	1408 28TH ST.	21.8811		Parking Lot	Average
3	9	1401 28TH ST.	15.9403		Slab	Average
3	10	530 Q ST.	16		Slab	Average
3	10	600 Q ST.	18		Slab	Average
3	10	520 P ST.	16.9776		Slab	Average
3	10	512 Q ST.	16.0094		Slab	Average
3	11	1201 K ST.	23.2315	✓	Slab	Average
3	11	1131 K ST.	25.0543		Slab	Average
3	11	1130 K ST.	23.5534		Slab	Average
3	11	1205 L ST.	21.7848		Slab	Average
3	11	1209 K ST.	23.8316		Slab	Average

Region 3 - Mitigation and Action Items

The following mitigation activities were considered to address the hazards found in Region 3. Table D.10 lists the considered mitigation activities and identifies appropriate mitigation activities for each repetitive loss area.

Table D.10. Region 3 Review of Alternative Approaches

Mitigation Activity	Region 3				
	Area 7	Area 8	Area 9	Area 10	Area 11
Prevention					
Continue Enforcement of Stormwater Regulations	X	X	X	X	X
Continue Drainage System Maintenance	X	X	X	X	X

Continue Enforcement of Floodplain Management Regulations	X	X	X	X	X
Property Protection					
Building Elevation			X	X	
Relocation					
Improvement or Installation of Private Sumps	X	X			
Sewer Backup Protection	X	X	X		
Floodproofing	X	X			
Flood Insurance	X	X	X	X	X
Grading					
Sandbags	X	X	X	X	X
Elevate Utilities	X	X	X	X	
Natural Resource Protection					
Natural Area Preservation					
Natural Area Restoration					
Emergency Services					
Hazard Threat Recognition	X	X	X	X	X
Hazard Warnings	X	X	X	X	X
Health & Safety Maintenance	X				
Structural Projects					
Floodwalls				X	X
Diversions					
Conveyance System Improvements (Structural)					
Detention Basin/Vault				X	
Increased Pumping Capacity	X	X	X	X	
Pipe Improvements	X	X	X	X	
Public Information					
Outreach Projects	X	X		X	
Map Information	X	X	X	X	X
Technical Assistance	X	X	X	X	X

Based on the complete analysis of this region the following action items were identified. These action items were selected based on community feedback, funding, current City activities, and data reports.

Table D11. Region 3 Action Items

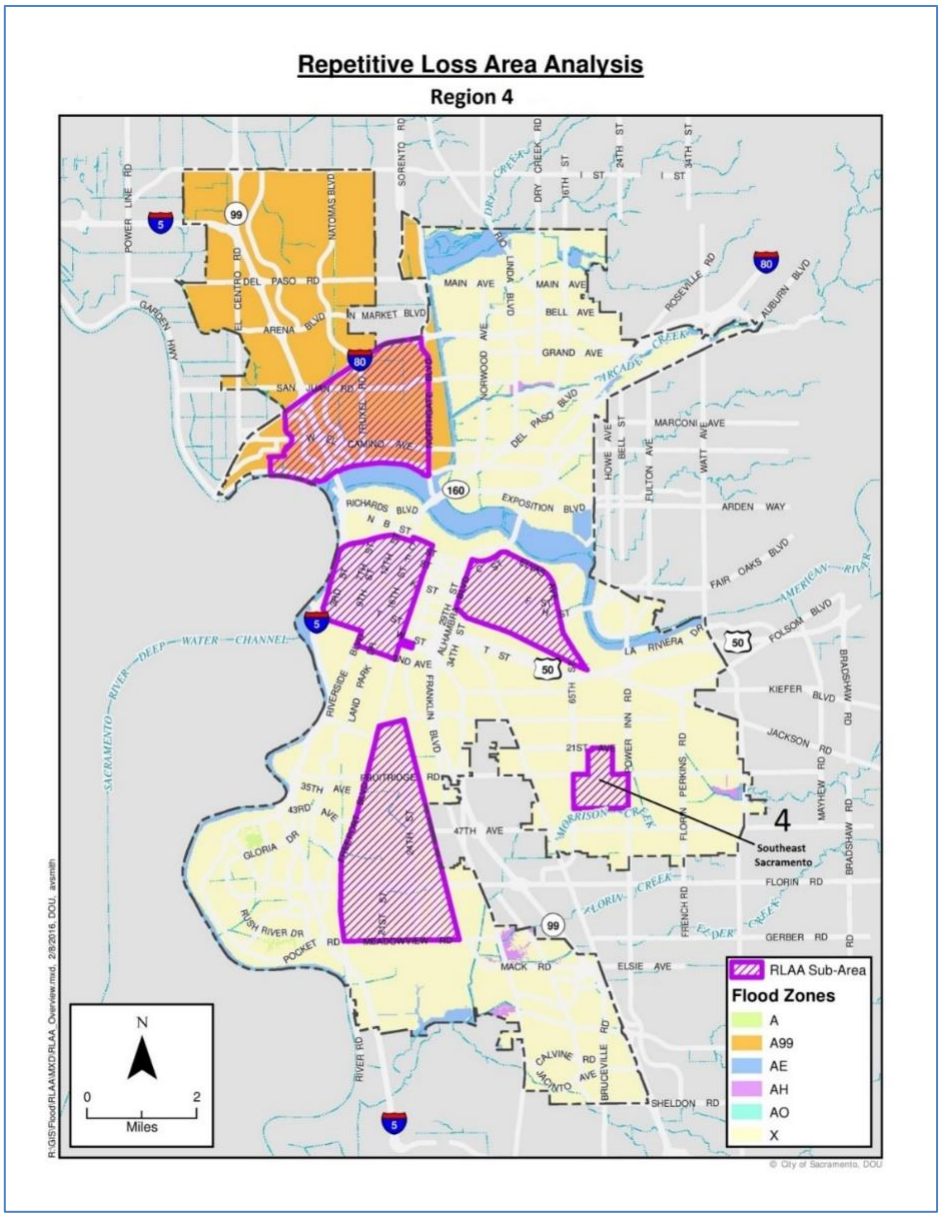
Action Item	Responsible Office	Schedule	Potential Funding
Elevate structures and utilities that are built at or below grade	Department of Utilities, Floodplain Management	Dependent of property owner interest and grant opportunities	Grants and Private Funding

Floodproofing	Department of Utilities, Floodplain Management	Dependent of property owner interest and grant opportunities	Grants and Private Funding
Improvement and maintenance of private sumps	Property Owner	Ongoing	Private Funding
Sandbagging	Department of Utilities, Operations & Maintenance (supply only); Property Owner	During Flood Event	Department Funding (supply only)
Develop grant proposal for installation of sumps to protect garages and basements	Department of Utilities, Floodplain Management	Summer 2018	Department Funding
Sewer backup protection system	Property Owner	Dependent of property owner interest	Private Funding or Grants
Health & safety warnings and inspection of combined sewer system area	Department of Utilities, Operations & Maintenance	During Flood Event	Department Funding
Provide neighborhoods with storm/flood ready information - include emergency alert information	Department of Utilities, Floodplain Management	Annual	Department Funding
Improvements identified in the Combined Sewer System Improvement Plan Update	Department of Utilities, Wastewater & Stormwater Engineering Program	Long-Term	Capital Improvement Program
Conveyance system improvements identified in Drainage Master Plan for Basin 52	Department of Utilities, Wastewater & Stormwater Engineering Program	Long-Term	Capital Improvement Program
Enforcement of stormwater regulations	Department of Utilities, Environmental & Regulatory Compliance	Ongoing	Department Funding
Drainage system maintenance	Department of Utilities, Operations & Maintenance	Ongoing	Department Funding
Enforcement of floodplain management regulations	Department of Utilities, Floodplain Management	Ongoing	Department Funding
Promotion of flood insurance	Department of Utilities, Floodplain Management	Ongoing	Department Funding
Hazard threat recognition system	Department of Utilities	Ongoing	Department Funding
Hazard warnings	Department of Utilities; Emergency Services; Public Information Office	During Flood Event	Department Funding
Flood/Map information hotline	Department of Utilities, Floodplain Management	Ongoing	Department Funding
Technical Assistance Visits	Department of Utilities, Floodplain Management	Ongoing	Department Funding

Region 4 – Southeast Sacramento

Region 4 of the RLAA is located in the Southeast portion of Sacramento's city limits. This entire region is comprised of residential properties located between 65th Avenue and Power Inn Road. There are two repetitive loss properties located in this region that have flooded mainly due to poor grading. Water from higher adjacent properties flows into low lying areas causing some homes to flood. A drainage study of Basin 96 concluded that limitations were discovered during observed flooding such as overland flow from one property to another and constraints such as fences and landscape features.

Figure D.5. Repetitive Loss Area Regions Map – Region 4



RLAA Region 4 – Area 12

Location: Fruitridge Road near Earl Warren Park

Number of Properties in Defined Area: 14

Number of RL Properties in area: 1

Flood Zone: X-Zone

Dates of RL flooding:
1/10/1995
12/21/1996

Source of RL Flooding:
This area is in a low-lying area of an undersized conveyance system which floods during heavy storms. *Mitigation Recommendations:* Elevation of buildings, elevation of utilities, sandbags, outreach on storm/flood preparedness, and flood insurance. Based on the Drainage Master Plan for Basin 96, the installation of a new detention basin at Wilkinson Street and 32nd Avenue will reduce flooding in the area.

Debris along the sidewalk that can contribute to backed up drains.

Debris obstructing the flow of water from exiting the property during storm events.

Drains filled with debris as a result of inadequate street cleaning and yard maintenance.

RLAA Region 4 –Area 13

Location: Near the 65th Street Expressway & Will C Wood Middle School.

Number of Properties in Defined Area: 12

Number of RL Properties in area: 1

Flood Zone: X-Zone

Dates of RL Flooding:
1/10/1995
1/22/1997
12/31/2005

Source of RL Flooding: Flooding occurs during heavy, long duration storms. The source of the flooding is from open land adjacent to the properties. *Mitigation Recommendations:* Grading on the property to redirect the flow of water, installation of drains to divert water, construct floodwall, sandbags, flood insurance, and outreach on storm/flood preparedness.

Structure built upon a crawlspace and HVAC unit is elevated as a flood proofing measures.

Ponding caused by landscaping obstructions.

Region 4 – Field Visits

Table D.12 provides field visit information collected for all structures located in Region 4's repetitive loss areas. Questionnaires were left at each building and City staff talked with residents and tenants in the area after a large storm in January and February of 2017 to help further understand flooding patterns in the area.

Table D.12. Region 4 Field Visit Summary

A	SA	Address	Elevation (NAVD 88) (FT.)	On-site Contact	Foundation	Condition
4	12	5501 PRISCILLA LN.	36		Slab	Average
4	12	5521 PRISCILLA LN.	36.0314		Slab	Average
4	12	5539 PRISCILLA LN.	36	✓	Slab	Average
4	12	5551 PRISCILLA LN.	36.175		Slab	Average
4	12	5571 PRISCILLA LN.	37.3519		Slab	Average
4	12	5500 PRISCILLA LN.	35.9806		Slab	Average
4	12	5520 PRISCILLA LN.	35.981		Slab	Average
4	12	5538 PRISCILLA LN.	35.9781		Slab	Average
4	12	5550 PRISCILLA LN.	35.9856		Slab	Average
4	12	5570 PRISCILLA LN.	37.1775		Slab	Average
4	12	5570 BRADFORD DR.	37.0798		Slab	Average
4	12	5550 BRADFORD DR.	36.4313		Slab	Average
4	12	5571 STANDISH RD.	36.8029		Slab	Average
4	12	5551 STANDISH RD.	36.4516		Slab	Average
4	13	5747 66TH ST.	36.7		Crawlspace	Average
4	13	5749 66TH ST.	34.509		Crawlspace	Average
4	13	5811 66TH ST.	34		Crawlspace	Average
4	13	6631 37TH AVE.	34.0371		Crawlspace	Average
4	13	6701 37TH AVE.	34		Crawlspace	Average
4	13	6711 37TH AVE.	34.04		Crawlspace	Average
4	13	6721 37TH AVE.	34.5299		Crawlspace	Average
4	13	6731 37TH AVE.	34.5429		Crawlspace	Average
4	13	6801 37TH AVE.	34.7181		Crawlspace	Average
4	13	6811 37TH AVE.	34.9229		Crawlspace	Average
4	13	6821 37TH AVE.	35.1515		Crawlspace	Average
4	13	6831 37TH AVE.	35.6577		Crawlspace	Average

Region 4 - Mitigation and Action Items

The following mitigation activities were considered to address the hazards found in Region 4. Table D.13 lists the considered mitigation activities and identifies appropriate mitigation activities for each repetitive loss area.

Table D.13. Region 4 Review of Alternative Approaches

Mitigation Activity	Region 4	
	Area 12	Area 13
Prevention		
Continued Enforcement of Stormwater Regulations	X	X
Continue Drainage System Maintenance	X	X
Continued Enforcement of Floodplain Management Regulations	X	X
Property Protection		
Building Elevation	X	
Relocation		
Improvement or Installation of Private Sumps		
Sewer Backup Protection		
Floodproofing		
Flood Insurance	X	X
Grading		X
Sandbags	X	X
Elevate Utilities	X	X
Natural Resource Protection		
Natural Area Preservation		
Natural Area Restoration		
Emergency Services		
Hazard Threat Recognition	X	X
Hazard Warnings	X	X
Health & Safety Maintenance		
Structural Projects		
Floodwalls		X
Diversions		X
Conveyance System Improvements (Structural)		
Detention Basin/Vault	X	
Increased Pumping Capacity		
Pipe Improvements		

Public Information		
Outreach Projects	X	X
Map Information	X	X
Technical Assistance	X	X

Based on the complete analysis of this region the following action items were identified. These action items were selected based on community feedback, funding, current City activities, and data reports.

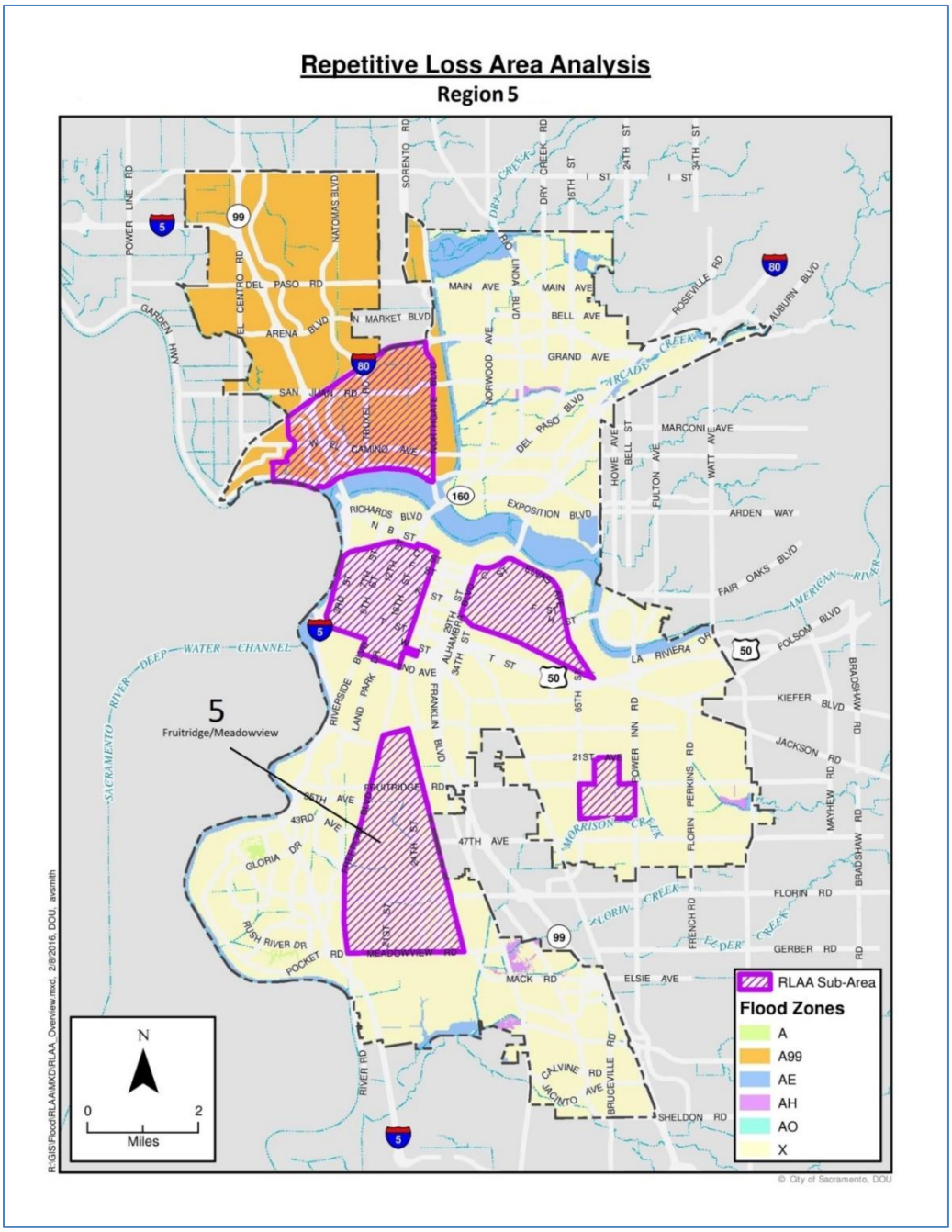
Table D14. Region 4 Action Items

Action Item	Responsible Office	Schedule	Potential Funding
Conveyance system improvements identified in Drainage Master Plan for Basin 96	Department of Utilities, Wastewater & Stormwater Engineering Program	Long-Term	Capital Improvement Program
Elevate structures that are built at or below grade	Department of Utilities, Floodplain Management	Dependent of property owner interest and grant opportunities	Grants and Private Funding
Sandbagging	Department of Utilities, Operations & Maintenance; Property Owner	During Flood Event	Department Funding
Elevate utilities that are at or below grade	Property Owner	Dependent of property owner interest	Private Funding
Grading or diversion to redirect the flow of stormwater to drainage system	Property Owner	Dependent of property owner interest	Private Funding
Enforcement of stormwater regulations	Department of Utilities, Environmental & Regulatory Compliance	Ongoing	Department Funding
Drainage system maintenance	Department of Utilities, Operations & Maintenance	Ongoing	Department Funding
Enforcement of floodplain management regulations	Department of Utilities, Floodplain Management	Ongoing	Department Funding
Promotion of flood insurance	Department of Utilities, Floodplain Management	Ongoing	Department Funding
Hazard threat recognition system	Department of Utilities	Ongoing	Department Funding
Hazard warnings	Department of Utilities; Emergency Services; Public Information Office	During Flood Event	Department Funding
Flood/Map information hotline	Department of Utilities, Floodplain Management	Ongoing	Department Funding
Technical Assistance Visits	Department of Utilities, Floodplain Management	Ongoing	Department Funding

Region 5 – Sutterville/Meadowview

Region 5 of the RLAA stretches from Sutterville Road down south to Meadowview Road. The majority of this area is residential; however, it does consist of a few shopping/corporate centers, Bing Maloney Gold Course, and the Sacramento Executive Airport. This entire region is classified by FEMA as a X-Zone with a low risk of flooding due to surrounding levees.

Figure D.6. Repetitive Loss Area Regions Map – Region



RLAA Region 5 – Area 14

Location: East of Mark Hopkins Park

Number of Properties in Defined Area: 10

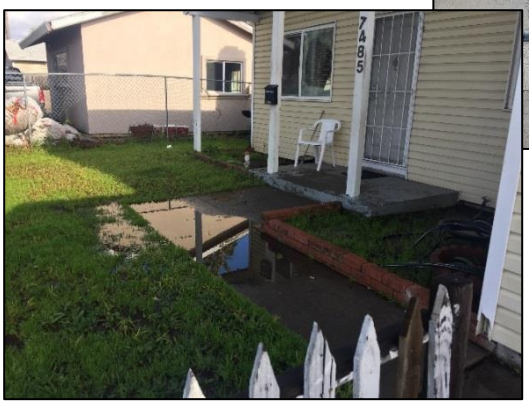
Number of RL Properties in Area: 1

Flood Zone: X-Zone

Dates of RL Flooding:
2/23/2000
12/31/2005

Source of RL Flooding: Based on the investigation performed by GEI Consultants it was discovered that flooding likely occurred due to undersized drainage system during long duration storm events. Discussions with the property owners confirmed this conclusion. *Mitigation Recommendations:* Based on Drainage Master Plan of Basin 33 and the technical analysis performed by GEI, the design and construct low-lying floodwall at entrances that are not elevated, increase pipe size in drainage system, additional drainage and grading of the property, sandbags, or elevation of the finished floor would be effective mitigation actions.

Drains installed after flooding to divert water back to the main drainage system.



Front yards were inundated by street flooding. Pictures were taken two days after a large storm.

RLAA Region 5 – Area 15

Location: 22nd Avenue near William Land Park

Number of Properties in Defined Area: 13

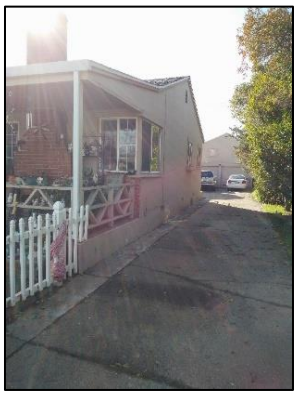
Number of RL Properties in Area: 4

Flood Zone: X-Zone

Dates of RL Flooding:

Property 1:	1/10/1995				
	2/07/1996				
	1/22/1997				
Property 2:	1/10/1995				
	1/22/1997				
Property 3:	1/10/1995	1/22/1997			
Property 4:	3/25/1989	1/12/1990	1/13/1993	1/09/1995	1/20/1996
	1/22/1997				

Source of RL Flooding: This area is located in a low-lying area with an undersized drainage conveyance system. Flooding occurs during moderate and long duration storms. *Mitigation Recommendations:* The Drainage Master Plan for Basin 26 recommends the construction of a detention basin and improvement of critical pipes to provide flood protection to the area. For individual property protection, flood insurance, sandbags, diversions, and elevation of utilities will provide additional flood protection.



Examples of floodproofing measure such as a crawlspace to the left and additional onsite drainage pipe to the right.

RLAA Region 5 – Area 16

Location: South of Florin Rd. near Luther Burbank High

Number of Properties in Defined Area: 5

Number of RL Properties in Area: 1

Flood Zone: X-Zone

Dates of RL Flooding:
1/10/1995
1/27/1997

Source of RL Flooding: This area is in a low-lying area with an undersized drainage conveyance system. Flooding occurs during moderately intense and long duration storms. *Mitigation Recommendations:* Elevate garages, insure proper onsite drainage to allow water to flow to storm drains, elevate utilities, sandbags, storm readiness outreach, and flood insurance.

Crawlspace utilized as a floodproofing measure to prevent flooding in the structure.

Standing water after a large January storm unable to drain properly.

RLAA Region 5 – Area 17

Location: Neighborhood of 68th Ave. & Henrietta Dr.

Number of Properties in Defined Area: 13

Number of RL Properties in Area: 1

Flood Zone: X-Zone

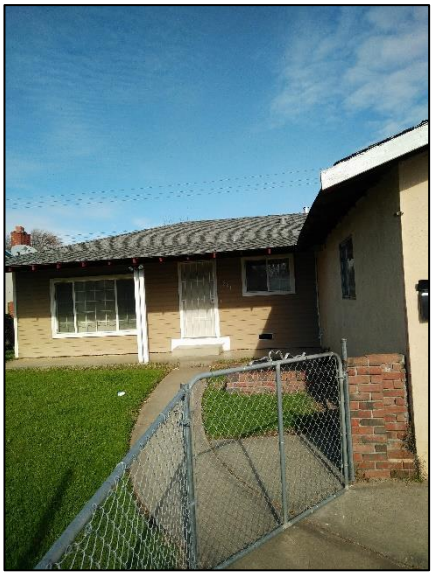
Dates of RL Flooding:

1/10/1995 2/26/2000

Source of RL Flooding: Based on GEI Consultants' investigation the most logical reason for flooding is unique to specific property drainage within the area. It is believed that an addition of a patio structure in the back of the property reduced the ability of the property to drain properly. *Mitigation Recommendations:* For area flood protection, Drainage Master Plan for Basin 108 recommends the upsize of pipes and the addition of a detention basin. Residents can add diversion to promote the flow of water to the main drainage system, purchase flood insurance, and use sandbags to mitigate flooding.

Left: Elevated home with landscaping assisting in on-site drainage.

Right: Elevated structure with a crawlspace below as a flood protection method.



RLAA Region 5 – Area 18

Location: Florin Road, Northeast of William Chorley Park

Number of Properties in Defined Area: 14

Number of RL Properties in Area: 1

Flood Zone: X-Zone

Dates of RL Flooding:
1/25/1997
12/23/2004

Source of RL Flooding:
Based on GEI Consultants' investigation the flooding in this area is caused by undersized drain pipes that are overwhelmed during long duration storms. Street flooding can overtop the curbs and begin to flood yards and garages. *Mitigation Recommendations:* The Drainage Master Plan for Basin 22 recommends critical pipe improvements and the addition of a detention basin to provide adequate flood protection to the area. Other mitigation options are flood preparedness education, elevate utilities, flood insurance, and sandbags.

Left: Example of flooded yard from January 2017 storms.

Below: Drain clogged with debris resulting in a slower draining process.

Example of utilities located on the roof. Many of the homes in this area have HVAC unit located on the roof.

Region 5 – Field Visit

Table D.15 provides field visit information collected for all structures located in Region 5's repetitive loss areas. Questionnaires were left at each building and City staff talked with residents and tenants in the area after a large storm in January and February of 2017 to help further understand flooding patterns in the area.

Table D.15. Region 5 Field Visit Summary

A	SA	Address	Elevation (NAVD 88) (FT.)	On-site Contact	Foundation	Condition
5	14	7480 24TH ST.	17.2455		Slab	Average
5	14	7481 24TH ST.	17.922		Slab	Average
5	14	7485 24TH ST.	17.6427		Slab	Average
5	14	7489 24TH ST.	17.9666		Slab	Average
5	14	7493 24TH ST.	17.9146	✓	Slab	Average
5	14	7497 24TH ST.	17.9769		Slab	Average
5	14	7501 24TH ST.	17.5133		Slab	Average
5	14	2536 MATSON DR.	17.2175		Slab	Average
5	14	2352 MATSON DR.	17.3739		Slab	Average
5	14	2348 MATSON DR.	17.1415		Slab	Average
5	15	2030 20TH AVE.	21.4324		Slab	Average
5	15	2024 20TH AVE.	22		Slab	Average
5	15	2044 20TH AVE.	21.8251		Crawlspace	Average
5	15	2036 20TH AVE.	21.2717		Slab	Average
5	15	2040 20TH AVE.	21.5534		Slab	Average
5	15	4305 FREEPORT BLVD.	21.9972		Slab	Average
5	15	4301 FREEPORT BLVD.	21.8313		Slab	Average
5	15	4227 FREEPORT BLVD.	22.0666	✓	Slab	Average
5	15	4228 LOTUS AVE.	21.9853	✓	Slab	Average
5	15	2041 20TH AVE.	22.0068		Crawlspace	Average
5	16	7274 ALCEDO CIR.	18.3579		Slab	Average
5	16	7278 ALCEDO CIR.	18		Slab	Average
5	16	7282 ALCEDO CIR.	18.0525		Slab	Average
5	16	7286 ALCEDO CIR.	18.2301		Slab	Average
5	16	7290 ALCEDO CIR.	18.1318		Slab	Average
5	16	7306 WINNET WAY	18.2997		Slab	Average

5	16	7305 WINNET WAY	17.982		Slab	Average
5	17	1943 68TH AVE.	18.5045		Slab	Average
5	17	1957 68TH AVE.	18.5664	✓	Slab	Average
5	17	1971 68TH AVE.	19.0716		Slab	Average
5	17	1928 68TH AVE.	19.5324		Slab	Average
5	17	1942 68TH AVE.	19.4373		Slab	Average
5	17	1956 68TH AVE.	19.3207		Slab	Average
5	17	1970 68TH AVE.	18.8617	✓	Slab	Average
5	17	1984 68TH AVE.	18.7234		Slab	Average
5	17	1933 ONEIL WAY	19.6116		Crawlspace	Average
5	17	1949 ONEIL WAY	19.6163		Slab	Average
5	17	1965 ONEIL WAY	19.4906		Slab	Average
5	17	1981 ONEIL WAY	19.9296		Slab	Average
5	17	2001 ONEIL WAY	19.5157		Slab	Average
5	18	2000 48TH AVE.	16.6593		Crawlspace	Average
5	18	2010 48TH AVE.	15.8566		Crawlspace	Average
5	18	2020 48TH AVE.	16		Crawlspace	Average
5	18	2030 48TH AVE.	16.0595	✓	Crawlspace	Average
5	18	2040 48TH AVE.	16.6144		Crawlspace	Average
5	18	2050 48TH AVE.	16.5618		Crawlspace	Average
5	18	2060 48TH AVE.	16.8266		Crawlspace	Average
5	18	2061 48TH AVE.	16.5033		Crawlspace	Average
5	18	2051 48TH AVE	16.8231		Crawlspace	Average
5	18	2041 48TH AVE.	17.0777		Crawlspace	Average
5	18	2031 48TH AVE.	16.5716		Crawlspace	Average
5	18	2021 48TH AVE.	16.4975		Crawlspace	Average
5	18	2011 48TH AVE.	16.6779		Crawlspace	Average
5	18	2001 48TH AVE.	16.1945		Crawlspace	Average

Region 5 - Mitigation and Action Items

The following mitigation activities were considered to address the hazards found in Region 5. Table D.16 lists the considered mitigation activities and identifies appropriate mitigation activities for each repetitive loss area.

Table D.16. Region 5 Review of Alternative Approaches

Mitigation Activity	Region 5				
	Area 14	Area 15	Area 16	Area 17	Area 18
Prevention					
Continue Enforcement of Stormwater Regulations	X	X	X	X	X
Continue Drainage System Maintenance	X	X	X	X	X
Continue Enforcement of Floodplain Management Regulations	X	X	X	X	X
Property Protection					
Building Elevation	X		X		
Relocation					
Improvement or Installation of Private Sumps					
Sewer Backup Protection					
Floodproofing					
Flood Insurance	X	X	X	X	X
Grading	X			X	X
Sandbags	X	X	X	X	X
Elevate Utilities		X	X	X	X
Natural Resource Protection					
Natural Area Preservation					
Natural Area Restoration					
Emergency Services					
Hazard Threat Recognition	X	X	X	X	X
Hazard Warnings	X	X	X	X	X
Health & Safety Maintenance					
Structural Projects					
Floodwalls	X				
Diversions	X	X		X	X
Conveyance System Improvements (Structural)					
Detention Basin/Vault				X	X
Increased Pumping Capacity					
Pipe Improvements	X	X		X	X
Public Information					
Outreach Projects	X	X	X	X	X
Map Information	X	X	X	X	X
Technical Assistance	X	X	X	X	X

Based on the complete analysis of this region the following action items were identified. These action items were selected based on community feedback, funding, current City activities, and data reports.

Table D14. Region 5 Action Items

Action Item	Responsible Office	Schedule	Potential Funding
Conveyance system improvements identified in Drainage Master Plan for Basin 33	Department of Utilities, Wastewater & Stormwater Engineering Program	Long-Term	Capital Improvement Program
Conveyance system improvements identified in Drainage Master Plan for Basin 26	Department of Utilities, Wastewater & Stormwater Engineering Program	Long-Term	Capital Improvement Program
Diversion identified in Drainage Master Plan for Basin 108	Department of Utilities, Wastewater & Stormwater Engineering Program	Long-Term	Capital Improvement Program
Elevate structures that are built at or below grade	Department of Utilities, Floodplain Management	Dependent of property owner interest and grant opportunities	Grants and Private Funding
Sandbagging	Department of Utilities, Operations & Maintenance; Property Owner	During Flood Event	Department Funding
Grading or diversion to redirect the flow of stormwater to drainage system	Property Owner	Dependent of property owner interest	Private Funding
Construction of a floodwall	Property Owner	Dependent of property owner interest	Private Funding or Grants
Elevate utilities that are at or below grade	Property Owner	Dependent of property owner interest	Private Funding
Provide neighborhoods with storm/flood ready information - include emergency alert information	Department of Utilities, Floodplain Management	Annual	Department Funding
Conveyance system improvements identified in Drainage Master Plan for Basin 22	Department of Utilities, Wastewater & Stormwater Engineering Program	Long-Term	Capital Improvement Program

Conveyance system improvements identified in Drainage Master Plan for Basin 108	Department of Utilities, Wastewater & Stormwater Engineering Program	Long-Term	Capital Improvement Program
Enforcement of stormwater regulations	Department of Utilities, Environmental & Regulatory Compliance	Ongoing	Department Funding
Drainage system maintenance	Department of Utilities, Operations & Maintenance	Ongoing	Department Funding
Enforcement of floodplain management regulations	Department of Utilities, Floodplain Management	Ongoing	Department Funding
Promotion of flood insurance	Department of Utilities, Floodplain Management	Ongoing	Department Funding
Hazard threat recognition system	Department of Utilities	Ongoing	Department Funding
Hazard warnings	Department of Utilities; Emergency Services; Public Information Office	During Flood Event	Department Funding
Flood/Map information hotline	Department of Utilities, Floodplain Management	Ongoing	Department Funding
Technical Assistance Visits	Department of Utilities, Floodplain Management	Ongoing	Department Funding

Repetitive Loss Area Analysis Summary

The City of Sacramento is highly vulnerable to localized flooding. The City local drainage system services approximately 100 square miles and is handled by a combination of gravity and lift stations which a total of approximately some 140 storm drainage basins. Since the City is typically lower than the elevated rivers by as much as 5-25 feet, the majority of the local drainage must be pumped into the rivers. The City operates 105 sumps and pumps to keep the drainage pumped down.

It is conceivable that extremely heavy local rain storms can result in badly flooded streets and flooding of homes in some areas. It is estimated that such situations would be brought about by a slow-moving high-intensity rainstorm over several hours reaching a peak intensity of ½" per hour later in the storm event. Any higher intensity storm event will cause localized flooding problems.

The majority of the structures in the city's repetitive loss areas are impacted by local drainage flooding. The identified structural projects related to drainage improvements will result in long-term flood protection for affected areas. However, most of these projects must wait for funding to proceed.

It is recommended that property owners prepare themselves at the beginning of each rainy season, typically October. The City suggests having sandbag materials on hand, clear debris of storm drains on a regular basis and have backup generators for sumps.

The City's mitigation activities that are recommended within this report include increased outreach on hazard awareness and warning. Additional efforts in repetitive loss area to insure flood preparedness. Finally, the development of an ongoing program to match residents who would like to move forward with a structural or property protection mitigation activities with possible grant funding.

Through the collaborative efforts of the City and residents, the repetitive loss areas within Sacramento can become better prepared, more protected, and resilient to localized flooding.

Field Visit Notes

Field visits were conducted for all 18 identified repetitive loss areas. During the field visits, staff collected general information and spoke with residents about flooding issues experienced in their neighborhood. Figure D.7 are the notes taken during the field visits.

Figure D.7. Field Visit Notes

A	SA	Address	Deliv.	Spoke to Owner	Foundation	Condition	Notes
1	1	3485 BINGHAMPTON DR., SACRAMENTO, CA 95834	✓		SLAB ✓		
1	1	3491 BINGHAMPTON DR., SACRAMENTO, CA 95834	✓		SLAB ✓		
1	1	3497 BINGHAMPTON DR., SACRAMENTO, CA 95834	✓		SLAB ✓		
1	1	3503 BINGHAMPTON DR., SACRAMENTO, CA 95834	✓		SLAB ✓		
1	1	3509 BINGHAMPTON DR., SACRAMENTO, CA 95834	✓		SLAB ✓		
1	1	3515 BINGHAMPTON DR., SACRAMENTO, CA 95834	✓		SLAB ✓		
1	1	3521 BINGHAMPTON DR., SACRAMENTO, CA 95834	✓		SLAB ✓		
1	1	3527 BINGHAMPTON DR., SACRAMENTO, CA 95834	✓		SLAB ✓		
1	2	1320 OAK NOB WAY, SACRAMENTO, CA 95833	✓		SLAB ✓		
1	2	1330 OAK NOB WAY, SACRAMENTO, CA 95833	✓		SLAB ✓		
1	2	1340 OAK NOB WAY, SACRAMENTO, CA 95833	✓		SLAB ✓		
1	2	1350 OAK NOB WAY, SACRAMENTO, CA 95833	✓		SLAB ✓		
1	2	1360 OAK NOB WAY, SACRAMENTO, CA 95833	✓		SLAB ✓		
1	2	1370 OAK NOB WAY, SACRAMENTO, CA 95833	✓		SLAB ✓		
1	2	1380 OAK NOB WAY, SACRAMENTO, CA 95833	✓		SLAB ✓		
1	2	1390 OAK NOB WAY, SACRAMENTO, CA 95833	✓		SLAB ✓		
1	2	1400 OAK NOB WAY, SACRAMENTO, CA 95833	✓		SLAB ✓		
1	2	1410 OAK NOB WAY, SACRAMENTO, CA 95833	✓		SLAB ✓		
1	2	1420 OAK NOB WAY, SACRAMENTO, CA 95833	✓		SLAB ✓		
1	2	1430 OAK NOB WAY, SACRAMENTO, CA 95833	✓		SLAB ✓		
1	2	1440 OAK NOB WAY, SACRAMENTO, CA 95833	✓		SLAB ✓		
1	2	1450 OAK NOB WAY, SACRAMENTO, CA 95833	✓		SLAB ✓		
1	2	1431 WOODSIDE GLEN WAY, SACRAMENTO, CA 95833	NO	✓	SLAB ✓		Did not exp flooding - elderly
1	2	1423 WOODSIDE GLEN WAY, SACRAMENTO, CA 95833	✓		SLAB ✓		
1	2	1415 WOODSIDE GLEN WAY, SACRAMENTO, CA 95833	✓		SLAB ✓		
1	2	1407 WOODSIDE GLEN WAY, SACRAMENTO, CA 95833	✓		SLAB ✓		
1	2	1399 WOODSIDE GLEN WAY, SACRAMENTO, CA 95833	✓		SLAB ✓		
1	2	1391 WOODSIDE GLEN WAY, SACRAMENTO, CA 95833	✓		SLAB ✓		
1	2	1383 WOODSIDE GLEN WAY, SACRAMENTO, CA 95833	✓		SLAB ✓		
1	2	1375 WOODSIDE GLEN WAY, SACRAMENTO, CA 95833	✓		SLAB ✓		
1	2	1367 WOODSIDE GLEN WAY, SACRAMENTO, CA 95833	✓		SLAB ✓		
1	2	1359 WOODSIDE GLEN WAY, SACRAMENTO, CA 95833	✓		SLAB ✓		

1	2	1351 WOODSIDE GLEN WAY, SACRAMENTO, CA 95833	✓		SLAB ✓		
1	2	1343 WOODSIDE GLEN WAY, SACRAMENTO, CA 95833	✓		SLAB ✓		
1	2	1335 WOODSIDE GLEN WAY, SACRAMENTO, CA 95833	✓		SLAB ✓		~~Not at this time~~
1	3	1331 GARDEN HWY, SACRAMENTO, CA 95833	✓	Yes	SLAB elevated on columns 1st floor experienced flooding		run by same Group
1	3	1321 GARDEN HWY, SACRAMENTO, CA 95833	✓		SLAB		
1	3	1383 GARDEN HWY #200, SACRAMENTO, CA 95833	mail		ELEV. SLAB ON SUPPORTS		
2	4	6661 ELVAS AVE., SACRAMENTO, CA 95819	✓		SLAB ✓		
2	4	6667 ELVAS AVE., SACRAMENTO, CA 95819	✓		SLAB ✓		
2	4	6801 ELVAS AVE., SACRAMENTO, CA 95819	✓		SLAB ✓		
2	4	6601 ELVAS AVE., SACRAMENTO, CA 95819	✓		SLAB ✓		
2	5	421 45TH ST., SACRAMENTO, CA 95819	✓		CRAWLSPACE ✓		
2	5	411 45TH ST., SACRAMENTO, CA 95819	✓		CRAWLSPACE ✓		
2	5	4508 D ST., SACRAMENTO, CA 95819	✓		CRAWLSPACE ✓		
2	5	410 45TH ST., SACRAMENTO, CA 95819	✓		↓		
2	5	300 45TH ST., SACRAMENTO, CA 95819	✓		crawlspace		
2	5	450~~1~~C ST., SACRAMENTO, CA 95819	✓		Crawlspace		retaining wall B st.
2	5	420 45TH ST., SACRAMENTO, CA 95819	✓		Crawlspace		
2	5	4467 D ST., SACRAMENTO, CA 95819	✓		Crawlspace		
2	5	4501 D ST., SACRAMENTO, CA 95819	✓		Crawl space		
2	6	3300 PARK WAY, SACRAMENTO, CA 95816	✓		SLAB Crawl	is a slab	
2	6	577 33RD ST., SACRAMENTO, CA 95816	✓		SLAB spaces		
2	6	570 34TH ST., SACRAMENTO, CA 95816	✓		SLAB (all)		
2	6	576 34TH ST., SACRAMENTO, CA 95816	✓		SLAB		
2	6	569 34TH ST., SACRAMENTO, CA 95816	✓		SLAB		
2	6	577 34TH ST., SACRAMENTO, CA 95816	✓		SLAB		
2	6	568 35TH ST., SACRAMENTO, CA 95816	✓		SLAB		
2	6	576 35TH ST., SACRAMENTO, CA 95816	✓		SLAB		
2	6	569 35TH ST., SACRAMENTO, CA 95816	✓		SLAB slab		~~SB~~
2	6	577 35TH ST., SACRAMENTO, CA 95816	✓		SLAB		
2	6	551 35TH ST., SACRAMENTO, CA 95816	✓		SLAB		
2	6	568 SANTA YNEZ WAY, SACRAMENTO, CA 95816	✓		SLAB		
2	6	548 SANTA YNEZ WAY, SACRAMENTO, CA 95816	✓		SLAB		

mail #7

3	7	2222 X ST., SACRAMENTO, CA 95818			SLAB		
3	7	2400 23RD ST., SACRAMENTO, CA 95818					Elevated HVAC
3	7	2406 23RD ST., SACRAMENTO, CA 95818					Units
3	7	2300 X ST., SACRAMENTO, CA 95818			CRAWLSPACE ✓		
3	7	2405 23RD ST., SACRAMENTO, CA 95818			~~CRAWLSPACE~~ ✓		Basement
3	7	2409 23RD ST., SACRAMENTO, CA 95818			~~CRAWLSPACE~~	Parking lot	
3	7	2415 23RD ST., SACRAMENTO, CA 95818			~~CRAWLSPACE~~	Parking lot	
3	8	2601 14TH ST., SACRAMENTO, CA 95818	✓		CRAWLSPACE ✓	all	all homes in the area
3	8	2607 14TH ST., SACRAMENTO, CA 95818	✓		CRAWLSPACE ✓		are on crawlspaces
3	8	2613 14TH ST., SACRAMENTO, CA 95818	✓		CRAWLSPACE ✓		Do not understand why
3	8	2619 14TH ST., SACRAMENTO, CA 95818	✓		CRAWLSPACE ✓		flooding occurs. Could
3	8	2625 14TH ST., SACRAMENTO, CA 95818	✓		CRAWLSPACE ✓		be clogged drains
3	8	2631 14TH ST., SACRAMENTO, CA 95818	✓		CRAWLSPACE ✓		during a heavy storm
3	8	2637 14TH ST., SACRAMENTO, CA 95818	✓		CRAWLSPACE ✓		due to leaves
3	8	2643 14TH ST., SACRAMENTO, CA 95818	✓		CRAWLSPACE ✓		from trees
3	8	2649 14TH ST., SACRAMENTO, CA 95818	✓		CRAWLSPACE ✓		(all of area 8)
3	8	2655 14TH ST., SACRAMENTO, CA 95818	✓		CRAWLSPACE ✓		
3	8	2661 14TH ST., SACRAMENTO, CA 95818	✓		CRAWLSPACE ✓		
3	8	2667 14TH ST., SACRAMENTO, CA 95818	✓		CRAWLSPACE ✓		
3	8	2673 14TH ST., SACRAMENTO, CA 95818	✓		CRAWLSPACE ✓		
3	8	2679 14TH ST., SACRAMENTO, CA 95818	✓		CRAWLSPACE ✓		
3	8	2685 14TH ST., SACRAMENTO, CA 95818	✓		CRAWLSPACE ✓		
3	8	2691 14TH ST., SACRAMENTO, CA 95818	✓		CRAWLSPACE ✓		
3	8	2697 14TH ST., SACRAMENTO, CA 95818	✓		CRAWLSPACE ✓		
3	8	2600 14TH ST., SACRAMENTO, CA 95818	✓		CRAWLSPACE ✓		
3	8	2610 14TH ST., SACRAMENTO, CA 95818	✓		CRAWLSPACE ✓		
3	8	2616 14TH ST., SACRAMENTO, CA 95818	✓		CRAWLSPACE ✓		
3	8	2622 14TH ST., SACRAMENTO, CA 95818	✓		CRAWLSPACE ✓		
3	8	2628 14TH ST., SACRAMENTO, CA 95818	✓		CRAWLSPACE ✓		
3	8	2634 14TH ST., SACRAMENTO, CA 95818	✓		CRAWLSPACE ✓		
3	8	2640 14TH ST., SACRAMENTO, CA 95818	✓		CRAWLSPACE ✓		
3	8	2646 14TH ST., SACRAMENTO, CA 95818	✓		CRAWLSPACE ✓		
3	8	2652 14TH ST., SACRAMENTO, CA 95818	✓		CRAWLSPACE ✓		
3	8	2658 14TH ST., SACRAMENTO, CA 95818	✓		CRAWLSPACE ✓		

3	8	2664 14TH ST., SACRAMENTO, CA 95818	✓		CRAWLSPACE ✓		
3	8	2670 14TH ST., SACRAMENTO, CA 95818	✓		CRAWLSPACE ✓		
3	8	2676 14TH ST., SACRAMENTO, CA 95818	✓		CRAWLSPACE ✓		
3	8	2682 14TH ST., SACRAMENTO, CA 95818	✓		CRAWLSPACE ✓		
3	8	2688 14TH ST., SACRAMENTO, CA 95818	✓		CRAWLSPACE ✓		
3	8	2694 14TH ST., SACRAMENTO, CA 95818	✓		CRAWLSPACE ✓		
3	9	2730 N ST., SACRAMENTO, CA 95816			SLAB		
3	9	2720 CAPITOL AVE., SACRAMENTO, CA 95816			Parking Garage		
3	9	1404 28TH ST., SACRAMENTO, CA 95816			Slab		
3	9	1408 28TH ST., SACRAMENTO, CA 95816			~~slab~~ Parking lot		
3	9	1401 28TH ST., SACRAMENTO, CA 95816			Slab		
3	10	530 Q ST., SACRAMENTO, CA 95811			SLAB		
3	10	600 1 ST., SACRAMENTO, CA 95811			SLAB		
3	10	520 P ST., SACRAMENTO, CA 95811			SLAB		
3	10	512 Q ST., SACRAMENTO, CA 95811			SLAB		
3	11	1201 K ST., SACRAMENTO, CA 95814			SLAB		appears to be on
3	11	1131 K ST., SACRAMENTO, CA 95814			SLAB		elevated slab
3	11	1130 K ST., SACRAMENTO, CA 95814			SLAB		Multi story
3	11	1205 K ST., SACRAMENTO, CA 95814			SLAB		complex
3	11	1209 K ST., SACRAMENTO, CA 95814			SLAB		
4	12	5501 PRISCILLA LN., SACRAMENTO, CA 95820	✓		SLAB		
4	12	5521 PRISCILLA LN., SACRAMENTO, CA 95820	✓		SLAB		
4	12	5539 PRISCILLA LN., SACRAMENTO, CA 95820	✓	✓	SLAB	—	Spoke to owner - said
4	12	5551 PRISCILLA LN., SACRAMENTO, CA 95820	✓		SLAB		Drains out side his home
4	12	5571 PRISCILLA LN., SACRAMENTO, CA 95820	✓		SLAB		are always clogging
4	12	5500 PRISCILLA LN., SACRAMENTO, CA 95820	✓		SLAB		constant cleaning
4	12	5520 PRISCILLA LN., SACRAMENTO, CA 95820	✓		SLAB		
4	12	5538 PRISCILLA LN., SACRAMENTO, CA 95820	✓		SLAB		
4	12	5550 PRISCILLA LN., SACRAMENTO, CA 95820	✓		SLAB		
4	12	5570 PRISCILLA LN., SACRAMENTO, CA 95820	✓		SLAB		
4	12	5570 BRADFORD DR., SACRAMENTO, CA 95820	✓		SLAB		
4	12	5550 BRADFORD DR., SACRAMENTO, CA 95820	✓		SLAB		
4	12	5571 STANDISH RD., SACRAMENTO, CA 95820	✓		SLAB		
4	12	5551 STANDISH RD., SACRAMENTO, CA 95820	✓		SLAB		

A	SA	Address	Deliv.	Spoke to Owner	Foundation	Condition	Notes
4	13	5747 66TH ST., SACRAMENTO, CA 95824	✓		Crawlspace		
4	13	5749 66TH ST., SACRAMENTO, CA 95824	✓				
4	13	5811 66TH ST., SACRAMENTO, CA 95824	✓				
4	13	6631 37TH AVE., SACRAMENTO, CA 95824	✓		Slab		
4	13	6701 37TH AVE., SACRAMENTO, CA 95824	✓		Slab		
4	13	6711 37TH AVE., SACRAMENTO, CA 95824	X		Slab		
4	13	6721 37TH AVE., SACRAMENTO, CA 95824	X		Slab		
4	13	6731 37TH AVE., SACRAMENTO, CA 95824	X		Slab		
4	13	6801 37TH AVE., SACRAMENTO, CA 95824	X		Slab		
4	13	6811 37TH AVE., SACRAMENTO, CA 95824	✓		Slab		
4	13	6821 37TH AVE., SACRAMENTO, CA 95824	✓		Slab		
4	13	6831 37TH AVE., SACRAMENTO, CA 95824	✓		Slab		
5	14	7480 24TH ST., SACRAMENTO, CA 95822	✓		Slab ✓		
5	14	7481 24TH ST., SACRAMENTO, CA 95822	✓		Slab ✓		
5	14	7485 24TH ST., SACRAMENTO, CA 95822	✓		Slab ✓		
5	14	7489 24TH ST., SACRAMENTO, CA 95822	✓		Slab ✓		
5	14	7493 24TH ST., SACRAMENTO, CA 95822	✓	✓	Slab ✓	✓	Front Yard exp. Flooding
5	14	7497 24TH ST., SACRAMENTO, CA 95822	✓		Slab ✓	Ply wood	on the wall - in front
5	14	7501 24TH ST., SACRAMENTO, CA 95822	✓		Slab ✓	Gone	Front Yard very wet
5	14	2536 MATSON DR., SACRAMENTO, CA 95822	✓		Slab ✓		Running water from
5	14	2352 MATSON DR., SACRAMENTO, CA 95822	✓		Slab ✓		backyard
5	14	2348 MATSON DR., SACRAMENTO, CA 95822	✓		Slab ✓		
5	15	2030 20TH AVE., SACRAMENTO, CA 95822	✓		slab		
5	15	2024 20TH AVE., SACRAMENTO, CA 95822	✓		slab		
5	15	2044 20TH AVE., SACRAMENTO, CA 95822	✓		crawlspace		Elevated
5	15	2036 20TH AVE., SACRAMENTO, CA 95822	✓		slab		
5	15	2040 20TH AVE., SACRAMENTO, CA 95822	✓				
5	15	4305 FREEPORT BLVD., SACRAMENTO, CA 95822	✓				
5	15	4301 FREEPORT BLVD., SACRAMENTO, CA 95822	✓				
5	15	4227 FREEPORT BLVD., SACRAMENTO, CA 95822	✓	✓			elevated slab
5	15	4228 LOTUS AVE., SACRAMENTO, CA 95822	✓	✓			
5	15	2041 20TH AVE., SACRAMENTO, CA 95822	✓		Crawlspace		
5	16	7274 ALCEDO CIR., SACRAMENTO, CA 95823	✓		Slab		
5	16	7278 ALCEDO CIR., SACRAMENTO, CA 95823	✓		Slab		

Flooding may be specific to property

5	16	7282 ALCEDO CIR., SACRAMENTO, CA 95823	✓		SLAB		Elevated steps, Drum out front
5	16	7286 ALCEDO CIR., SACRAMENTO, CA 95823	✓		SLAB ✓		
5	16	7290 ALCEDO CIR., SACRAMENTO, CA 95823	✓		SLAB		
5	16	7306 WINNET WAY, SACRAMENTO, CA 95823			SLAB		
5	16	7305 WINNET WAY, SACRAMENTO, CA 95823			SLAB		
5	17	1943 68TH AVE., SACRAMENTO, CA 95822	✓		SLAB ✓		
5	17	1957 68TH AVE., SACRAMENTO, CA 95822	✓	✓	SLAB ✓		
5	17	1971 68TH AVE., SACRAMENTO, CA 95822	✓		SLAB ✓		
5	17	1928 68TH AVE., SACRAMENTO, CA 95822			SLAB ✓		
5	17	1942 68TH AVE., SACRAMENTO, CA 95822			SLAB ✓		
5	17	1956 68TH AVE., SACRAMENTO, CA 95822	✓		SLAB ✓		
5	17	1970 68TH AVE., SACRAMENTO, CA 95822	✓	✓	SLAB ✓		Ponding out front
5	17	1984 68TH AVE., SACRAMENTO, CA 95822	✓		SLAB ✓		
5	17	1933 ONEIL WAY, SACRAMENTO, CA 95822	✓		~~SLAB~~ CRAWLSPACE	GOOD	
5	17	1949 ONEIL WAY, SACRAMENTO, CA 95822	✓		SLAB		
5	17	1965 ONEIL WAY, SACRAMENTO, CA 95822	✓		SLAB		
5	17	1981 ONEIL WAY, SACRAMENTO, CA 95822	✓		SLAB ✓		
5	17	2001 ONEIL WAY, SACRAMENTO, CA 95822	✓		SLAB ✓		elevated Foundation
5	18	2000 48TH AVE., SACRAMENTO, CA 95822	✓		CRAWLSPACE ✓	GOOD	
5	18	2010 48TH AVE., SACRAMENTO, CA 95822	✓		CRAWLSPACE ✓	GOOD	
5	18	2020 48TH AVE., SACRAMENTO, CA 95822	✓		CRAWLSPACE ✓	GOOD	
5	18	2030 48TH AVE., SACRAMENTO, CA 95822	✓	✓	CRAWLSPACE ✓	GOOD	CONVERTED GARAGE FLOODED W/ LAST STORM. CAME FROM A STREET
5	18	2040 48TH AVE., SACRAMENTO, CA 95822	✓		CRAWLSPACE ✓	GOOD	
5	18	2050 48TH AVE., SACRAMENTO, CA 95822	✓		CRAWLSPACE ✓	GOOD	
5	18	2060 48TH AVE., SACRAMENTO, CA 95822	✓		CRAWLSPACE ✓	GOOD	
5	18	2061 48TH AVE., SACRAMENTO, CA 95822	✓		CRAWLSPACE w/ VENTS	GOOD	
5	18	2051 48TH AVE., SACRAMENTO, CA 95822	✓		CRAWLSPACE ✓	GOOD	
5	18	2041 48TH AVE., SACRAMENTO, CA 95822	✓		CRAWLSPACE ✓	GOOD	
5	18	2031 48TH AVE., SACRAMENTO, CA 95822	✓		CRAWLSPACE ✓	GOOD	
5	18	2021 48TH AVE., SACRAMENTO, CA 95822	✓		CRAWLSPACE ✓	GOOD	CONVERTED GARAGE ↓ NOT ELEV.
5	18	2011 48TH AVE., SACRAMENTO, CA 95822	✓		CRAWLSPACE ✓	GOOD	
5	18	2001 48TH AVE., SACRAMENTO, CA 95822	✓		CRAWLSPACE ✓	GOOD	

TALKED TO POSTMAN AND HE SAID AREA BACKED UP DURING STORMS. ESPECIALLY THE CORNERS

Flood Protection Questionnaire

As part of the field visits, questionnaires were distributed to over 200 properties in the 18 identified areas. This was completed in an effort to gather further information about past flooding within the area. This information helped the City better understand flooding patterns within the region. Of the questionnaires that were delivered, four were returned completed. The responses are shown in Figure D.8.

Figure D.8. Completed Flood Protection Questionnaires

1. How many years have you occupied the home/building at this address? 33 yrs
2. Do you rent or own this home/building? ☐ Rent ☑ Own
3. What type of foundation does the home/building have?
   ☐ Slab ☑ Crawl Space ☑ Basement ☐ Other _____
4. Has this home/building or property ever been flooded or has a water problem?
   ☑ Yes ☐ No (if "no" please complete only 10-14)
5. In what year(s) did it flood? 1986, 2004, 2012 + more (no definite records)
6. What do you feel was the cause of the flooding? Check all that affect your home/building.
   ☐ Storm drain backup ☐ Standing water next to house/building
   ☑ Drainage from nearby property ☐ Saturated ground/leaks in basement walls
   ☐ Overbank flooding from: _____ ☑ Other: Sewer overload
7. How did the water enter your home/building? basement walls & window. also floods garage.
8. How deep did the water get?
   ☒ Yard Only: 6"-2' feet ☐ Crawl Space: _____ feet
   ☐ Over First Floor: _____ feet ☐ Basement: _____ feet
   ☑ Water kept out of house by sandbagging, sewer valve, or other protective measures { sump pump.
9. What was the longest timeframe that water stayed in the house/building? ____hours or ✓ days
10. Have you installed any flood protection measures on the property?
    ☑ Sump pump ☐ Waterproofed the outside walls ☐ Re-graded yard to reduce water
    ☐ Moved things out of basement ☐ Backup power system/generator ☐ Sandbagged
    ☐ Elevated utilities (water heater, etc.) ☐ Onsite Drainage ☐ Other _____
11. Did any of the measures checked in item 10 work? If so, which ones? If not, do you know why they failed? Sump pump works.
12. Do you have flood insurance? ☑ Yes ☐ No
13. Are you interested in mitigating your flooding issues through grant programs and/or floodproofing actions? ☑ Yes ☐ No
14. Include any additional information and comments you may have about flooding in your area:
    When water flows out of sewer, it brings TP & fecal matter all over property. Could be a serious health problem.

1. How many years have you occupied the home/building at this address? 4 months
2. Do you rent or own this home/building? ☐ Rent ☒ Own
3. What type of foundation does the home/building have?
   ☐ Slab ☐ Crawl Space ☒ Basement ☐ Other _____
4. Has this home/building or property ever been flooded or has a water problem?
   ☒ Yes ☐ No (if "no" please complete only 10-14)
5. In what year(s) did it flood? 2017
6. What do you feel was the cause of the flooding? Check all that affect your home/building.
   ☒ Storm drain backup ☒ Standing water next to house/building
   ☒ Drainage from nearby property ☒ Saturated ground/leaks in basement walls
   ☐ Overbank flooding from: _____ ☐ Other: _____
7. How did the water enter your home/building? Seeping up; & Backyard flooded + Entered garage.
8. How deep did the water get?
   ☒ Yard Only: .5-1.00 feet ☐ Crawl Space: _____ feet
   ☐ Over First Floor: _____ feet ☒ Basement: 2 feet
   ☐ Water kept out of house by sandbagging, sewer valve, or other protective measures
9. What was the longest timeframe that water stayed in the house/building? ____ hours or 2 days
10. Have you installed any flood protection measures on the property?
    ☒ Sump pump ☐ Waterproofed the outside walls ☐ Re-graded yard to reduce water
    ☒ Moved things out of basement ☐ Backup power system/generator ☐ Sandbagged
    ☐ Elevated utilities (water heater, etc.) ☒ Onsite Drainage ☒ Other Moved Things from garage
11. Did any of the measures checked in item 10 work? If so, which ones? If not, do you know why they failed? Sump
12. Do you have flood insurance? ☐ Yes ☒ No
13. Are you interested in mitigating your flooding issues through grant programs and/or floodproofing actions? ☒ Yes ☐ No
14. Include any additional information and comments you may have about flooding in your area:
    We noticed our neighbors sump sends water to our property too. Storm drain looks too small to handle flow. Sticks from nearby sycamore trees on city property clog drain + gutter.

Please help us by completing this survey by **February 24, 2017** and returning it to:

1. How many years have you occupied the home/building at this address? 18
2. Do you rent or own this home/building? ☐ Rent ☒ Own
3. What type of foundation does the home/building have?
   ☐ Slab ☐ Crawl Space ☒ Basement ☐ Other _____
4. Has this home/building or property ever been flooded or has a water problem?
   ☐ Yes ☒ No (if "no" please complete only 10-14) NOT OUR HOME OR BASEMENT
5. In what year(s) did it flood? YES - OR PROPERTY + GARAGE FLOODED IN 2013
6. What do you feel was the cause of the flooding? Check all that affect your home/building.
   ☒ Storm drain backup ☐ Standing water next to house/building
   ☐ Drainage from nearby property ☐ Saturated ground/leaks in basement walls
   ~~☐ Overbank flooding from:~~ WATER CAME OUT ~~☐ Other~~ OF MAN HOLE COVERS
7. How did the water enter your home/building? UNDER GARAGE DOOR
8. How deep did the water get?
   ☒ Yard ~~Only~~: 1 feet ~~☐ Crawl Space~~ GARAGE: 1 feet
   ☐ Over First Floor: _____ feet ☐ Basement: _____ feet
   ☐ Water kept out of house by sandbagging, sewer valve, or other protective measures
9. What was the longest timeframe that water stayed in the house/building? ____hours or 2 days
10. Have you installed any flood protection measures on the property?
    ☐ Sump pump ☐ Waterproofed the outside walls ☐ Re-graded yard to reduce water
    ☐ Moved things out of basement ☐ Backup power system/generator ☒ Sandbagged
    ☐ Elevated utilities (water heater, etc.) ☐ Onsite Drainage ☐ Other _____
11. Did any of the measures checked in item 10 work? If so, which ones? If not, do you know why they failed? _____
12. Do you have flood insurance? ☒ Yes ☐ No
13. Are you interested in mitigating your flooding issues through grant programs and/or floodproofing actions? ☐ Yes ☐ No
14. Include any additional information and comments you may have about flooding in your area:
    THERE IS NOTHING WE CAN DO AS HOMEOWNERS - FROM CITY SEWAGE BACK-UP

1. How many years have you occupied the home/building at this address? 33½ yrs.
2. Do you rent or own this home/building? ☐ Rent ☑ Own
3. What type of foundation does the home/building have?
   ☐ Slab ☑ Crawl Space ☑ Basement ☐ Other _____
4. Has this home/building or property ever been flooded or has a water problem?
   ☑ Yes ☐ No (if "no" please complete only 10-14)
5. In what year(s) did it flood? 1986 (?), 1990, 2011, ~2000
6. What do you feel was the cause of the flooding? Check all that affect your home/building.
   ☑ Storm drain backup ☐ Standing water next to house/building
   ☑ Drainage from nearby property ☐ Saturated ground/leaks in basement walls
   ☐ Overbank flooding from: _____ ☐ Other: _____
7. How did the water enter your home/building? Through air vents & back door
8. How deep did the water get?
   ☑ Yard Only: 2-3 feet ☐ Crawl Space: _____ feet
   ☐ Over First Floor: _____ feet ☑ Basement: 5-6 feet
   ☐ Water kept out of house by sandbagging, sewer valve, or other protective measures
9. What was the longest timeframe that water stayed in the house/building? ____hours or 4-5 days
10. Have you installed any flood protection measures on the property?
    ☑ Sump pump ☐ Waterproofed the outside walls ☑ Re-graded yard to reduce water
    ☐ Moved things out of basement ☐ Backup power system/generator ☐ Sandbagged
    ☐ Elevated utilities (water heater, etc.) ☐ Onsite Drainage ☐ Other _____
11. Did any of the measures checked in item 10 work? If so, which ones? If not, do you know why they failed? Have not really had an opportunity to see.
12. Do you have flood insurance? ☐ Yes ☑ No
13. Are you interested in mitigating your flooding issues through grant programs and/or floodproofing actions? ☑ Yes ☐ No
14. Include any additional information and comments you may have about flooding in your area:
    Most all of my flooding problems have been from the poor sewer & storm drain issues of the City of Sacramento!! So far, the city has never taken responsibility for this problem. Therefore, flood insurance is terribly expensive for me!

D.2 Annual Outreach Project

As a part of the repetitive loss outreach process, individual letters are mailed annually to all properties within the repetitive loss areas. In addition to the 21 repetitive loss properties an additional 184 properties receive the letter in Figure D.9 as well as the brochure listed in Figure D.10. This brings the total number of letters and brochures sent to property owners to 205.

Figure D.9. Sample Outreach Project

City of SACRAMENTO
Department of Utilities

September 15, 2016

«FIRST»«LAST»
«MAIL_ADDRE»
«MAIL_CITY», «MAIL_STATE» «MAIL_ZIP»

Dear Property Owner:

Based on a list compiled by the Federal Emergency Management Agency (FEMA), your property at **«STREET_NBR» «STREET_NAM», SACRAMENTO, CA («GIS_APN»)** has been identified in a flood prone area that has been flooded more than once. Our community is concerned about repetitive flooding and has an active program to help you protect yourself and your property from future flooding, but there are several things you can do.

For your information, we have enclosed a brochure on how to prepare and project yourself, property, and family in the event of a flood. We also encourage residents to purchase flood insurance to protect their assets. **Most homeowner's insurance policies do not cover loss from flooding.** Please contact your insurance agent for more information on rates and coverage.

Flood Insurance Rate Maps (FIRMs) are available online at www.msc.fema.gov. Hard copies of maps are available for review at the Department of Utilities, Engineering Services Division, 1395 35th Avenue, Sacramento, CA 95822.

You can check with the City's Floodplain Management Section on the extent of past flooding in your area. City staff can tell you about the causes of repetitive flooding, what the City is doing about it, and what would be an appropriate flood protection level. The staff can visit your property to discuss flood protection alternatives.

Consider some permanent flood protection measures:

- Check your building for water entry points. These can be protected with low walls or temporary shields.
- Install a floor drain plug, standpipe, overhead sewer, or sewer backup valve to prevent sewer backup flooding.
- Consider elevating your house above flood levels.
- Consider flood insurance for your property. Visit www.floodsmart.gov for more information.
- More information can be found at FEMA's website, www.ready.gov/floods or www.sacramentoready.org.
- **If you are interested in elevating or floodproofing your building above the flood level, you may be able to apply for a Federal grant to cover the majority of the cost.**

We would like to hear from your in regards to flooding in your area. If you know of past flooding or a problem area within your neighborhood, please contact us at (916) 808-5061 and provide this valuable information. In the case of active flooding, please contact 311.

For on-site visits, grant information, or general flood information, please contact Kelly Sherfey at (916) 808-5061 or ksherfey@cityofsacramento.org.

City of Sacramento Department of Utilities
916-808-1400
1395 35th Avenue
Sacramento, CA 95822

SIGN UP FOR EMERGENCY ALERTS
WWW.SACRAMENTO-ALERT.ORG

Figure D.10. Sample Brochure

What You Need to Know

Because of levee and dam improvements, most of the City is outside the Special Flood Hazard Area (SFHA). While these dams and levees provide us excellent protection, they are still subject to failure and any property in the City remains at risk of flooding.

Sacramento's vast floodplain and flood risk are due to our proximity to the Sacramento and American Rivers, as well as our local creeks and streams, and drainage systems which rely on pumps to drain properly. In the past 25 years, areas of the City have been subject to significant flooding- most notably in 1986, 1987 and 1997. This risk of flooding means that it is important that you and your family protect yourself and your property against flooding.

The SFHA, as designated by the Federal Emergency Management Agency, represents the 100-year regulatory floodplain. This means that in any given year, your property has greater than a one-in-100 chance of becoming flooded. But all homes, in and out of the SFHA, are subject to floods, which have a higher percentage of occurring in any given year.

Important Numbers

Floodplain Information Line- (916) 808-5061
www.cityofsacramento.org/FloodReady

To obtain general floodplain information, structural retrofit and permit information, or if you need a site visit for flooding and/or drainage problems, please call the Floodplain Information Line. Please be prepared to leave your name, telephone number, property address, tax assessor's parcel number and the type of information you need. A representative will return your call within 2 business days.

National Flood Insurance Program Referral Center
(888) 379-9531 www.floodsmart.gov

To report issues with your local levee, storm drain backups or illegal dumping in ditches, gutters, streams or rivers, call 311 within City limits or (916) 264-5011 from outside the City.

In addition to the American and Sacramento Rivers, several waterways traverse the City. These include Steelhead Creek (Natomas East Main Drainage Canal), Arcade Creek, Magpie Creek, Robla Creek, Morrison Creek, Florin Creek, Elder Creek, Strawberry Creek, Unionhouse Creek, Laguna Creek, Sacramento Canals, Pocket Area Canals, and Hagginwood Creek.

While flooding is a natural hazard in the Sacramento area, it is important to protect our waterways and the environment. Floodplains can provide valuable wildlife habitat and are a natural part of Sacramento. Understanding and protecting the natural functions of floodplains helps reduce flooding damage and protect our environment. The City of Sacramento is part of the Sacramento Stormwater Quality Partnership. The Partnership educates the public about illegal dumping into our waterways and stormwater pollution prevention. For more information, please call 808-4H2O (808-4426) or visit www.sacramentostormwater.org.

Printed on recycled paper

This brochure is provided as a public service to keep you informed and ready in the event of flooding.

CALL (916) 264-5011
我們講中文 • Hablamos español
[illegible] • พวกเรา[illegible]พูดภาษาลาว
Peb hais lus Hmoob • Chúng tôi nói tiếng Việt

BE FLOOD READY

Protect yourself today and tomorrow- a guide for Sacramento residents

City of SACRAMENTO
Department of Utilities

10/16PM

Flood Insurance- Are You Covered?

For many of us, our home and its contents are our greatest investment. So it is important to realize that standard homeowner and renter insurance policies do not cover losses due to flooding. You are encouraged to buy flood insurance - whether or not your home is located within the Special Flood Hazard Area (SFHA). Renters can purchase flood insurance to cover their possessions. Residents outside the SFHA may qualify to purchase a Preferred-Risk Policy (PRP) that provides the same coverage as standard flood insurance but at a discounted rate. Additionally, because the City participates in the National Flood Insurance Program and its Community Rating System (CRS), residents who do not qualify for a PRP and live within the Sacramento City limits are eligible to receive flood insurance coverage at a discounted rate.

Remember, you don't need to live in the SFHA to be affected by flooding. In fact 30% of all claims occur outside the SFHA. Recent levee improvements have reduced but not eliminated the flood risk to our community. Be sure to insure your property and its contents. There is a 30-day waiting period for most flood insurance policies to take effect. If you are buying a home and need flood insurance, purchase the insurance before the close of escrow, so the policy will go into effect at the close of escrow.

Whether it is required or not, property owners in flood-prone areas should always consider flood insurance as their first and last line of defense in protecting their family and property. Call your insurance agent or the National Flood Insurance Program at (888) 379-9531 to get your policy before the winter rains!

How Does the City Know a Flood is Coming?

The California Data Exchange Center (CDEC) provides a centralized location to store and process real-time hydrologic information gathered by various co operators throughout the State including the City's Automated Local Evaluation in Real Time (ALERT) gauges located on City creeks. The CDEC can be used to signal us about possible flooding. CDEC provides continuous report from river and creek levels and rainfall gauges online at www.cdec.water.ca.gov. With it, we can receive advanced warning of impending high water levels.

Know the Warnings

In case of a flooding emergency, the City may use different means to alert you to the situation and possible evacuation routes.

- **Everbridge Call to Your Home**
  Sacramento Emergency Communications Personnel may use Everbridge to alert you via email or on your home or cell phone if there is a need to evacuate. Listen carefully to the information and instructions provided to get help if you need assistance evacuating.
  To sign-up for Everbridge alerts, please visit www.SacramentoAlert.org
- Listen for Sirens. In the case of an emergency, police and fire officials will use their sirens and loudspeakers to alert you to necessary information about the emergency.
- Turn On TV or Radio. During large storm events, if you hear sirens, turn on a television set or radio and tune to a local station to find out information about emergency and evacuation routes. The emergency broadcast station for Sacramento is KFBK Radio 1530-AM.

Planning Ahead

Follow these tips to help your family be prepared in case of flooding.

1. Buy flood insurance. Know your insurance policies - what is covered and what isn't.
2. Create a family emergency plan. Check out www.ready.gov/make-a-plan for tips on what to plan for and a plan template.
3. Be familiar with the routes in and out of your neighborhood in case you need to evacuate. Remember to check TV or radio to find the preferred route out of your area before you leave your home.
4. Keep all of your important paperwork, including insurance policies and birth certificates in a safe place - such as a deposit box. If you keep them at home, be sure to take them with you when you leave your house.
5. Find the high points in and around your home. If you are caught in a flood, stay out of the water if at all possible. Do not drive through flooded streets. Even shallow water can have a deadly current and may be contaminated. When moving to upper floors, roof or higher ground, be sure to take your emergency supplies with you.
6. Teach children to dial 9-1-1 in case of emergency.
7. If you live in an area that is frequently flooded, keep sandbags, plywood, plastic sheeting and lumber on hand. DO NOT stack sandbags against your buildings foundation.
8. Consider improvements to your property, such as grading or correcting drainage problems that will help keep water away from your structure.
9. Keep areas open between homes, property lines, and levees.

Help Us Help You

There are several things that you can do to help the City. Make sure to properly dispose of yard waste in containers provided by the City. Remember illegal dumping is against the law. Keep drainage and ditches and canals clear of junk and debris and report any illegally dumped materials to the City by calling 311 or (916) 264-5011. Also, during a storm event, if you see a storm drain backing up, please call 311.

To find out if your home is located within the SFHA, floodway, in or around historic flooding, or additional hazards, please contact the City's Floodplain Information Line at (916) 808-5061, and a City representative will return your call within 2 business days. Floodplain maps and filed elevation certificates can be viewed at the City of Sacramento Department of Utilities, 1395 35th Ave.

Get a permit before you start construction. Remember, all floodplain development and redevelopment, including grading, building and retrofitting, require a permit. If you know of a non-permitted development project, please contact the City at (916) 264-5011 or 311.

Note: In SFHA zones A, AE, AH, and AO, if the cost of reconstruction, rehabilitation, addition or other improvements to a structure is more than 50% of the building's market value, then the structure must meet the same structural requirements as a new structure. Technical assistance for retrofitting homes and additional information can be obtained from the Floodplain Information Line at (916) 808-5061.