

REPETITIVE LOSS AREA ANALYSIS

City of Savannah, Georgia

Public Version

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1. Repetitive Loss Area Analysis

1.1 Background

Flooding is the most common natural hazard in the United States. More than 22,000 communities experience floods and this hazard accounts for more than 75 percent of all Presidential Disaster Declarations. In the United States, over 8.7 million residential and commercial structures are currently built in areas at risk to flooding. The cost of recovery is spread over local, state and federal governments and the victims themselves, who are directly affected by these disasters.

The NFIP is continually faced with the challenge of balancing the financial soundness of the program with the competing expectation of keeping premiums affordable. Repetitive loss properties are one of the largest obstacles to achieving financial soundness of the NFIP. Since the inception of the NFIP, over \$12.9 billion have been paid to repetitive loss properties, about one-fourth of all NFIP payments. While the NFIP has resulted in forty years of successful floodplain management, and many of these structures are no longer insured, repetitive loss properties are still a drain on the NFIP. Currently, repetitive loss properties represent 1.3% of all policies but are expected to account for 15% to 20% of future losses.



Private insurance companies faced with high losses have several options to keep turning a profit. They can raise income through premium rate increases, decrease payments to insurers or reduce the exposure to the hazard. Unfortunately, the NFIP can only do what is allowed by statute. If losses increase, the Federal Emergency Management Agency (FEMA) is authorized by Congress to make incremental adjustments to increase the premium rates and reduce overall coverage. FEMA is not permitted to eliminate coverage for any policy holder including high-risk properties. Actuarial rates cannot be charged to buildings built before State and local floodplain management regulations went into effect. Since repetitive flood claims must be paid, FEMA has no choice but to spread these costs among all policyholders.

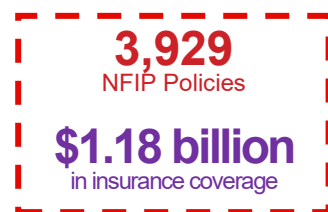
Sometimes floodplain management regulations mitigate repetitive flood losses when a building is substantially damaged. A structure where the cost of repairing is equal to or exceeds 50 percent of the building's value is considered substantially damaged. A substantially damaged building must be brought up to the same flood protection level as a new building under a community's floodplain management ordinance. Many repetitive loss buildings are not in a

regulated floodplain, or they do not get substantially damaged and remain at risk to future damage.

Many owners of properties that experience repetitive flooding are not aware of the magnitude of damage they are exposed to because they either purchased the property after the last flood or the seller or lender did not disclose the flood hazard. Disclosure of repetitive flooding is a problem due to the fact that repetitive loss areas are not shown on Flood Insurance Rate Maps (FIRMs).

The City of Savannah, Georgia (CID-135163) has been participating in the regular phase of the NFIP since May 21, 1971. In addition to meeting the basic requirements of the NFIP, Savannah has completed additional components to participate in the Community Rating System (CRS) program. Savannah is currently a CRS Class 5 which rewards all policyholders in the SFHA with a 25 percent reduction in their flood insurance premiums. Savannah has been participating in the CRS program since October 1, 2010.

As of February 2026, there are currently 3,929 NFIP Policies in force in Savannah with annual premiums of \$2,526,498 and insurance coverage of over \$1.18 billion. The city has 2,362 historical paid losses against the NFIP totaling more than \$33 million. A repetitive loss property does not have to currently be carrying a flood insurance policy to be considered a repetitive loss property or a severe



repetitive loss property. In some cases, a community will find that properties on its repetitive loss list are not currently insured. An insured property and claims on that property will make it a repetitive loss property. Once it is designated as a repetitive loss property, that property remains as a repetitive loss property from owner to owner; insured policy to no policy; and even after that property has been mitigated. Fifty percent of repetitive loss buildings in Savannah are currently insured (see the Repetitive Loss Requirement Section).

TERMINOLOGY

Repetitive Loss: Any insurable building for which two or more claims of more than \$1,000 were paid by the NFIP within any rolling 10-year period, since 1978. Two of the claims paid must be more than 10 days apart but, within 10 years of each other. A repetitive loss property may or may not be currently insured by the NFIP.

Severe Repetitive Loss: As defined by the Flood Insurance Reform Act of 2004, SRLs are 1-4 family residences that have had four or more claims of more than \$5,000 or at least two claims that cumulatively exceed the building's value. The Act creates new funding mechanisms to help mitigate flood damage for these properties.

According to repetitive loss data received from the Georgia Emergency Management Agency (GEMA) in 2018, there are a total of 184 unmitigated and 146 mitigated repetitive loss properties within the City of Savannah. Sixteen properties are classified as severe repetitive loss. Of the Sixteen severe repetitive loss properties, five remain unmitigated. An updated Activity 510 Floodplain Mitigation Plan (FMP) is currently under development for the City. Since the FMP examines flooding issues as a whole within the City and does not assess individual properties, the City of Savannah has opted to complete a Repetitive Loss Area Analysis (RLAA)

using the 2025 CRS Coordinator's Manual. The RLAA will benefit the city by examining potential mitigation measures for specific repetitive loss areas and increasing its credit in the CRS Program.

1.2 Setting

The City of Savannah is located in Chatham County in southeastern Georgia, with a population of 147,898 as of the 2024 American Community Survey 5-year estimates. Nestled near the Savannah River and the Atlantic Ocean, the city has a total land area of approximately 103 square miles and is situated on a low coastal plain with much of its surrounding area consisting of tidal marshes. Elevations range from sea level along the coast to approximately 40 feet in downtown Savannah. The Savannah River (north of City) and the Ogeechee River (south of City) have drainage areas extending far beyond the limits of Savannah and Chatham County. Main openings to the Atlantic Ocean are Ossabaw Sound and Wassaw Sound.

Flooding within the City of Savannah can be attributed to three sources: 1) tidal flooding resulting from hurricanes and tropical storms; 2) flash flooding resulting from heavy rainfall that overburdens the drainage system within the community; and 3) riverine flooding resulting from heavy and prolonged rainfall over a given watershed which causes the capacity of the main channel to be exceeded. Figure 1.1 reflects the flood zones within the City of Savannah, Figure 1.2 illustrates the Savannah canal system.

Figure 1.1 – FEMA Flood Zones, City of Savannah

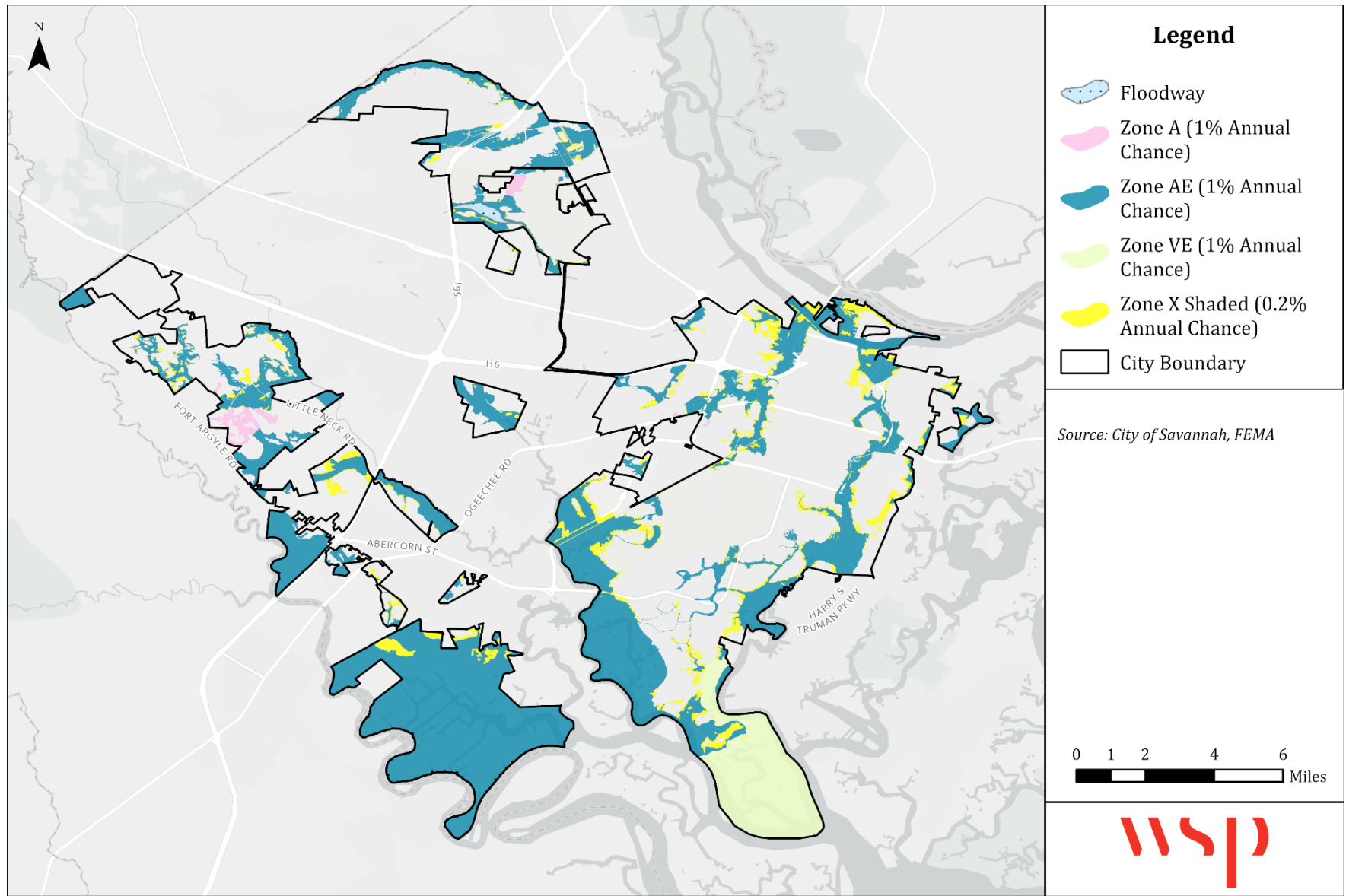
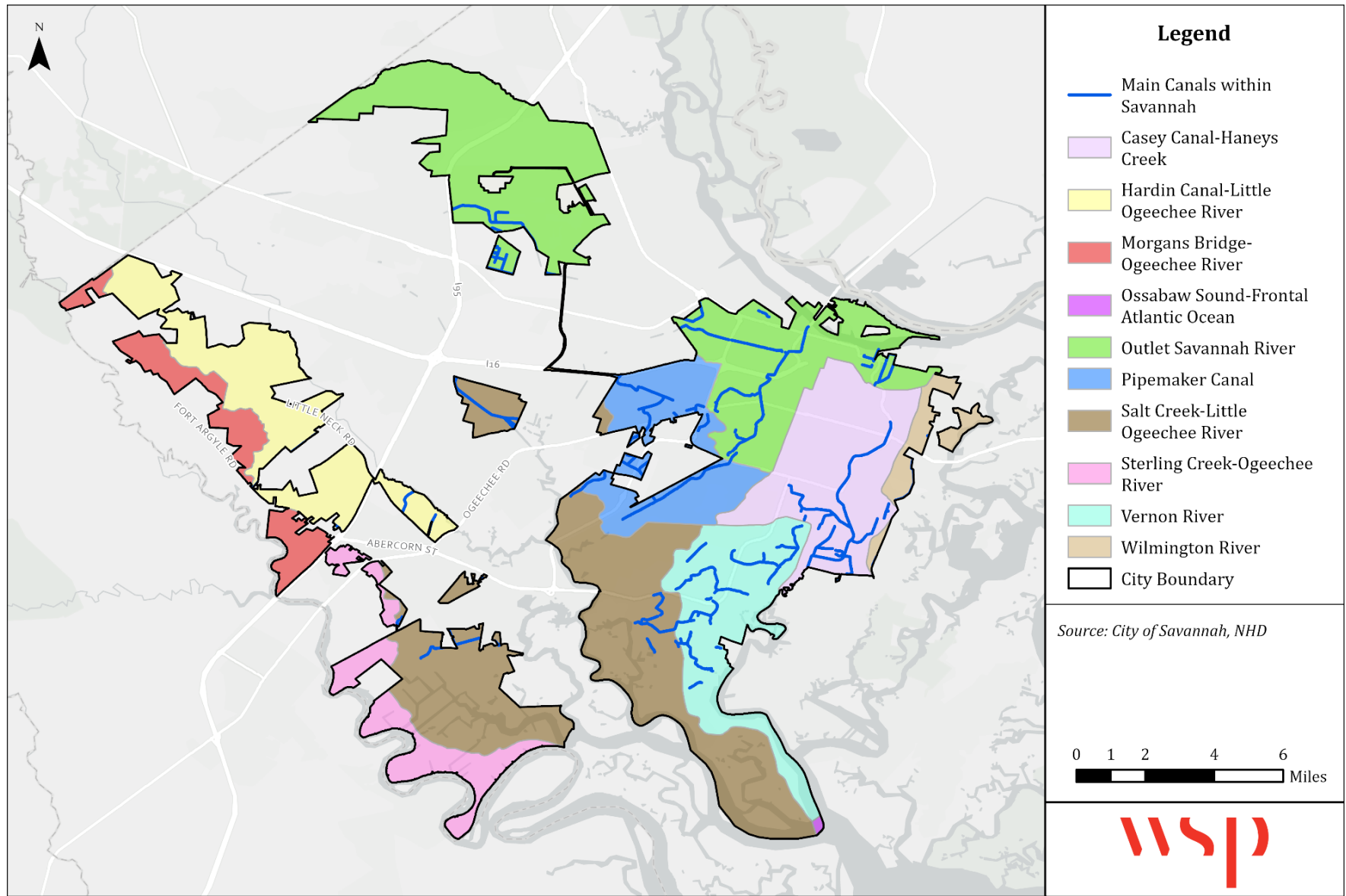


Figure 1.2 – City of Savannah Canal System



1.3 Repetitive Loss Requirement

Repetitive loss data must be maintained and updated annually in order to participate in the CRS. Since many of the losses under the NFIP come from repetitively flooded properties, addressing these properties is a priority for participating in the CRS Program. Depending on the severity of the repetitive loss problem, a CRS community has different responsibilities.

Category A: A community with no unmitigated repetitive loss properties. No special requirements from the CRS.

Category B: A community with at least one, but fewer than 50, unmitigated repetitive loss properties. Category B communities are required by the CRS to research and describe their repetitive loss problem, create a map showing the location of all repetitive loss properties (areas) and complete an annual outreach activity directed to repetitive loss properties.

Category C: A community with 50 or more unmitigated repetitive loss properties. Category C communities are required to do everything in Category B and prepare either a floodplain management plan that covers all repetitive loss properties (areas) or prepare a RLAA for all repetitive loss areas.

Based on 2018 GEMA Repetitive Loss data for Savannah, which identifies 184 unmitigated repetitive loss properties, the City is designated as a Category C repetitive loss community under FEMA's Community Rating System (CRS) program. The repetitive loss properties reported by GEMA are summarized in Table 1.1.

Table 1.1 – Summary of Unmitigated Repetitive Loss Properties

Occupancy Type	Insured	Losses	Total Building Payment	Total Content Payment	Total Paid
Single Family	No	2	\$14,737.64	\$4,421.00	\$19,158.64
Single Family	Yes	2	\$19,693.25	\$6,740.43	\$26,433.68
Single Family	No	2	\$7,435.09	\$1,200.75	\$8,635.84
2-4 Family	Yes	2	\$17,062.44	\$0.00	\$17,062.44
Single Family	Yes	3	\$36,441.05	\$5,000.00	\$41,441.05
Single Family	No	2	\$11,732.64	\$102.00	\$11,834.64
Single Family	No	2	\$16,708.24	\$4,919.81	\$21,628.05
Single Family	No	2	\$29,173.19	\$12,137.26	\$41,310.45
Single Family	No	2	\$16,776.34	\$0.00	\$16,776.34
Single Family	No	2	\$14,073.40	\$30,952.98	\$45,026.38
Single Family	No	2	\$27,775.00	\$0.00	\$27,775.00
Single Family	Yes	2	\$32,248.57	\$4,993.92	\$37,242.49
Single Family	No	2	\$24,317.94	\$14,349.61	\$38,667.55
Single Family	Yes	2	\$37,000.00	\$12,585.00	\$49,585.00
Single Family	No	2	\$4,268.65	\$0.00	\$4,268.65
Single Family	Yes	2	\$27,779.00	\$2,862.73	\$30,641.73

Occupancy Type	Insured	Losses	Total Building Payment	Total Content Payment	Total Paid
Single Family	Yes	2	\$2,660.57	\$574.96	\$3,235.53
Single Family	No	2	\$13,450.53	\$3,581.99	\$17,032.52
Single Family	No	2	\$4,368.19	\$0.00	\$4,368.19
Single Family	No	2	\$14,958.99	\$0.00	\$14,958.99
Single Family	No	2	\$58,588.19	\$48,000.00	\$106,588.19
Single Family	No	2	\$30,709.40	\$3,853.21	\$34,562.61
Single Family	No	2	\$8,522.22	\$6,402.89	\$14,925.11
Single Family	Yes	4	\$98,028.74	\$39,562.17	\$137,590.91
Single Family	No	2	\$5,765.92	\$0.00	\$5,765.92
Single Family	No	2	\$6,995.91	\$10,000.00	\$16,995.91
Single Family	No	2	\$8,522.88	\$0.00	\$8,522.88
Single Family	No	2	\$3,334.73	\$0.00	\$3,334.73
Other Nonresidential	No	3	\$6,890.43	\$8,961.64	\$15,852.07
Single Family	No	4	\$57,553.60	\$9,714.34	\$67,267.94
Single Family	Yes	3	\$24,032.13	\$0.00	\$24,032.13
Single Family	Yes	2	\$8,725.81	\$0.00	\$8,725.81
Single Family	Yes	2	\$3,858.19	\$2,139.66	\$5,997.85
Single Family	Yes	2	\$3,038.57	\$0.00	\$3,038.57
Single Family	No	2	\$2,133.66	\$0.00	\$2,133.66
Single Family	No	2	\$32,516.11	\$2,306.61	\$34,822.72
Single Family	Yes	3	\$25,191.01	\$7,842.77	\$33,033.78
Single Family	No	2	\$14,808.73	\$11,218.72	\$26,027.45
2-4 Family	No	2	\$31,809.36	\$13,412.79	\$45,222.15
Single Family	No	2	\$16,136.49	\$0.00	\$16,136.49
Single Family	Yes	2	\$24,462.81	\$20,993.87	\$45,456.68
Single Family	Yes	2	\$15,287.88	\$3,754.26	\$19,042.14
Single Family	No	2	\$18,598.77	\$9,635.00	\$28,233.77
Single Family	SDF	4	\$33,262.50	\$10,882.90	\$44,145.40
Single Family	No	2	\$16,334.84	\$7,494.77	\$23,829.61
Single Family	No	2	\$6,570.80	\$0.00	\$6,570.80
Single Family	Yes	3	\$16,084.21	\$11,931.79	\$28,016.00
Single Family	No	2	\$24,173.13	\$0.00	\$24,173.13
Business Nonresidential	Yes	2	\$214,523.28	\$0.00	\$214,523.28
Single Family	Yes	2	\$13,721.21	\$7,722.76	\$21,443.97
Single Family	Yes	2	\$7,794.08	\$0.00	\$7,794.08
Other Residential	SDF	4	\$518,141.16	\$0.00	\$518,141.16
Other Residential	No	2	\$165,692.35	\$0.00	\$165,692.35
Other Residential	Yes	3	\$507,604.30	\$7,966.04	\$515,570.34
Other Nonresidential	No	2	\$29,233.69	\$0.00	\$29,233.69

Occupancy Type	Insured	Losses	Total Building Payment	Total Content Payment	Total Paid
Business Nonresidential	Yes	3	\$65,093.61	\$10,000.00	\$75,093.61
Single Family	Yes	2	\$24,963.96	\$7,485.33	\$32,449.29
Single Family	Yes	4	\$25,591.06	\$5,240.93	\$30,831.99
Single Family	No	2	\$32,225.29	\$0.00	\$32,225.29
Single Family	Yes	2	\$32,581.18	\$0.00	\$32,581.18
Single Family	No	2	\$39,393.80	\$20,863.11	\$60,256.91
Single Family	Yes	2	\$7,885.94	\$5,987.42	\$13,873.36
Single Family	No	2	\$40,015.68	\$20,643.17	\$60,658.85
Single Family	No	2	\$16,438.08	\$1,998.00	\$18,436.08
Single Family	No	2	\$8,978.73	\$306.36	\$9,285.09
Single Family	No	5	\$7,962.18	\$2,116.62	\$10,078.80
Single Family	Yes	2	\$10,062.61	\$4,875.88	\$14,938.49
Single Family	No	2	\$10,265.52	\$3,248.36	\$13,513.88
Single Family	No	2	\$5,688.02	\$0.00	\$5,688.02
Single Family	No	2	\$3,592.21	\$0.00	\$3,592.21
Single Family	Yes	3	\$82,404.07	\$2,969.50	\$85,373.57
Single Family	Yes	3	\$7,787.48	\$3,659.30	\$11,446.78
Single Family	Yes	3	\$3,993.56	\$0.00	\$3,993.56
Other Nonresidential	No	4	\$27,218.83	\$5,305.99	\$32,524.82
Single Family	Yes	2	\$44,204.49	\$31,863.22	\$76,067.71
Single Family	No	2	\$6,347.17	\$0.00	\$6,347.17
2-4 Family	No	3	\$39,929.56	\$39,646.57	\$79,576.13
Single Family	No	2	\$46,459.44	\$32,578.18	\$79,037.62
Single Family	Yes	2	\$11,481.12	\$7,309.84	\$18,790.96
Other Nonresidential	No	2	\$36,252.57	\$23,725.40	\$59,977.97
Single Family	No	2	\$9,323.14	\$1,046.32	\$10,369.46
Single Family	No	2	\$19,697.03	\$7,400.94	\$27,097.97
Single Family	No	2	\$5,851.27	\$5,394.54	\$11,245.81
Single Family	No	3	\$17,991.83	\$10,790.70	\$28,782.53
Other Nonresidential	No	2	\$267,359.88	\$600,948.61	\$868,308.49
Single Family	Yes	2	\$8,916.72	\$3,701.67	\$12,618.39
Single Family	No	2	\$70,372.64	\$11,139.15	\$81,511.79
Single Family	No	2	\$41,874.21	\$0.00	\$41,874.21
Single Family	No	3	\$42,155.20	\$32,762.51	\$74,917.71
Single Family	No	2	\$6,893.94	\$744.74	\$7,638.68
Business Nonresidential	Yes	3	\$79,586.24	\$72,975.74	\$152,561.98
Other Nonresidential	No	2	\$0.00	\$60,293.22	\$60,293.22

Occupancy Type	Insured	Losses	Total Building Payment	Total Content Payment	Total Paid
Single Family	No	3	\$41,442.06	\$18,521.35	\$59,963.41
Single Family	Yes	2	\$25,161.92	\$369.99	\$25,531.91
Single Family	No	2	\$22,078.55	\$1,922.05	\$24,000.60
Single Family	No	2	\$34,680.32	\$12,838.54	\$47,518.86
Single Family	No	3	\$61,794.05	\$19,031.13	\$80,825.18
Single Family	No	2	\$20,065.79	\$0.00	\$20,065.79
Single Family	No	2	\$23,462.03	\$10,000.00	\$33,462.03
Single Family	No	5	\$20,643.86	\$10,741.24	\$31,385.10
Single Family	Yes	2	\$7,211.60	\$4,256.69	\$11,468.29
Single Family	Yes	3	\$156,836.47	\$34,717.11	\$191,553.58
Single Family	Yes	3	\$81,663.83	\$11,052.96	\$92,716.79
Single Family	No	2	\$25,108.31	\$3,777.72	\$28,886.03
2-4 Family	Yes	2	\$52,606.33	\$40,113.93	\$92,720.26
Single Family	No	3	\$14,028.53	\$0.00	\$14,028.53
Single Family	No	3	\$8,869.67	\$0.00	\$8,869.67
Other Nonresidential	No	3	\$0.00	\$202,814.82	\$202,814.82
Single Family	No	2	\$16,858.75	\$9,343.88	\$26,202.63
Single Family	No	2	\$7,258.73	\$2,162.51	\$9,421.24
Single Family	No	2	\$3,319.53	\$0.00	\$3,319.53
2-4 Family	Yes	2	\$29,764.42	\$19,057.50	\$48,821.92
Single Family	No	2	\$8,101.60	\$0.00	\$8,101.60
Single Family	No	2	\$30,027.32	\$11,019.88	\$41,047.20
Single Family	No	2	\$9,640.28	\$2,437.29	\$12,077.57
Single Family	Yes	2	\$6,799.63	\$0.00	\$6,799.63
Single Family	No	2	\$25,020.69	\$31,764.60	\$56,785.29
Single Family	No	2	\$42,510.04	\$11,908.42	\$54,418.46
Single Family	Yes	2	\$8,310.20	\$0.00	\$8,310.20
Single Family	No	2	\$35,800.36	\$22,419.19	\$58,219.55
Single Family	Yes	2	\$10,121.94	\$1,365.37	\$11,487.31
Single Family	Yes	2	\$6,403.06	\$4,705.52	\$11,108.58
Single Family	Yes	3	\$29,073.53	\$17,830.52	\$46,904.05
Single Family	Yes	2	\$13,192.46	\$707.61	\$13,900.07
Single Family	No	2	\$7,975.27	\$84.00	\$8,059.27
Single Family	Yes	2	\$56,681.23	\$27,932.54	\$84,613.77
Single Family	No	3	\$12,487.71	\$872.86	\$13,360.57
Single Family	No	3	\$20,832.67	\$54,866.84	\$75,699.51
Assmd Condo	Yes	3	\$34,007.54	\$11,906.16	\$45,913.70
Single Family	No	2	\$22,100.00	\$18,757.75	\$40,857.75
2-4 Family	No	3	\$58,546.15	\$0.00	\$58,546.15
2-4 Family	No	2	\$35,407.15	\$28,072.11	\$63,479.26
Single Family	Yes	3	\$9,179.97	\$1,483.32	\$10,663.29
Single Family	Yes	2	\$77,789.00	\$30,154.04	\$107,943.04

Occupancy Type	Insured	Losses	Total Building Payment	Total Content Payment	Total Paid
Single Family	Yes	2	\$22,701.40	\$13,594.55	\$36,295.95
Other Nonresidential	No	7	\$12,792.72	\$4,434.97	\$17,227.69
Single Family	SDF	7	\$171,273.91	\$13,675.32	\$184,949.23
Single Family	No	2	\$9,798.81	\$745.00	\$10,543.81
Single Family	No	6	\$70,470.53	\$30,251.48	\$100,722.01
Single Family	No	2	\$23,151.61	\$4,011.40	\$27,163.01
Single Family	Yes	3	\$105,270.87	\$66,037.26	\$171,308.13
Single Family	No	2	\$40,589.98	\$22,063.42	\$62,653.40
Single Family	No	2	\$33,262.84	\$8,749.01	\$42,011.85
Single Family	No	3	\$11,446.17	\$4,838.00	\$16,284.17
Single Family	Yes	2	\$43,147.67	\$0.00	\$43,147.67
Single Family	Yes	3	\$24,249.01	\$90.28	\$24,339.29
Single Family	No	2	\$5,046.41	\$4,110.30	\$9,156.71
Single Family	Yes	3	\$131,472.79	\$45,523.51	\$176,996.30
Single Family	No	4	\$35,785.23	\$48,687.43	\$84,472.66
Single Family	No	2	\$12,047.90	\$0.00	\$12,047.90
Single Family	Yes	3	\$53,694.45	\$3,201.62	\$56,896.07
Single Family	No	2	\$46,207.17	\$11,694.14	\$57,901.31
Single Family	Yes	3	\$141,482.07	\$59,246.78	\$200,728.85
Single Family	No	3	\$13,215.93	\$3,399.50	\$16,615.43
Single Family	No	4	\$50,826.85	\$22,283.61	\$73,110.46
Other Nonresidential	Yes	3	\$57,609.06	\$5,487.96	\$63,097.02
Single Family	Yes	2	\$1,865.21	\$3,199.41	\$5,064.62
Single Family	No	2	\$5,383.56	\$0.00	\$5,383.56
Single Family	No	3	\$124,129.78	\$170,336.66	\$294,466.44
Single Family	No	2	\$26,144.71	\$16,611.04	\$42,755.75
Other Nonresidential	No	2	\$59,485.40	\$3,770.00	\$63,255.40
Other Nonresidential	Yes	2	\$23,325.03	\$41,588.77	\$64,913.80
Single Family	Yes	3	\$6,046.94	\$7,559.99	\$13,606.93
Single Family	No	2	\$21,151.69	\$7,430.06	\$28,581.75
Assmd Condo	No	2	\$103,255.41	\$30,531.09	\$133,786.50
Single Family	No	3	\$12,722.27	\$22.55	\$12,744.82
2-4 Family	No	2	\$23,776.92	\$32,129.50	\$55,906.42
Single Family	Yes	2	\$6,885.81	\$5,339.29	\$12,225.10
Single Family	Yes	2	\$34,776.45	\$50,904.24	\$85,680.69
Other Nonresidential	No	2	\$28,578.02	\$16,226.15	\$44,804.17
Other Residential	No	2	\$81,528.63	\$0.00	\$81,528.63
Single Family	Yes	3	\$74,041.06	\$34,992.92	\$109,033.98

Occupancy Type	Insured	Losses	Total Building Payment	Total Content Payment	Total Paid
Single Family	Yes	2	\$63,000.90	\$221.54	\$63,222.44
Single Family	Yes	2	\$110,827.26	\$55,100.00	\$165,927.26
Single Family	No	2	\$49,243.13	\$40,133.65	\$89,376.78
Single Family	No	2	\$34,887.22	\$11,116.10	\$46,003.32
Single Family	No	2	\$38,046.78	\$0.00	\$38,046.78
Single Family	Yes	2	\$13,879.20	\$1,205.15	\$15,084.35
Single Family	Yes	2	\$4,756.39	\$987.45	\$5,743.84
Single Family	Yes	3	\$32,424.94	\$4,270.93	\$36,695.87
Single Family	No	2	\$41,091.96	\$0.00	\$41,091.96
Other Nonresidential	No	3	\$207,107.55	\$359,413.91	\$566,521.46
Single Family	No	2	\$16,760.22	\$11,793.64	\$28,553.86
Other Nonresidential	Yes	3	\$7,747.18	\$3,001.75	\$10,748.93

Source: GEMA Repetitive Loss Data, 2018

1.4 Mapping Repetitive Loss Areas

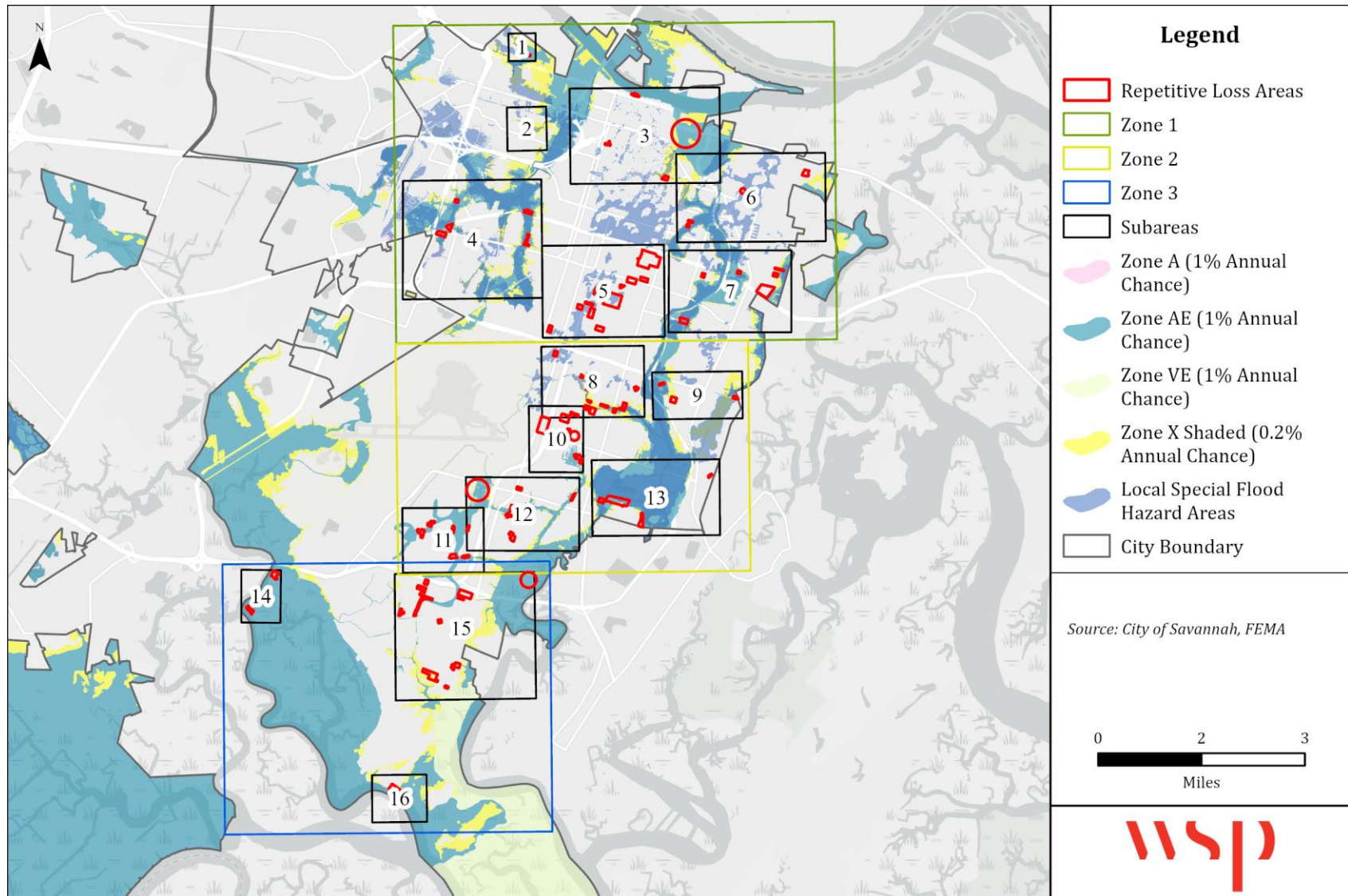
In accordance with the principles outlined in the CRS guidance titled *Developing a Repetitive Loss Area Analysis* dated in 2017, 89 Repetitive Loss Areas were identified within the City of Savannah. The 89 Repetitive Loss Areas included the 184 unmitigated repetitive loss properties plus an additional 633 properties that have the same or similar flood conditions but have not had any claims paid against the NFIP. Therefore, a total of 817 properties were included within the RLAA.

For reporting purposes, the 89 Repetitive Loss Areas were grouped into 16 subareas, then divided into three zones based on predominant building type and flooding source. The three zones are as follows:

- Zone 1: Downtown/Historic/Midtown
- Zone 2: Southcentral
- Zone 3: South City/Sound

A detailed map of each subarea is provided in Section 2. An overview map of the City of Savannah Repetitive Loss Areas is shown in Figure 1.3 on the following page.

Figure 1.3 – Repetitive Loss Area Overview Map



2. The RLAA Process

This RLAA was developed according to requirements and recommendations from the following guidance documents:

1. CRS publication *CRS Coordinator's Manual, 2025, Activity 510 Repetitive Loss Area Analysis*
2. FEMA publication *Reducing Damage from Localized Flooding: A Guide for Communities, Part III Chapter 7*
3. CRS publication *Developing a Repetitive Loss Area Analysis for Credit Under the CRS, 2017*
4. Center for Hazards Assessment Response and Technology, University of New Orleans draft publication *The Guidebook to Conducting Repetitive Loss Area Analyses*

Specifically, this RLAA included all five planning steps included in the 2025 *CRS Coordinator's Manual*:

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 or organizations that may have plans or studies that could affect the cause or impact of the flooding. The agencies and organizations must be identified in the analysis report.

Step 3: Visit each building in the repetitive loss area 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.

Beyond these five planning steps, additional credit criteria for Activity 510 were also met. The repetitive loss areas were delineated in accordance with the criteria in Section 503 of the CRS Coordinator's Manual and areas were mapped as described in Section 503.a. The RLAA report will be submitted to the City Commission and made available to the public. The RLAA will be formally adopted by the City Commission or a delegated office. Moving forward, the city will prepare an annual progress report to the RLAA and will update the RLAA in time for each CRS cycle verification visit.

2.1 STEP 1. Advise All Property Owners

Before field work began on the original RLAA, individual letters were mailed to property owners/residents within the 89 identified Repetitive Loss Areas.

Figure 2.1 on the following page shows an example of the property owner notification letter. Letters were mailed to all buildings of repetitive loss properties, historical repetitive loss properties (those with one paid claim against the NFIP), and additional properties added to the repetitive loss areas which have no claims paid against the NFIP.

During the 2021 update to this RLAA, letters and questionnaires were mailed to all properties. Letters were mailed in the week of August 16, 2021.

Copies of the letters are provided in Appendix A. (Note: In accordance with the Privacy Act of 1974, Appendix A will not be shared with the general public).

2.1.1 Mailed Questionnaire

A property owner questionnaire was included with each letter mailed to building owners in each of the 89 Repetitive Loss Areas. The questionnaire asks about the type of foundation and if the building has a basement, if the building has experienced any flooding and the type of flooding, cause of flooding, flood protection measures and whether the owner has flood insurance. The updated Flood Protection Questionnaire sent out in 2021 is shown in Figure 2.2 and Figure 2.3 on the following pages.

Figure 2.1 – Example Property Notification Letter

[DATE] [NAME] [ADDRESS] [ADDRESS] Property Address: XXXXXX Parcel Number: XXXXXXXXXX Dear Property Owner or Resident: As part of the City of Savannah's participation in the National Flood Insurance Program's (NFIP) Community Rating System (CRS), the Development Services Department is evaluating properties that have experienced repetitive flood damage. This analysis will include the review of all previous flood data and studies conducted in these locations. The repetitive loss analysis involves the collection of the following property level data elements: ▪ Building permit records (including application and associated records) ▪ Structure and site elevation information (elevation certificate if available) ▪ Tax ID and lot and parcel number ▪ Building property value on record (assessed value, replacement value or both) ▪ Land property value on record ▪ Building codes/floodplain development regulations exceeding minimum standards ▪ Historical flood event information (when events occurred, amount of damage to property, etc.) In addition, the City of Savannah and its contractor will assess each property to survey the flood risk and to make flood protection recommendations. Property owners are encouraged to provide any relevant flooding information through the attached Flood Protection Questionnaire. The results of the repetitive loss area analysis will include a review of alternative approaches for property protection measures or drainage improvements where feasible. Once the analysis is complete, a copy of the report can be obtained from the Development Services Department or by calling 912-651-6530. You can help us perform this analysis by completing the enclosed questionnaire and returning to me at Tom McDonald, Development Services Department, 5515 Abercorn Street, Savannah, GA 31405. If you have any questions, please call me at 912-651-6530 x1895. Sincerely, Tom McDonald, CFM Permitting & Floodplain Manager City of Savannah	 SAVANNAH savannahga.gov
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Figure 2.2 – Flood Protection Questionnaire, Page 1



CITY OF SAVANNAH

FLOOD PROTECTION QUESTIONNAIRE

Name: _____

Property Address: _____

1. How many years have you occupied the building at this address?

☐ Less than 1
☐ 1-5 years

☐ 5-10 years
☐ 10+ years
2. Do you rent or own this building?

☐ Rent
☐ Own
3. What type of foundation does the building have?

☐ Slab
☐ Crawl Space

☐ Basement
☐ Other: _____
4. Has this **building** ever been flooded or had a water problem?
☐ Yes ☐ No
5. Has this **property** ever been flooded or had a water problem?
☐ Yes ☐ No – if no, skip to question 12.
6. In what year(s) did the building or property flood? _____
7. Where did you get water and how deep did it get?

☐ In basement; Depth: _____
☐ In crawl space; Depth: _____
☐ Water was kept out of building by sandbagging, sewer valve, or other protective measure

☐ Over 1st floor; Depth: _____
☐ In yard; Depth: _____
8. What was the longest time that water stayed in the building or on the property? _____
9. What do you feel was the cause of your flooding? Check all that affect your building or property.

☐ Storm sewer backup
☐ Sanitary sewer backup
☐ Standing water next to house/building
☐ Drainage from nearby properties
☐ Saturated ground / leaks in basement walls

☐ Flooding from ditch/creek/river: _____
☐ Other: _____
10. Have you taken any of these flood protection actions on the property?

	Yes	No		Yes	No
Installed sump pump	☐	☐	Installed backup power system / generator	☐	☐
Waterproofed the outside wall	☐	☐	Sandbagged	☐	☐
Re-graded yard to keep water away	☐	☐	Other:	☐	☐
Moved things out of basement	☐	☐			

Page 1 of 2

Figure 2.3 – Flood Protection Questionnaire, Page 2

 SAVANNAH savannahga.gov	FLOOD PROTECTION QUESTIONNAIRE <i>(CONTINUED)</i>
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11. Which flood protection measures (checked in question 10) worked?

12. Is this building located in a FEMA floodplain?

☐ Yes

☐ No

☐ I don't know

13. Do you have flood insurance for this building?

☐ Yes

☐ No

☐ I don't know

14. Please include any additional information and comments you may have about flooding on this property or the surrounding area:

For more information on flood protection measures for your buildings or property, please contact Tom McDonald, info below.

Please help us by completing this survey by September 15, 2021 and returning it to:

Tom McDonald, CFM
Permitting & Floodplain Manager
5515 Abercorn Street
Savannah, GA 31405

Surveys can also be emailed to TMcDonald@savannahga.gov.

Page 2 of 2

The City of Savannah received 176 responses to the questionnaire which corresponds to a response rate of approximately 21 percent. Copies of the complete questionnaires are located in Appendix B. (Note: In accordance with the Privacy Act of 1974, Appendix B will not be shared with the general public). Questionnaire responses are summarized below. Note: Respondents may have skipped questions and/or provided more than one response to a question. Despite minor changes in format to the new questionnaire, all responses from the original and updated surveys are combined below.

Q1: When did you move into this home/building at this address?

Responses Received	Percentage	Number Responding
<10 years ago	30	49
10-20 years ago	29	48
20-30 years ago	21	34
30-40 years ago	9	15
40-50 years ago	5	8
> 50 years ago	6	9
Total	100	163

Q2: What type of foundation does your home/building have?

Answer Choices	Percentage	Number Responding
Slab	54	97
Crawl space	42	76
Basement	1	2
Other	3	6
Total	100	181

Q3: Has your home/building or property ever been flooded or had a water problem?

Answer Choices	Percentage	Number Responding
Yes	41	69
No	59	101
Total	100	170

Q4: In what year(s) did it flood?

Responses Received	Percentage	Number Responding
1976	1	1
1985	1	1
1989	1	1
1990	2	2
1994	13	13
1996	18	18
1998	7	7
1999	25	26
2000	1	1
2001	1	1

Responses Received	Percentage	Number Responding
2002	1	1
2003	1	1
2004	2	2
2005	2	2
2006	4	4
2007	2	2
2008	2	2
2010	2	2
2011	3	3
2012	5	5
2013	3	3
2014	4	4
2017	1	1
Total	100	103

Q5: Where did you get water? How deep did the water get?

Answer Choices	Percentage	Number Responding	Depth	
			< 3 ft	> 3 ft
Basement	9	7	7	0
Crawl space	18	15	8	7
Over first floor	35	28	27	1
Yard only	31	25	21	4
Water kept out of house by sandbagging, sewer valve, or other protection measures	7	6	n/a	n/a
Total	100	81	63	12

Q6: What was the longest time that water stayed in the house/building?

Responses Received	Percentage	Number Responding
1-2 hours	15	6
3-4 hours	30	12
5-6 hours	7.5	3
7-8 hours	5	2
9-10 hours	5	2
12 hours	2.5	1
18 hours	2.5	1
30 hours	2.5	1
1-2 days	20	8
3-4 days	10	4
Total	100	40

Q7: What do you feel was the cause of your flooding?

Answer Choices	Percentage	Number Responding
Storm sewer backup	35	44
Sanitary sewer backup	2	3
Standing water next to house/building	11	14
Drainage from nearby properties	18	23
Saturated ground/leads in basement walls	7	9
Overbank flooding	13	18
Other	13	17
Total	100	128

Q8: Have you installed any flood protection measures on your property?

Answer Choices	Percentage	Number Responding
Sump pump	21	14
Waterproofed the outside walls	5	3
Re-graded yard to keep water away	29	19
Moved things out of basement	2	1
Backup power system/generator	8	5
Sandbagged	8	5
Other	29	19
Total	100	66

Q9: Did any of the measures checked in Question 8 work?

Answered "Yes" for the following:	Percentage	Number Responding
Sump pump (when electricity available)	28	7
Waterproofed the outside walls	8	2
Re-graded yard to keep water away	28	7
Moved things out of basement	0	0
Backup power system/generator	4	1
Sandbagged	8	2
Other		
City drainage project	12	3
New gutters	4	1
Raised HVAC	4	1
New plumbing	4	1
Total	100	25

Q10: Do you have FEMA Flood Insurance?

Answer Choices	Percentage	Number Responding
Yes	55	92
No	39	68
Not sure	6	10
Total	100	170

Q11: Do you want information on protecting your home/building from flooding?

Answer Choices	Percentage	Number Responding
Yes	48	74
No	52	81
Total	100	154

The following trends in survey responses should be considered when evaluating mitigation measures for Zones 1, 2 and 3:

- 52 percent of respondents do not want information from the city to protect their home/building from flooding. This could indicate a lack of trust in the city or a lack of interest in installing floodproofing measures.
- Over half of the respondents do currently have FEMA flood insurance.
- Of those respondents who have installed flood protection measures, re-grading property and sump pumps were the most popular methods; furthermore, re-grading of property, sump pumps and city-initiated drainage improvement projects appear to be the most effective measures for reducing flooding.
- 35 percent of respondents feel that storm sewer backup is the cause of flooding issues on their property. Drainage from nearby properties and overbank flooding are the next most popular responses.
- Over 50 percent of respondents have a slab foundation. 41 percent have been flooded.
- The majority of flooding has been over the first floor of the home and in crawl spaces.
- The majority of flooding lasted between one and four hours.

The years with the largest number of past flood insurance claims for repetitive loss properties in the City of Savannah are 1994, 1996 and 1999. The following flood events are detailed in NOAA's National Climatic Data Center (NCDC) database:

July 5, 1996 – Eight to ten (8-10) inches of rain fell in 3-4 hours in and around Savannah. As a result, 50 streets and 100 homes were flooded to various degrees. Numerous businesses had water several inches deep. There were 31,000 residents without power for several hours. This event also occurred close to high tide. Some streets had water up to headlights on cars while some homes had water almost knee deep.

August 7, 1996 – Four to eight inches of rain fell in two to four hours causing flash flooding of streets and small streams in Savannah.

June 29, 1999 – Slow moving showers and thunderstorms developed repeatedly across Chatham County and Effingham County during the day. Twenty-four-hour rainfall amounts ranged from about 7 inches to over 13 inches. As a result of the flooding, over 500 homes and businesses were damaged to varying degrees and almost 600 automobiles were damaged.

Water was as much as 6 ft deep in some places. Numerous roads were washed out and/or closed during the flooding. Estimated dollar damage for public property was 4.5 million dollars and at least another 2.5 million dollars for private property.

2.2 STEP 2. Contact Agencies and Organizations

The City of Savannah contacted external agencies and internal departments that have plans or studies that could affect the cause or impacts of flooding within the identified repetitive loss areas. The data collected was used to analyze the problems further and to help identify potential solutions and mitigation measures for property owners. Those agencies contacted and reports which were analyzed and reviewed included:

- City of Savannah Stormwater Management Department
- City of Savannah Public Works & Water Resources Bureau
- City of Savannah Community Planning & Development Department
- Georgia Emergency Management Agency – Repetitive Loss and Flood Insurance Data
- Federal Emergency Management Agency, City of Savannah, Georgia and Incorporated Areas Flood Insurance Study, 8-16-2018
- Federal Emergency Management Agency Flood Insurance Data (CIS): 9-11-2026
- City of Savannah Drainage Improvement Contractors
- City of Savannah Code of Ordinances
 - Land Development Code
 - Floodplain Management Ordinance
 - Water, Wastewater, and Stormwater Ordinance

2.2.1 Summary of Studies and Reports

FEMA Flood Insurance Study

FEMA's FIS for Chatham County, GA is dated August 16, 2018. The FIS revises and updates information on the existence and severity of flood hazards within the County including the City of Savannah. The FIS also includes revised digital Flood Insurance Rate Maps (FIRMs) which reflect updated Special Flood Hazard Areas (SFHAs) and flood zones for the City. SFHA boundaries within the City were updated due to new engineering analysis performed on Pipe Makers Canal and St. Augustine Tributary. The updated modeling produced new flood zone areas and new base flood elevations and leveraged the City's recently developed LiDAR-based topographic data.

FEMA Flood Risk Report

FEMA's Draft Flood Risk Report for Chatham County, GA (May 2014) analyzes inland riverine flood risk for the County including the City of Savannah. The report includes flood depth and analysis grids, Hazus estimated loss information and Areas of Mitigation Interest for the City.

Flood Insurance Claims Data

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.

Chatham-Savannah 2040-2045 Comprehensive Plan

The Chatham-Savannah Comprehensive Plan provides a unified, long-term vision for the City of Savannah and unincorporated Chatham County in the topics of land use, housing, economic development, transportation, natural resources, and quality of life. The plan establishes goals and policies that shape land use, infrastructure investment, and resource management while responding to risks associated with climate change and coastal hazards. Within coastal high hazard areas, these goals emphasize reducing vulnerability to flooding, storm surge, and sea level rise by discouraging inappropriate development, promoting resilient design, and prioritizing the protection of natural systems that buffer coastal impacts.

Capital Improvement Plan

Preparation of the City's annual budget includes the preparation of a long-range Capital Improvement Plan (CIP). This planning document is a five-year outlook for anticipated community investment projects designed to facilitate decision makers in the replacement of capital assets. The projects are primarily related to improvement in roads and drainage, parks and recreation, public utilities and facilities. Through coordinated planning and centralized grants management, the CIP can help direct funding toward capital projects that address vulnerabilities, leverage external resources, and support a more resilient future for the City of Savannah.

2.3 STEP 3. Building Data Collection

The site survey for this analysis was conducted in May 2021. The National Tool Limited View was not utilized in this effort, but most of the information required by the National Tool was incorporated into the mobile application survey. The mobile application generated data collection forms are included in Appendix C. (Note: In accordance with the Privacy Act of 1974, Appendix C will not be shared with the general public).

In addition, photos were taken of each structure surveyed. Photos were also taken of current drainage features and mitigation and floodproofing measures if evident from street or parking lot views. The following information was recorded for each property:

- Existing mitigation observed
- Type and condition of the structure and foundation
- Number of stories
- Height above street grade and height above site grade
- Presence and type of appurtenant structures
- Flood zone and type of flooding source
- Likely areas and severity of damage on property
- Presence of any HVAC units that would be vulnerable

Data was also gathered, when possible, through conversations with property owners and/or residents. These conversations provided detail on the extent of flooding, potential causes of flooding, and recollections from past flood events, which help to better understand flooding issues for these areas.

Table 2.1 on the following page details the percentage of each repetitive loss area that falls within the 1%-annual-chance, 0.2%-annual-chance, or Unshaded Zone X flood zones.

Table 2.1 – Repetitive Loss Area Percentage of Acreage by Flood Zone

REPETITIVE LOSS AREA	TOTAL ACREAGE	PERCENTAGE OF AREA		
		ZONE AE	ZONE X SHADED	ZONE X
		1%-ANNUAL-CHANCE	0.2%-ANNUAL-CHANCE	UNSHADED
1	0.85	96%	4%	0%
2	0.83	100%	0%	0%
3	0.86	0%	100%	0%
4	0.45	0%	0%	100%
5	0.29	0%	0%	100%
6	0.15	0%	0%	100%
7	91.37	73%	23%	4%
8	2.49	0%	97%	3%
9	1.23	100%	0%	0%
10	4.82	88%	4%	8%
11	3.11	100%	0%	0%
12	3.02	100%	0%	0%
13	75.79	0%	0%	100%

PERCENTAGE OF AREA

REPETITIVE LOSS AREA	TOTAL ACREAGE	PERCENTAGE OF AREA		
		ZONE AE 1%-ANNUAL-CHANCE	ZONE X SHADED 0.2%-ANNUAL-CHANCE	ZONE X UNSHADED
14	3.51	0%	0%	100%
15	6.06	0%	0%	100%
16	1.19	0%	0%	100%
17	4.02	0%	0%	100%
18	27.87	0%	0%	100%
19	1.72	0%	0%	100%
20	2.81	0%	0%	100%
21	5.51	0%	0%	100%
22	2.81	0%	0%	100%
23	4.27	0%	0%	100%
24	0.87	100%	0%	0%
25	0.83	100%	0%	0%
26	1.63	0%	0%	100%
27	4.14	0%	0%	100%
28	5.09	100%	0%	0%
29	1.54	0%	0%	100%
30	1.20	100%	0%	0%
31	1.33	39%	36%	25%
32	1.99	0%	85%	15%
33	18.38	1%	8%	91%
34	2.18	0%	0%	100%
35	0.85	0%	24%	76%
36	4.53	12%	62%	26%
37	0.45	0%	100%	0%
38	0.74	6%	94%	0%
39	2.16	0%	88%	12%
40	4.07	7%	59%	34%
41	1.65	54%	46%	0%
42	1.45	63%	37%	0%
43	3.77	47%	21%	32%
44	1.53	0%	0%	100%
45	1.14	100%	0%	0%
46	3.67	0%	47%	53%
47	1.65	0%	68%	32%
48	1.73	0%	0%	100%

PERCENTAGE OF AREA

REPETITIVE LOSS AREA	TOTAL ACREAGE	PERCENTAGE OF AREA		
		ZONE AE 1%-ANNUAL-CHANCE	ZONE X SHADED 0.2%-ANNUAL-CHANCE	ZONE X UNSHADED
49	19.49	0%	0%	100%
50	1.31	0%	0%	100%
51	9.59	0%	0%	100%
52	4.76	95%	0%	5%
53	4.16	64%	0%	36%
54	2.79	40%	0%	60%
55	1.96	30%	0%	70%
56	1.02	86%	0%	14%
57	3.36	37%	0%	63%
58	1.81	100%	0%	0%
59	59.16	58%	14%	28%
60	1.70	0%	0%	100%
61	2.05	67%	18%	15%
62	4.93	82%	5%	13%
63	2.84	97%	3%	0%
64	4.35	0%	0%	100%
65	1.34	49%	29%	23%
66	2.77	100%	0%	0%
67	18.18	83%	5%	12%
68	5.36	0%	80%	20%
69	0.87	0%	0%	100%
70	3.05	100%	0%	0%
71	2.41	0%	0%	100%
72	1.98	0%	0%	100%
73	3.67	0%	0%	100%
74	2.15	0%	0%	100%
75	7.15	56%	5%	39%
76	9.81	3%	0%	97%
77	1.29	0%	0%	100%
78	1.37	0%	0%	100%
79	1.57	0%	0%	100%
80	11.14	0%	48%	52%
81	4.74	0%	31%	69%
82	0.82	0%	0%	100%
83	13.47	22%	25%	53%

REPETITIVE LOSS AREA	TOTAL ACREAGE	PERCENTAGE OF AREA		
		ZONE AE 1%-ANNUAL-CHANCE	ZONE X SHADED 0.2%-ANNUAL-CHANCE	ZONE X UNSHADED
84	2.85	0%	0%	100%
85	2.00	36%	0%	64%
86	3.17	78%	5%	17%
87	7.71	0%	0%	100%
88	22.11	100%	0%	0%
89	5.03	92%	8%	0%

2.3.1 Zone 1 – Downtown/Historic/Midtown

Problem Statement

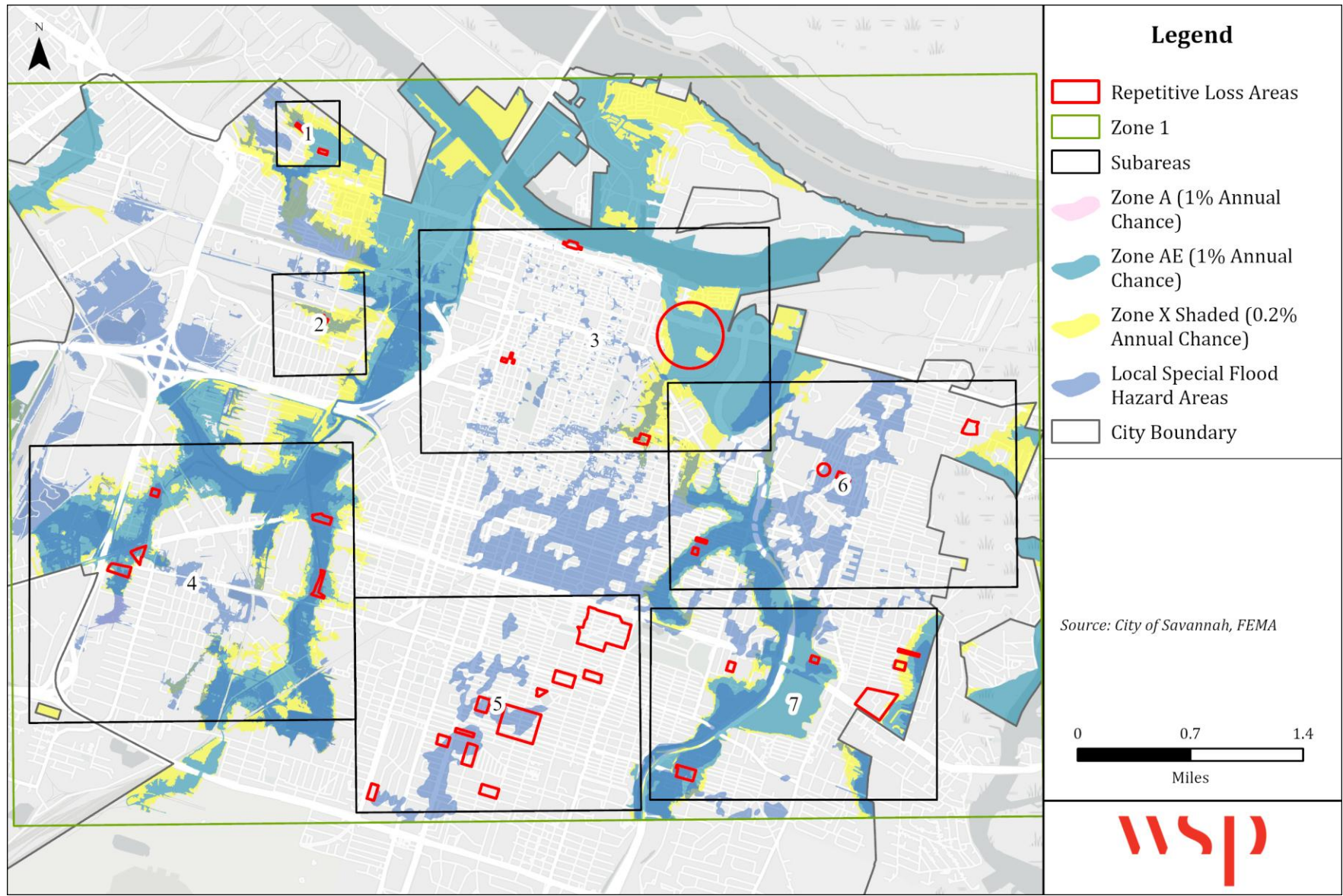
Zone 1 is located in northeastern Savannah adjacent to the Savannah River. There are 15 identified historic districts within Zone 1; all of these are listed on the National Register of Historic Places. Historic properties and cultural resources are of high community value in Savannah, in terms of national recognition (heritage); tourism and convention traffic (business, entertainment); restoration and habitation of residential properties (real estate); appropriate and beneficial business use (local economy); and other such factors.

Zone 1 contains a total of 7 Subareas and 36 Repetitive Loss Areas. Portions of Zone 1 are located within the 100-year floodplain and are subject to periodic flooding from poor drainage proximity to the tidally influenced Savannah River and a number of historic structures built prior to the NFIP. The effort to reduce repetitive flooding becomes somewhat more complex with the structure type and historic nature of some buildings. In accordance with FEMA publication 551 *Selecting Appropriate Mitigation Measures for Floodprone Structures*, mitigation options are limited for historic structures. The approach to reducing repetitive flooding in Zone 1 will require a combination of floodproofing techniques, education, and drainage improvement projects.

Figure 2.4 – Flooding in Zone 1: Downtown/Historic/Midtown



Figure 2.5 – Subareas located in Zone 1



Subarea 1

Overview

Subarea 1 contains 2 repetitive loss areas that are located almost entirely within the 100-year floodplain (Zone AE). Subarea 1 is located in an older, established neighborhood with structures built circa 1950-1960.

Table 2.2 – Repetitive Loss Area Overview for Subarea 1

Repetitive Loss Area	# of RL Properties	# of Additional Properties	Total # of Properties in RL Area	Road Names	% of Area in SFHA
1	1	5	6	Fox Street, Cleland Street, Tuten Avenue	96%
2	1	4	5	Damon Street	100%

Findings

The inspected repetitive loss properties are generally characterized by one-story, single-family residential structures with no basements. Most structures were occupied at the time of inspection, although one was noted as unoccupied and one property had no structure present. The typical structure type was wood frame construction, with masonry documented for one property.

Based on the field report results, 36 percent of homes were recorded as having a slab-on-grade foundation type while 45 percent have a crawlspace. The condition of both structures and foundations was generally rated as good with optional minor repairs, with one property rated fair and needing minor repairs. Recorded fill was most often 0–1 foot, while elevation values most frequently ranged from 2–3 feet or 3–4 feet, with one structure recorded at 0–1 foot.

According to the field reports, approximately 90 percent of the properties were documented as not having gutters. Only one HVAC unit was observable from the right-of-way and was located at ground level.



Abandoned house with repairs needed

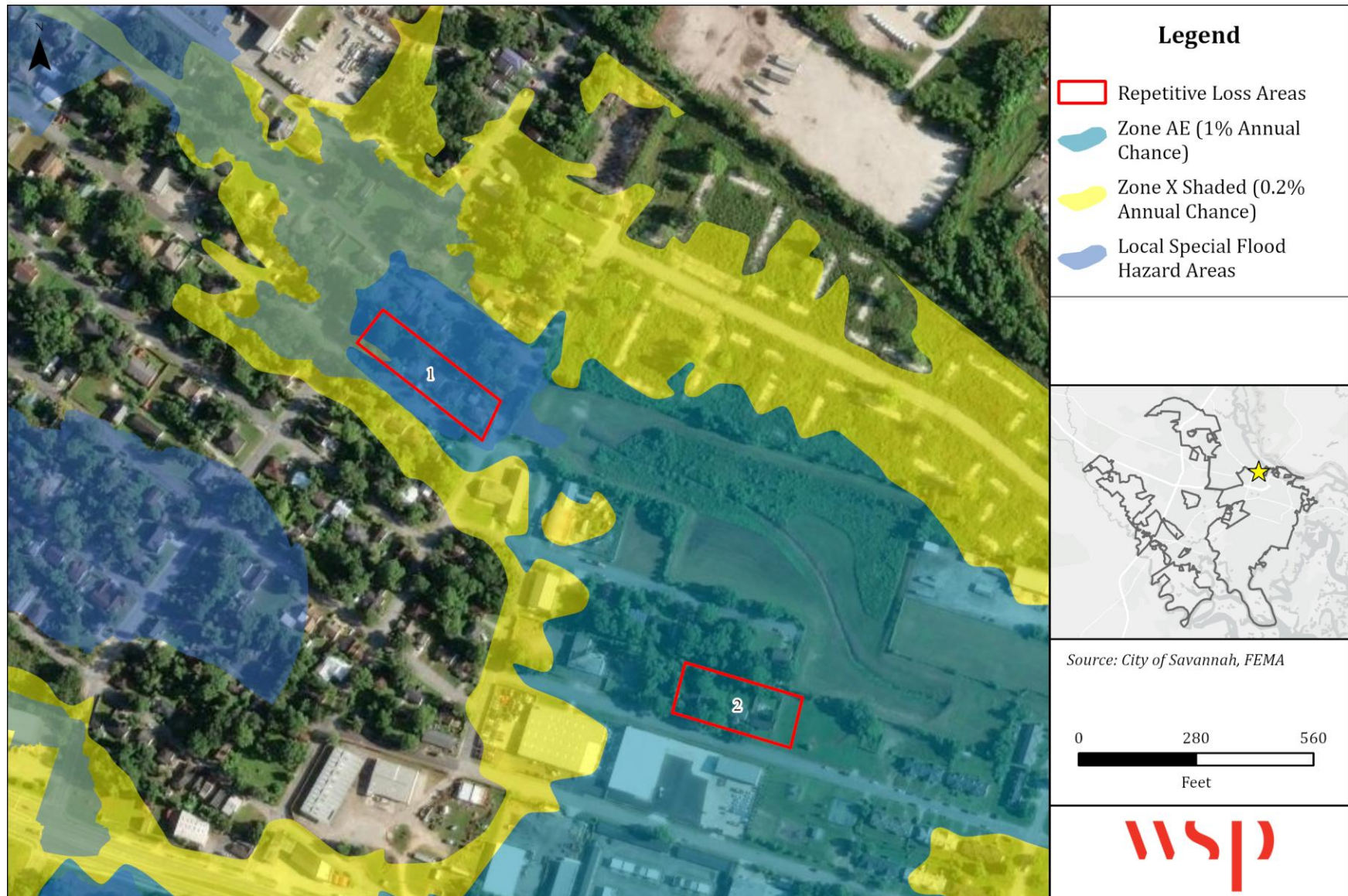


House with a crawlspace foundation type
and an HVAC unit at ground level



Empty lot with drainage inlet

Figure 2.6 – Repetitive Loss Subarea 1



Subarea 2

Overview

Repetitive Loss Area 3 is located entirely within the 500-year floodplain (Zone X Shaded). Subarea 2 contains several vacant lots and abandoned properties.

Table 2.3 – Repetitive Loss Area Overview for Subarea 2

Repetitive Loss Area	# of RL Properties	# of Additional Properties	Total # of Properties in RL Area	Road Names	% of Area in the SFHA
3	1	5	6	Stokes Street, Magazine Ave.	0%

Findings

Of the properties reviewed, three properties were documented as empty lots with no structure present, while the remaining inspected structures were generally one-story residential buildings with no basements.

Among the properties with structures present, wood frame construction was the most common structure type, recorded for two properties, while one structure was documented as concrete. Two of the structures were recorded as having slab-on-grade foundations, and one was recorded as having a crawlspace.

Where noted, fill was generally documented as none or 0–1 foot, while elevation values ranged from 2–3 feet to 3–4 feet. According to the field reports, gutters were absent from all improved properties.



Abandoned house with crawlspace



House with curbs and drainage inlet located in front yard

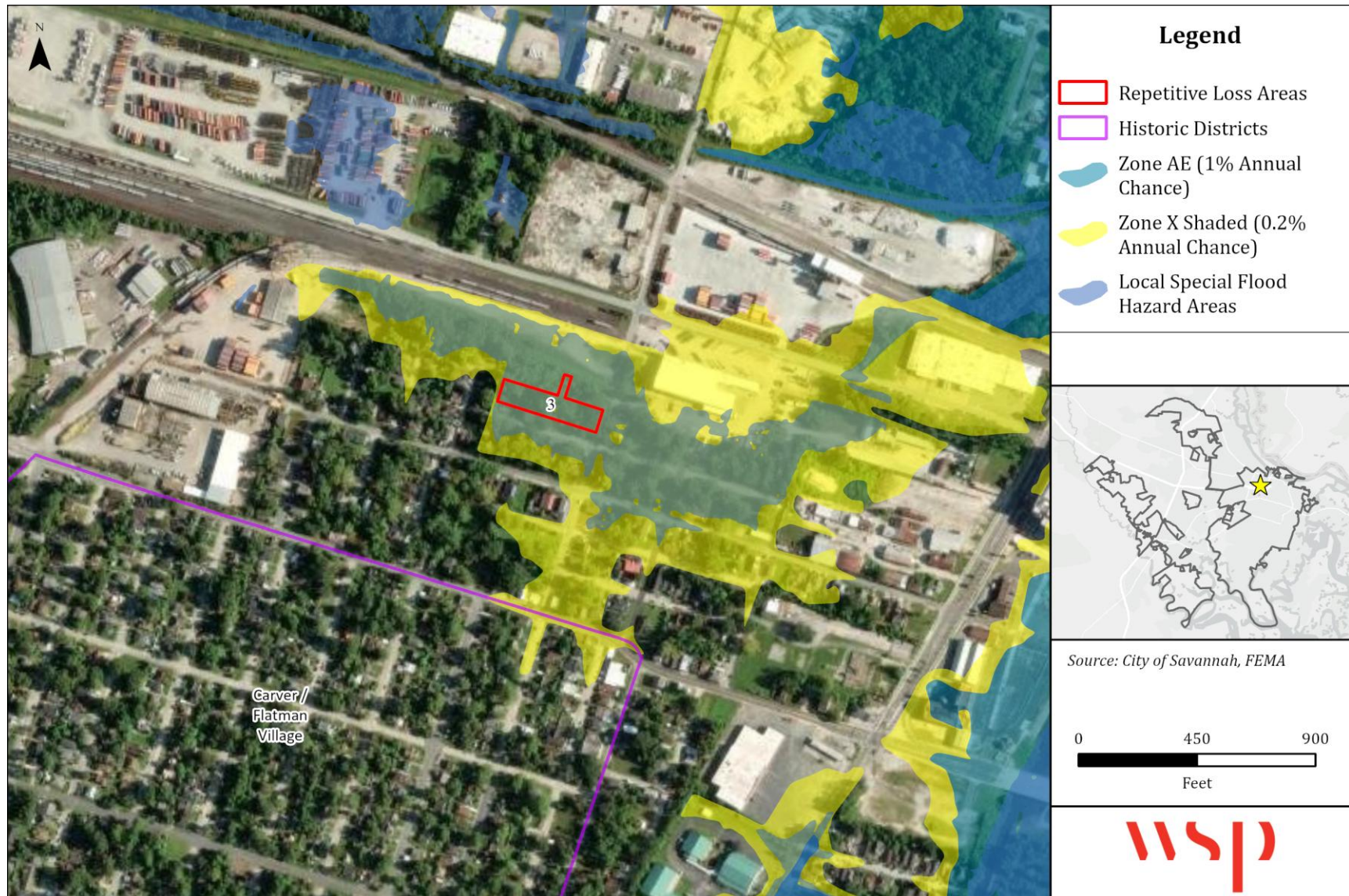


Vacant lot



Multi-family duplex with a raised slab-on-grade foundation

Figure 2.7 – Repetitive Loss Subarea 2



Subarea 3

Overview

Repetitive Loss Areas 7 is located majority within the 100-year or 500-year floodplains (Zones AE and X Shaded). A portion of Repetitive Loss Area 8 is located within the Eastside Historic District which is predominantly residential. Repetitive Loss Areas 4, 5 and 6 are located entirely within the Savannah Historic Landmark District but are not located within the 100-year or 500-year floodplain. The Landmark District is known for its outstanding variety of architectural styles, including residential, commercial, and institutional buildings. Area 85 is also located in the Landmark District and is partially within the 100-year floodplain (Zone AE).

Table 2.4 – Repetitive Loss Area Overview for Subarea 3

Repetitive Loss Area	# of RL Properties	# of Additional Properties	Total # of Properties in RL Area	Road Names	% of Area in the SFHA
4	1	1	2	Jefferson St., W. Gaston St.	0%
5	1	7	8	Tattnall St., Jefferson St., W. Wayne St.	0%
6	1	4	5	W. Gaston Street, W. Gordon Lane, Tattnall Street	0%
7	1	0	1	E. President St.	73%
8	2	5	7	Paulsen Street, E. Gwinnett Street, E. Gwinnett Lane, Burton Court	0%
85	1	2	3	Bay St., River St.	36%

*This area contains multi-unit structures. Property count reflects structure count, not unit count.

Findings

Subarea 3 is characterized primarily by residential and commercial development and a few vacant or undeveloped lots. Among developed properties, residential buildings were the most common land use, consisting primarily of single-family residences, townhome-style units, and multifamily residential buildings, with several commercial properties and institutional structures also present. Majority of the structures were rated as being in good condition, while a few were rated fair and only one property was identified as being in poor condition.

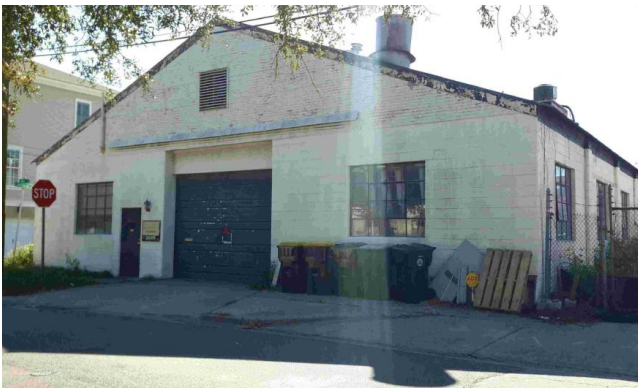
Slab-on-grade foundations were the predominant foundation type, while the remaining structures were supported by crawlspace foundations. Site elevations varied from grade to several feet above grade, with many structures reported as having between 0 and 3 feet of elevation and a few commercial buildings elevated as much as 4 to 6 feet or more. Field reports indicated that the majority of properties in this subarea are missing gutters.



At grade residential building with drainage inlet and curbs located on corner



Waterfront hotel with brick masonry and attached parking garage

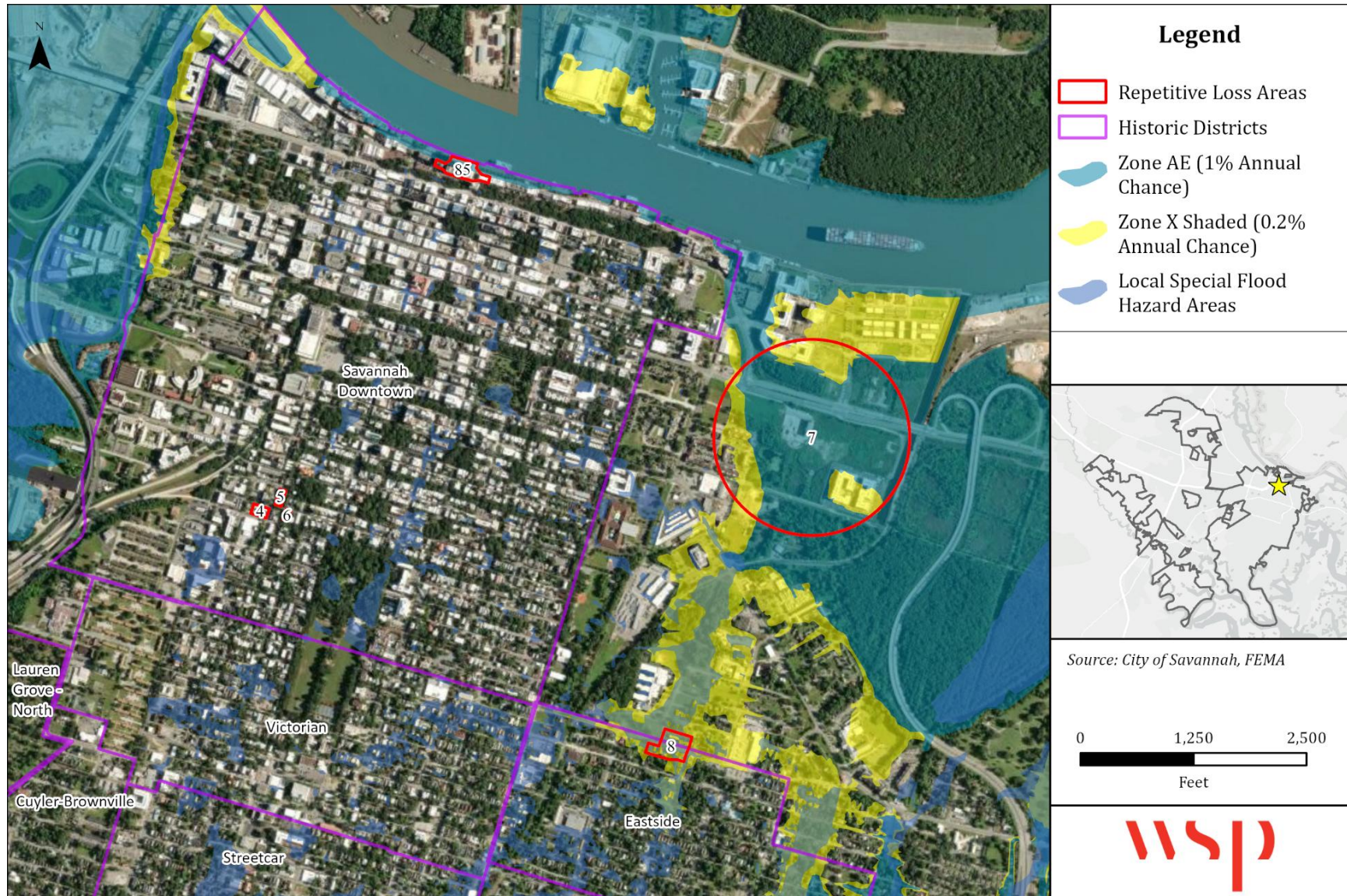


Commercial building with concrete structure type and no gutters



Sab-on-grade church with drainage inlet located in front

Figure 2.8 – Repetitive Loss Subarea 3



Subarea 4

Overview

Repetitive Loss Areas 9, 11 and 12 are located entirely within the 100-year floodplain (Zone AE); Repetitive Loss Areas 10 and 88 are located mostly within the 100-year floodplain (Zone AE) with small areas in the 500-year floodplain (Zone X Shaded). Repetitive Loss Area 11 is located within the Cuyler-Brownsville Historic District which is one of the oldest African American neighborhoods in Savannah. The Cuyler-Brownsville District contains single and multiple family residences, attached row houses, detached commercial buildings and community landmark buildings.

Table 2.5 – Repetitive Loss Area Overview for Subarea 4

Repetitive Loss Area	# of RL Properties	# of Additional Properties	Total # of Properties in RL Area	Road Names	% of Area in the SFHA
9	1	1	2	Corvair Ave., Hobson Ave., Palmetto Ave.	100%
10	1	7	8	Mills B Lane Blvd., Act Blvd.	88%
11	2	2	4	W. 42 nd St., Ogeechee Rd., W. Victory Dr.	100%
12	2	2	4	W. 48 th St., W. 49 th St., W. 51 st St., Stanley St.	100%
86	1	3	4	Ogeechee Rd., Mills B Lane Blvd.	78%

*This area contains multi-unit structures. Property count reflects structure count, not unit count.

Findings

Based on the field reports, subarea 4 is characterized by a mix of residential and commercial properties, with a small number of vacant lots and parcels where no structures were present at the time of inspection. The developed properties were predominantly one-story buildings with no basements and were generally occupied and maintained in fair to good condition. Most structures were reported to require only minor repairs, although a few properties exhibited signs of deterioration or deferred maintenance.

Foundation types were overwhelmingly slab-on-grade, with only a limited number of structures utilizing crawlspace foundations. Foundation conditions were generally consistent with overall building conditions and were typically rated as fair to good.

Site characteristics indicate that many structures were constructed at grade or only slightly elevated above surrounding ground elevations. Reported fill depths were generally minimal, and many properties had elevations ranging from at grade to a few feet above adjacent terrain.

These characteristics suggest a relatively low degree of structural elevation throughout the subarea.

Field reports noted the absence of gutters on multiple buildings. Several sites contained accessory structures such as detached garages, sheds, or outbuildings, while commercial properties were often associated with large paved or impervious areas. A number of properties were also located near drainage features or low-lying areas that could influence local drainage patterns.



Slab-on-grade house with ground level HVAC unit



Commercial building with large impervious parking lot and no gutters



Slab-on-grade commercial building with large impervious parking lot

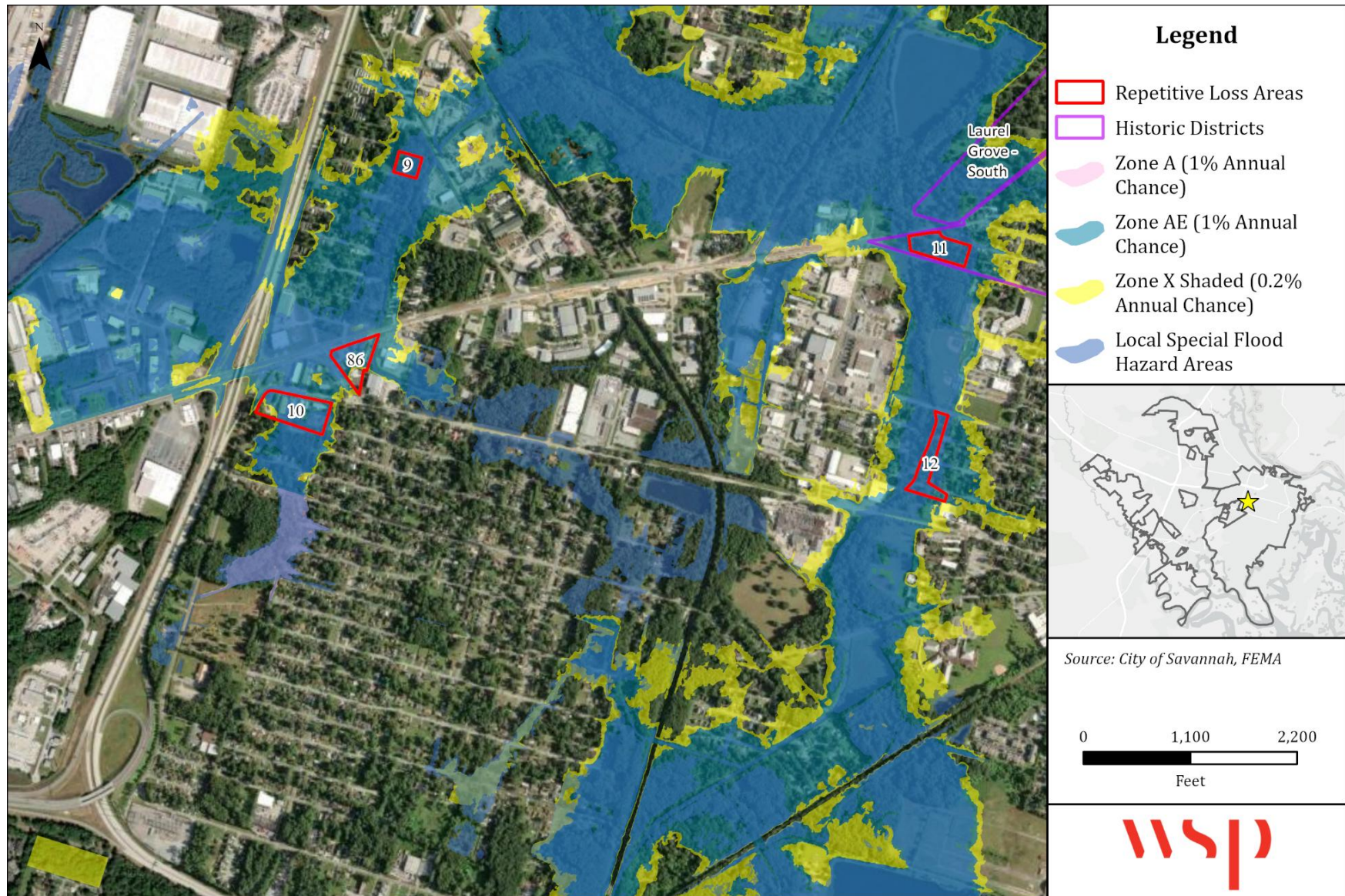


Single-family house with crawlspace



Vacant single-story building in poor condition

Figure 2.9 – Repetitive Loss Subarea 4



Subarea 5

Overview

Repetitive Loss Areas 13 through 23 is located within the Zone X Unshaded flood zone. Repetitive Loss Areas 13 and 14 are located within the Ardsley Park-Chatham Crescent Historic District, which is a large, highly intact residential area consisting predominantly of one- and two-story single family homes.

Table 2.6 – Repetitive Loss Area Overview for Subarea 5

Repetitive Loss Area	# of RL Properties	# of Additional Properties	Total # of Properties in RL Area	Road Names	% of Area in the SFHA
13	30	72	102	E. Victory Lane, E. 44 th Street, E. 45 th Street, E. 46 th Street, E. Chatham Cres, Harmon Street, Waters Avenue, Washington Avenue, Paulsen Street, Washington Lane	0%
14	3	12	15	E. 50 st Street, E. 51 st Street, Harmon Street	0%
15	3	16	19	E. 52 nd Street, E. 53 rd Street, Paulsen Street, Atlantic Avenue	0%
16	1	4	5	E. 54 th Street, E. 55 th Street, Atlantic Avenue	0%
17	3	6	9	E. 57 th Street, E. 58 th Street, Habersham Street	0%
18	9	37	46	E. 57 th Street, E. 58 th Street, Columbus Drive, Columbus Lane, Reynolds Street, Battey Street	0%
19	1	8	9	E. 60 th Street, Habersham Street, GA-204 East	0%

Repetitive Loss Area	# of RL Properties	# of Additional Properties	Total # of Properties in RL Area	Road Names	% of Area in the SFHA
20	1	5	6	E. 61 st Street, E. 62 nd Street, GA-204 West	0%
21	1	2	3	Habersham Street, E. 61 st Street, E. 62 nd Street, E. 63 rd Street	0%
22	1	7	8	Berkeley Place, Sylvan Drive, Herty Drive	0%
23	1	7	8	E. 64 th Street Battey Street Reynolds Street	0%

Findings

The properties within subarea 5 are predominantly residential, consisting primarily of single-family homes with a smaller number of multi-family and commercial structures. The buildings are generally in good condition, with most buildings rated as requiring only optional minor repairs. Buildings are typically one to two stories in height, and the vast majority do not have basements. Foundation types are overwhelmingly crawlspace foundations with a few slab-on-grade foundations. Most foundations and structures were noted to be in good condition, though isolated observations identified damaged vents, minor foundation deterioration, and poor ventilation conditions on some properties.

Most homes are elevated between 2 and 6 feet above grade, with only a limited number of properties observed at lower elevations or constructed directly on slabs. Detached garages, sheds, and accessory buildings were frequently observed across the study area, and several properties had HVAC units located on the ground or only minimally elevated, while others had been elevated above anticipated flood levels.

The majority of buildings in this subarea do not have gutters or downspouts. Stormwater drainage infrastructure was observed but was not widespread. Several field reports specifically noted the presence of storm drains, drainage holes, yard drains, drainage inlets, or street drainage features. However, a number of these observations indicated drainage deficiencies, including clogged storm drains, semi-clogged storm drains, clogged drainage structures, streets lacking adequate drainage, standing water indicators, and reports of roadway flooding. These observations suggest that drainage infrastructure is present in portions of the subarea but may be insufficient or poorly maintained in some locations.



Single apartment building with multiple claims for contents loss. Owner has built a brick wall and placed a barrier against the adjacent fence to keep water out of home.



House with crawlspace foundation and ground level HVAC



Stormwater drainage inlet

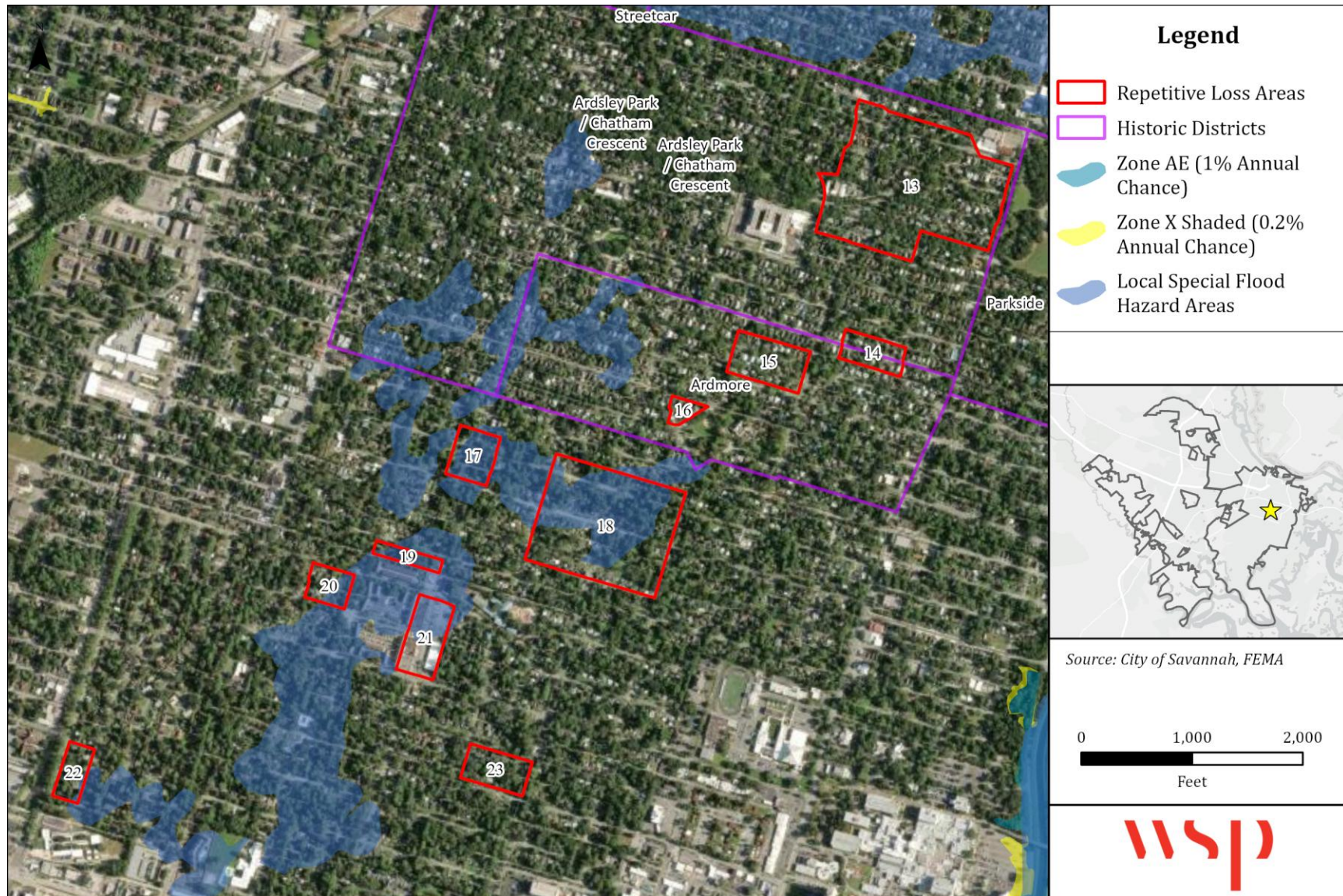


Single family home with HVAC raised to first floor



Commercial building with large impervious parking lot

Figure 2.10 – Repetitive Loss Subarea 5



Subarea 6

Overview

Repetitive Loss Areas 24 and 25 are located within the 100-year floodplain (Zone AE). Repetitive Loss Areas 26, 27 and 84 are located within the Zone X Unshaded flood zone. There is a mixture of newer and older homes within Subarea 6. Some homeowners have taken mitigation actions such as elevating HVAC units.

Table 2.7 – Repetitive Loss Area Overview for Subarea 6

Repetitive Loss Area	# of RL Properties	# of Additional Properties	Total # of Properties in RL Area	Road Names	% of Area in the SFHA
24	1	3	4	E9. 35 th Street, Cedar Street	100%
25	1	5	6	E.7 32 nd Lane, E. 33 rd Street, Cedar Street	100%
26	2	9	11	Screven Place, Screven Avenue, Greenville Street	0%
27	1	3	4	Capital Street, Causton Bluff Road, Gregory Street	0%
84	1	0	1	Lawton Avenue	0%

Findings

Subarea 6 is composed primarily of single-family residential properties, with a small number of commercial buildings. Building structure type is generally a mix of wood-frame and masonry structures, with a few concrete and steel commercial buildings. The overall condition of both structures and foundations is generally good, with most field reports noting only optional minor repairs.

Foundation types vary throughout the subarea but are dominated by slab-on-grade foundations, crawlspace foundations, and elevated foundation walls with full or partial enclosures.

Residential structures are commonly elevated between 1 and 4 feet above grade, while some properties have elevations as high as 4 to 6 feet.

Only a very small number of properties were observed to have gutters installed. Detached garages, sheds, and storage buildings were observed at several properties, and many homes had HVAC units located at or near ground level.

Stormwater drainage infrastructure is present but not widespread. Several field reports specifically documented stormwater drains or inlets located near residential properties, particularly at street corners and along roadways. These observations indicate that stormwater drainage infrastructure

exists within the subarea, although it was only noted at a limited number of locations and was not a dominant feature throughout all neighborhoods.



Slab-on-grade house with no gutters and a drainage inlet on the corner



Commercial building with large impervious parking lot

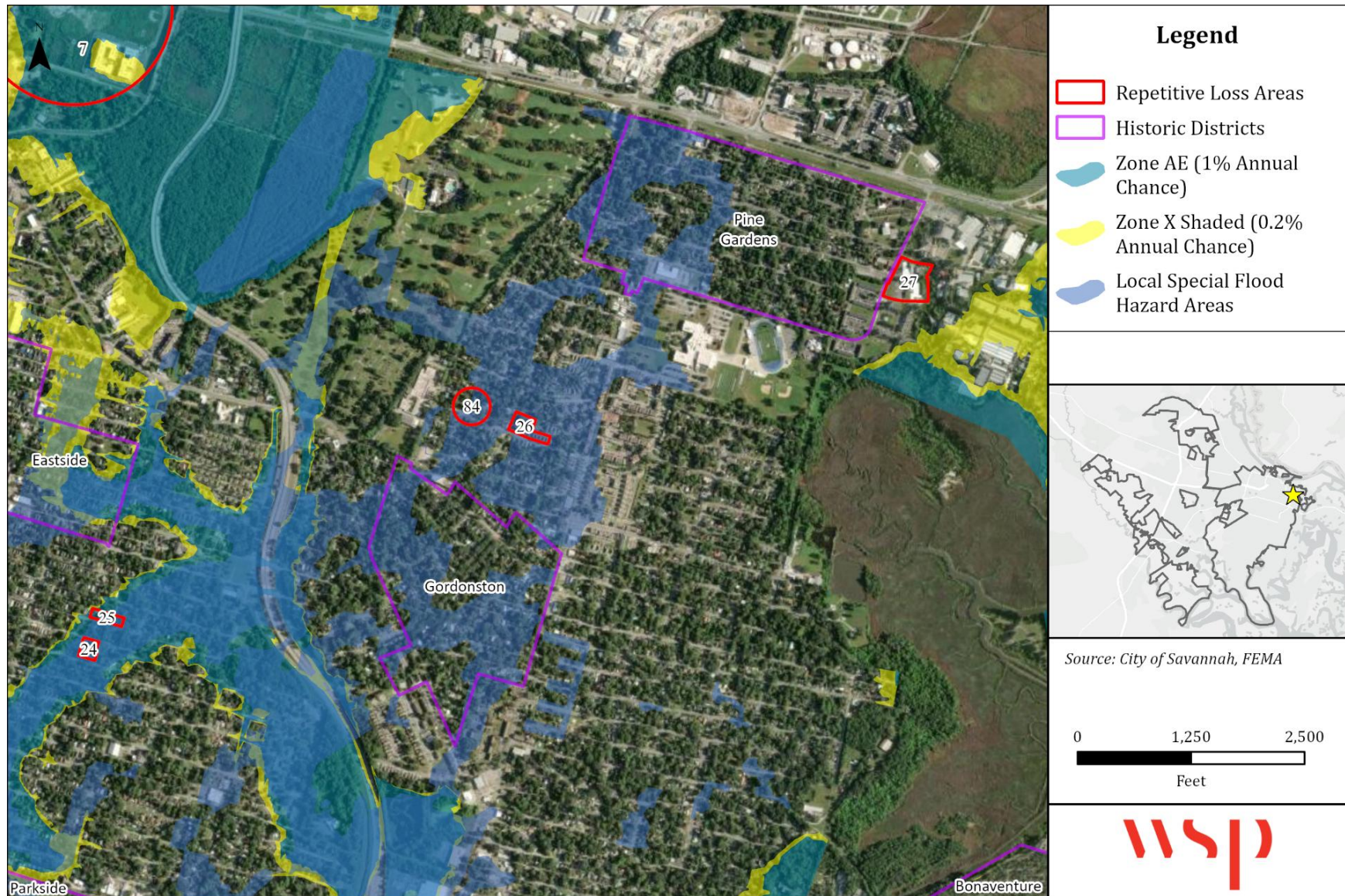


Two story house with gutters



House with HVAC unit at ground level

Figure 2.11 – Repetitive Loss Subarea 6



Subarea 7

Overview

Repetitive Loss Areas 28 and 30 are located entirely within the 100-year floodplain (Zone AE). Repetitive Loss Areas 31 is partially location within the 100-year floodplain (Zone AE). Repetitive Loss Area 33 is mostly located within the Zone X Unshaded flood zone with a small portion of the area lying with the 100-year (Zone AE) and 500-year (Zone X Shaded) floodplain. There is a mixture of single-family and multi-family homes in Subarea 7. Some homeowners have taken mitigation actions such as elevating their HVAC units.

Table 2.8 – Repetitive Loss Area Overview for Subarea 7

Repetitive Loss Area	# of RL Properties	# of Additional Properties	Total # of Properties in RL Area	Road Names	% of Area in the SFHA
28	4	12	16	E. 58 th Street, Delesseps Avenue, Costa Rica Street, Honduras Street	100%
29	1	7	8	Grenoble Street, Wicklow Street	0%
30	2	3	5	E. 41 st Street, E. 42 st Street, Wallin Street	100%
31	1	5	6	E. 38 th Street	39%
32	1	6	7	E. 39 th Street, Herbed Street	0%
33	3	25	28	E. 43 rd Street, Evergreen Avenue, US-80 West	1%

Findings

Subarea 7 consists primarily of single-family residential properties, with smaller concentrations of multi-family residential buildings and a few institutional or commercial uses. The buildings are predominantly one-story masonry, wood-frame, and concrete structures, although several two-story homes and apartment buildings were also documented. Overall, structures and foundations were generally reported to be in good condition, with only a limited number of properties noted as requiring minor repairs and a few isolated cases of more substantial structural deterioration.

Foundation types are primarily slab-on-grade and crawlspace foundations, with crawlspaces being more common in some portions of the subarea. Most residential buildings were elevated between 0 and 4 feet above grade, although a number of properties were noted as being at grade or situated slightly below surrounding street elevations. Crawlspace foundations were

generally reported to be in good condition, while slab foundations were common among older masonry homes and many multi-family buildings.

The majority of buildings do not have gutters or downspouts. Several properties were observed adjacent to one or more storm drains, and drainage ditches were a recurring site characteristic in some neighborhoods. Many properties also had HVAC equipment located on the ground or on back porches, while a smaller number had elevated units or protective measures installed. Some residents reported undertaking mitigation activities such as constructing barriers, installing gutters, or elevating equipment to reduce flood impacts.



Slab-on-grade house lacking gutters and has a drainage inlet in front yard



Multi-family townhomes with slightly raised HVAC system

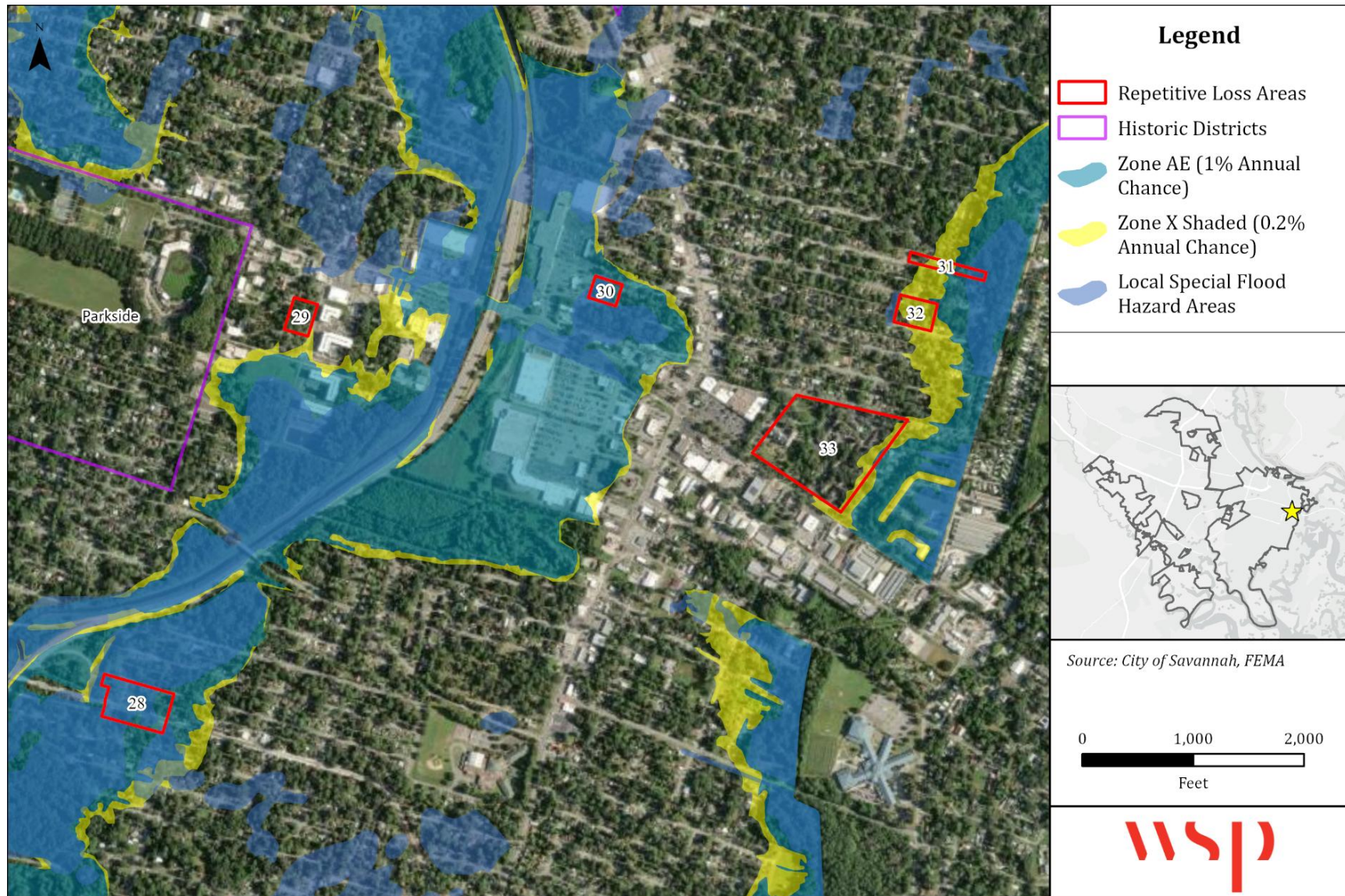


Stormwater drain in front yard



Slab-on-grade house lacking gutters and has a drainage inlet in front yard

Figure 2.12 – Repetitive Loss Subarea 7



2.3.2 Zone 2 – Southcentral

Problem Statement

Zone 2 is located in eastern Savannah, south of Zone 1. There are two historic districts within Zone 2, the Fairway Oaks-Groenvue District and the Kensington Park/Groveland District, which are both listed on the National Register of Historic Places. Zone 2 contains a total of 6 Subareas and 37 Repetitive Loss Areas. Portions of Zone 2 are located within the 100-year floodplain and are subject to periodic flooding from tidally influenced rivers and streams. The effort to reduce repetitive flooding depends partly on structure type and the historic nature of the building. The approach to reducing repetitive flooding in Zone 2 will require a combination of floodproofing techniques, education, and drainage improvements.

Figure 2.13 – Flooding in Zone 2: Southcentral



Source: Savannah Morning News

Subarea 8

Overview

Large portions of Repetitive Loss Areas 41 through 43 are located within the 100-year floodplain (Zone AE). The entirety of Repetitive Loss Area 44 and a portion of Repetitive Loss Area 43 are located within the Fairway Oaks-Greenview Historic District. The Fairway Oaks – Greenview Historic District consists of two contiguous and historically related suburban residential subdivisions. Many of the homes within this subarea contain a drainage ditch in the yard.

Table 2.9 – Repetitive Loss Area Overview for Subarea 8

Repetitive Loss Area	# of RL Properties	# of Additional Properties	Total # of Properties in RL Area	Road Names	% of Area in the SFHA
34	1	2	3	Linden Lane, Alpine Drive, White Bluff Road	0%
35	1	3	4	Groveland Circle	0%
36	2	5	7	Althea Court, Kensington Court, Johnston St.	12%
37	1	1	2	McLaws Street	0%
38	1	2	3	Lee Blvd., Andover Drive	6%
39	1	5	6	Wheeler Street	0%
40	5	11	16	Wheeler Street, Jackson Blvd.	7%
41	2	5	7	Lee Blvd.	54%
42	1	6	7	Bracken Lane, Waters Avenue, Meridian Drive, Maribob Circle	63%
43	1	3	4	Sweet Bay Lane, Bracken Lane	47%
44	1	4	5	Harlan Drive, Brightwood Drive	0%

Findings

The properties in Subarea 8 are predominantly single-family residential homes that are generally in good condition with only minor repairs noted. Buildings are primarily masonry construction, with a smaller number of wood-frame and mixed-construction homes. Most structures are one-story residences, although a notable number of two-story homes are also present, and a few larger homes with three stories were observed. Foundations are primarily slab-on-grade, with crawlspace foundations present on a smaller share of properties. Overall, the structures appeared well maintained, and most foundations were reported to be in good condition.

The surveyed properties exhibit a range of elevations, with many homes elevated between 1 and 4 feet above adjacent grade, while others were at grade or only slightly elevated. Fill conditions varied, but many properties had little to moderate fill, and several homes were observed in locations below surrounding street grades. Some homes were located adjacent to swales, culverts, drainage creeks, or other stormwater conveyance features.

The overwhelming majority of properties were specifically noted as having no gutters or downspouts. Only a small number of homes were observed to have partial gutter systems. As a result, the dominant characteristic throughout the study area is a lack of roof runoff collection and conveyance systems.

Stormwater infrastructure is present throughout portions of the subarea. Several field reports identified storm drains, catch basins, drainage ditches, culverts, drainage creeks, and front-yard drains. Flooding conditions varied across the surveyed properties. Some homeowners reported previous flooding in yards, streets, or structures, while other properties had no reported flooding history.



Slab-on-grade house with HVAC located on ground level



Single family residential home with culvert running through front yard

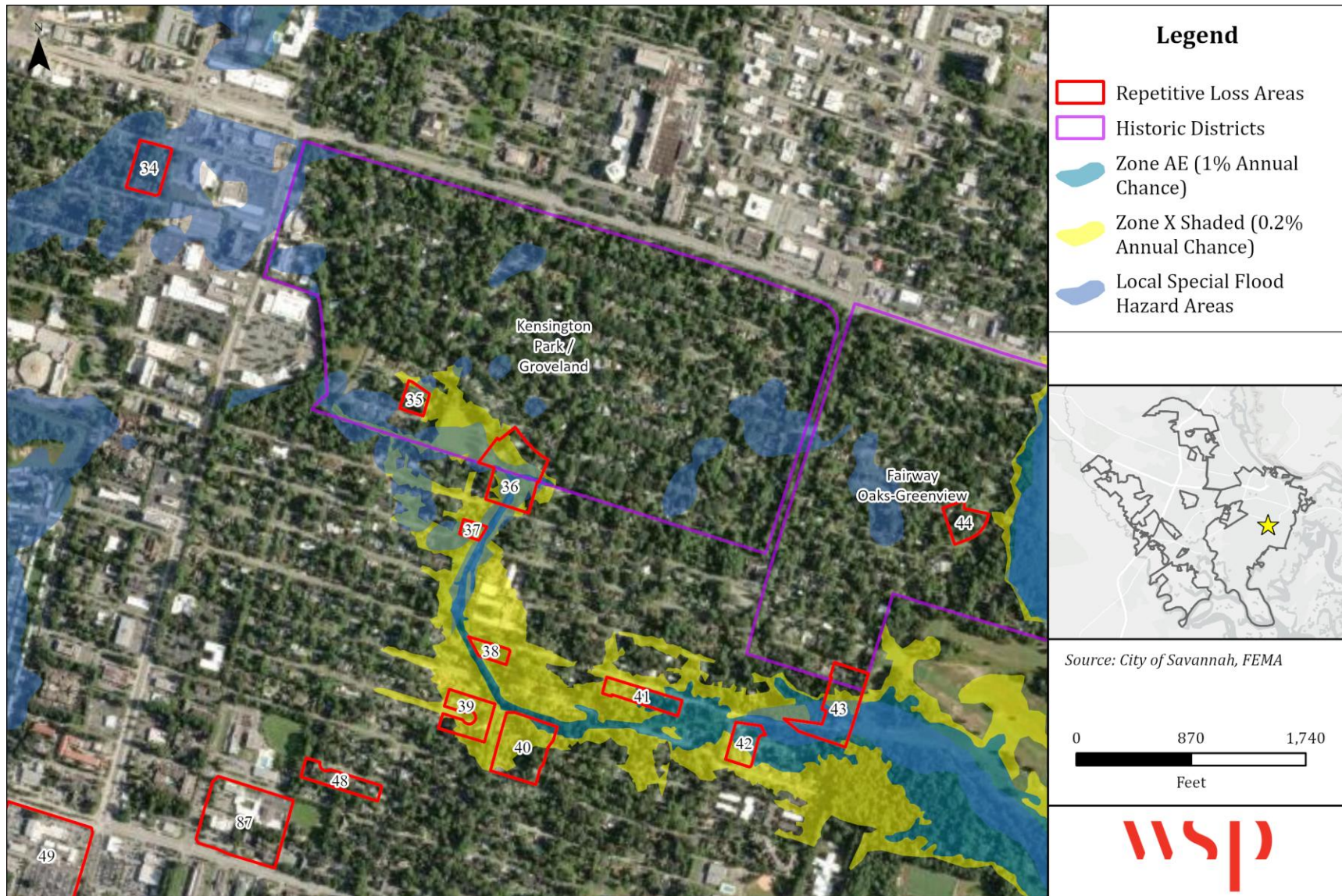


Slab-on-grade house with no gutters and a culvert running through front yard



Two story house with a crawlspace foundation and gutters

Figure 2.14 – Repetitive Loss Subarea 8



Subarea 9

Overview

Repetitive Loss Area 45 is entirely located within the 100-year floodplain (Zone AE). Portions of Repetitive Loss Area 46 and 47 are located within the 500-year (Zone X Shaded) flood zone. Many of the homes within this subarea contain a stormwater drainage inlet on or adjacent to the property.

Table 2.10 – Repetitive Loss Area Overview for Subarea 9

Repetitive Loss Area	# of RL Properties	# of Additional Properties	Total # of Properties in RL Area	Road Names	% of Area in the SFHA
45	1	2	3	Whitney Road, Spalding Road	100%
46	1	7	8	Brogdon Street, Magnolia Avenue, Colonial Drive	0%
47	1	2	3	La Roche Court, La Roche Avenu	0%

Findings

The buildings in Subarea 9 are characterized primarily by single-family residential development consisting of a mix of one- and two-story homes. Most structures are masonry construction, although a small number of wood-frame homes were also documented. The majority of buildings were reported to be in good condition with only minor repairs needed, and foundations were generally described as either slab-on-grade or crawlspace foundations. Elevation conditions varied considerably, with homes ranging from at-grade conditions to elevations of approximately 4 to 6 feet above surrounding grade.

Most field reports specifically noted the absence of gutters or guttering systems, while only a few properties were observed to have gutters on the front, side, or portions of the roof.

Stormwater management features are present throughout the subarea. Multiple properties were observed adjacent to roadside ditches and several reports identified storm drains or drainage inlets located in front yards, at driveway entrances, or along streets. Some property owners noted that nearby ditches do not drain efficiently or are prone to flooding, indicating recurring drainage concerns in parts of the study area.



Slab-on-grade house with no gutters and a storm drain on the front corner of the property



Single family residential lot with drainage ditch and inlet located in front yard

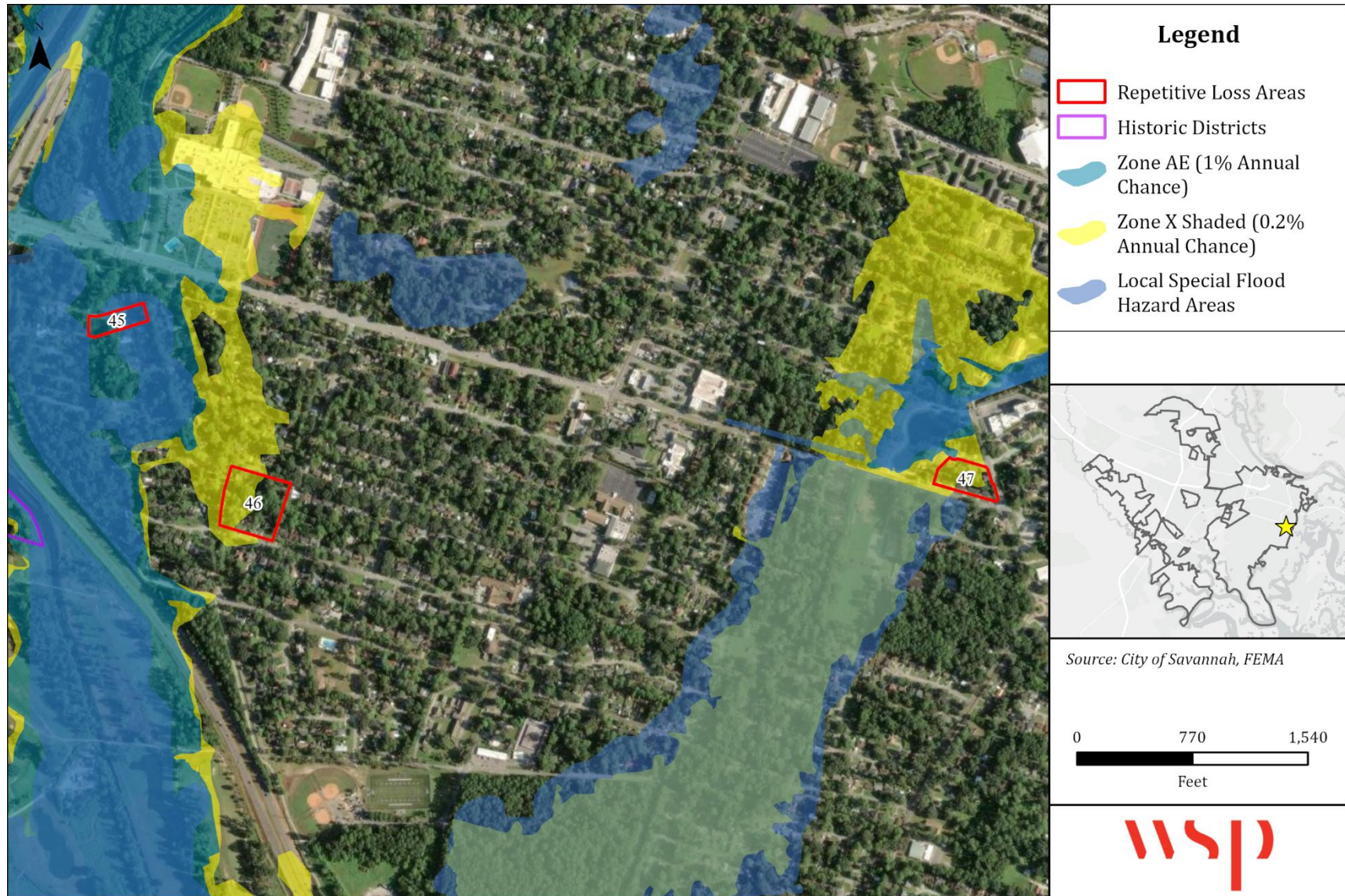


Slab-on-grade house with no gutters and a drainage inlet in front yard



Single story house with HVAC attached to masonry a few feet off the ground

Figure 2.15 – Repetitive Loss Subarea 9



Subarea 10

Overview

Repetitive Loss Areas 48 through 51 and 87 are located entirely outside of a flood zone. Repetitive Loss Area 52 is located almost entirely within the 100-year floodplain (Zone AE). This subarea contains a mix of commercial properties and newer residential homes. Area 87 includes multiple units in a multi-family residential development.

Table 2.11 – Repetitive Loss Area Overview for Subarea 10

Repetitive Loss Area	# of RL Properties	# of Additional Properties	Total # of Properties in RL Area	Road Names	% of Area in the SFHA
48	1	4	5	Megan Court, Patrick Street, King Arthur Lan	0%
49	1	4	5	Stephenson Avenue, GA-204 West, White Bluff Road, Eisenhower Drive	0%
50	1	2	3	Benefield Drive, Forest Park Drive, Hodgson Memorial Drive	0%
51	1	0	1	Hodgson Court	0%
52	2	5	7	Van Buren Avenue, Commercial Drive, Madison Avenue	95%
87	1	7*	8	Stephenson Ave., Habersham St., Hampton St.	0%

*4 of these buildings are included in a multi-family residential development

Findings

Subarea 10 includes a mix of residential and commercial properties, with commercial land uses representing a substantial portion of the subarea. Residential properties are primarily single-family homes, while commercial properties include banks, automobile dealerships, gas stations, offices, and other business uses. Most buildings are one- or two-story structures and were generally reported to be in good condition with only minor repairs needed. Common construction types include masonry, wood frame, concrete, and stucco. Foundations are

predominantly slab-on-grade, although a small number of crawlspace foundations were observed.

Building elevations vary throughout the subarea, with many structures being elevated between 2 and 6 feet above surrounding grade, although some buildings are located at grade or in areas below street elevation. Numerous residential and commercial properties specifically noted the absence of gutters or downspout systems.

Stormwater management infrastructure was commonly observed throughout the study area, particularly within commercial properties. Field reports documented catch basins, storm drains, culverts, drainage pathways, parking lot drainage systems, and roadside drainage features. Several commercial sites contained catch basins or parking lot drains, while other properties were located adjacent to creeks or culverts. In some locations, field reports noted drainage issues such as debris accumulation in storm drain pathways, water collecting in low portions of parking lots, or flooding occurring near drainage features during heavy rainfall events.



Commercial offices with standing water in front yard near parking lot



Single family residential lot with large drainage ditch in front yard

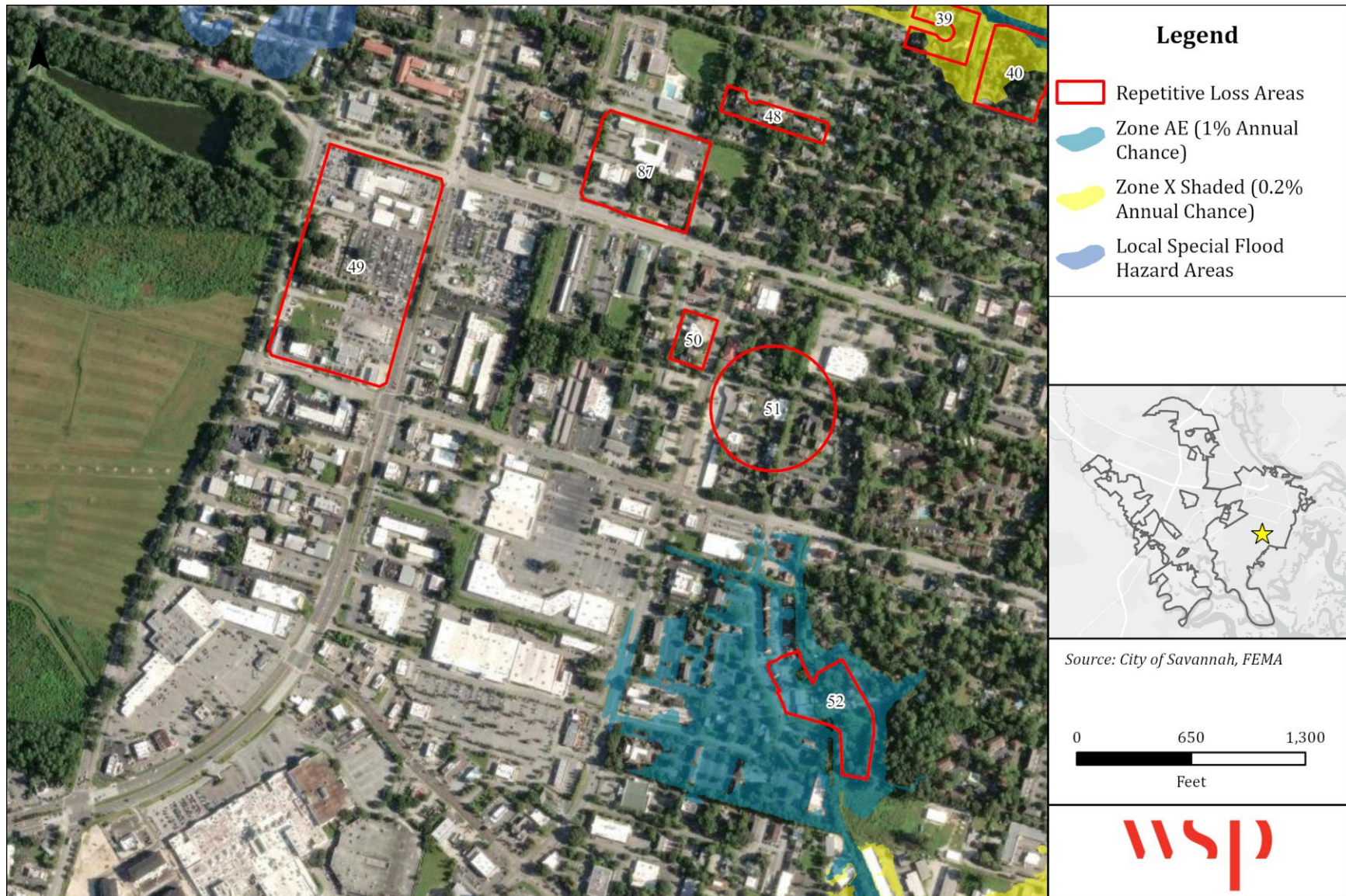


Slab-on-grade house with no gutters that sits next to a small creek



Commercial bank with gutters that drain into large impervious parking lot

Figure 2.16 – Repetitive Loss Subarea 10



Subarea 11

Overview

Portions of Repetitive Loss Areas 53 through 58 are located within the 100-year (Zone AE) flood zone. Subarea 11 contains a mix of single-family and multi-family residential properties.

Table 2.12 – Repetitive Loss Area Overview for Subarea 11

Repetitive Loss Area	# of RL Properties	# of Additional Properties	Total # of Properties in RL Area	Road Names	% of Area in the SFHA
53	2	5	7	Largo Drive, Williamsburg Road	64%
54	3	6	9	Coastal Court, San Fernando Blvd, Largo Drive	40%
55	1	5	6	La Brea Blvd, Tibet Avenue	30%
56	1	3	4	Brandon Lane, Tibet Avenue	86%
57	2	5	7	Wilshire Blvd, Montclair Blvd, Balboa Drive	37%
58	1	3	4	Vineyard Drive, Del Mar Circle, Wilshire Blvd.	100%

Findings

Subarea 11 is composed primarily of single-family residential neighborhoods with several multi-family residential properties also present. Most structures are one- and two-story buildings constructed primarily of masonry, with smaller numbers of wood-frame, and concrete buildings. The majority of properties were reported to be in good condition with only minor repairs needed, and slab-on-grade foundations were overwhelmingly the most common foundation type. Building elevations generally ranged from at-grade conditions to approximately 4 to 6 feet above surrounding grade.

Nearly every residential and multi-family structure was specifically noted as having no gutters or waterspouts. Only one property was observed to have gutters installed along the front of the house.

While HVAC units were not visible at every property, several homes were noted as having HVAC units on the ground. Field reports frequently documented culverts near residential properties, and one property was noted to have a canal immediately behind the residence.



Multi-family townhomes with large drainage ditch running between structures



Slab-on-grade house with no gutters and ground level HVAC unit

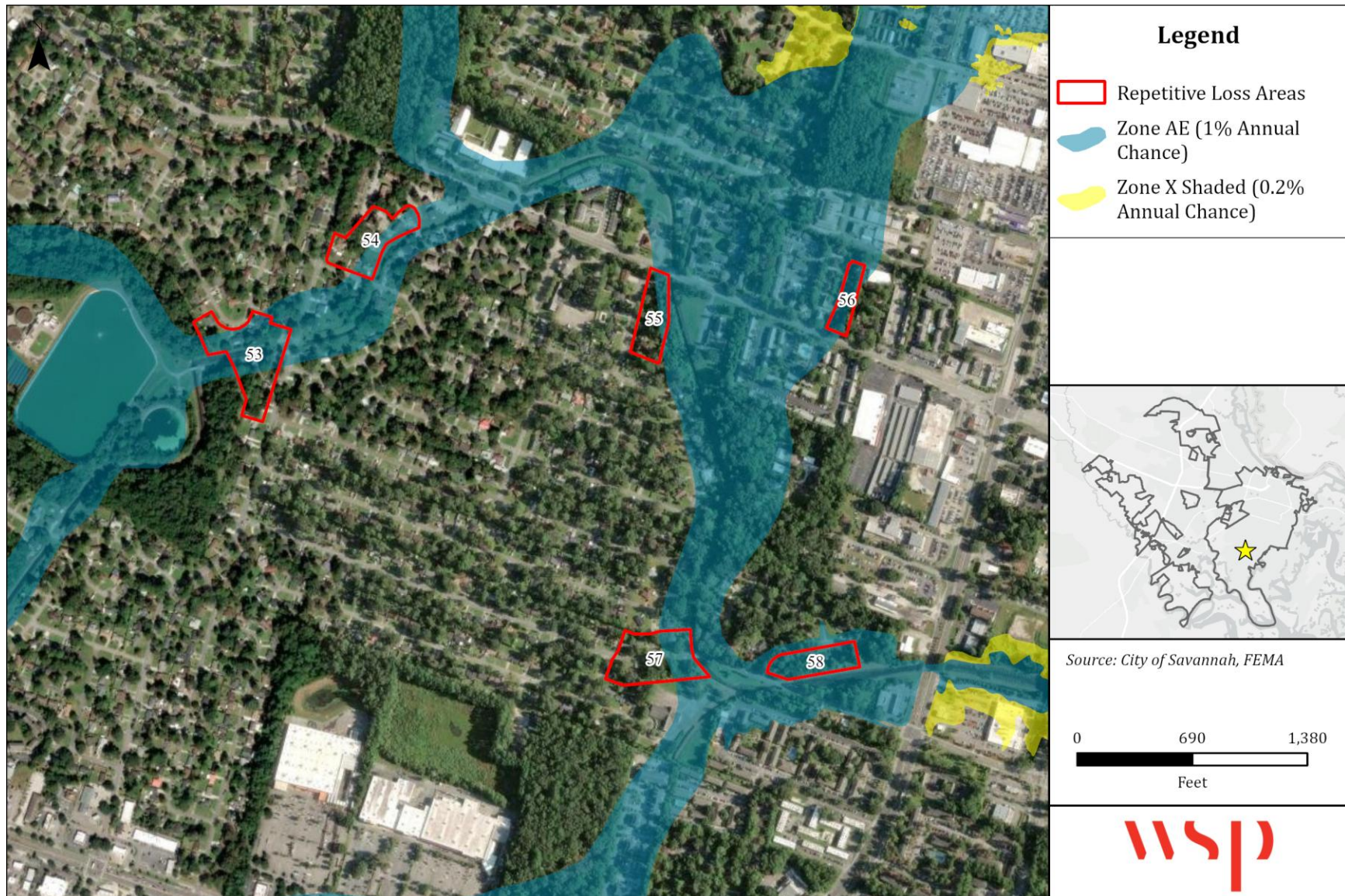


Signs of flooding in front of multi-family residential property



Multi-family apartment building with curbs and drainage inlet located in front yard

Figure 2.17 – Repetitive Loss Subarea 11



Subarea 12

Overview

Repetitive Loss Areas 59, 61, 62, 63 and 65 all have large portions of land within the 100-year (Zone AE) floodplain. Most of Repetitive Loss Area 59 is located within the 100-year (Zone AE) floodplain, with some area located in the Zone X Unshaded flood zone. Repetitive Loss Areas 60 and 64 are entirely located outside of any flood zones. Subarea 12 contains mostly single-family residential properties. Several homes have a drainage ditch directly adjacent to the property, and many homes show signs of recent flooding in the yard.

Table 2.13 – Repetitive Loss Area Overview for Subarea 12

Repetitive Loss Area	# of RL Properties	# of Additional Properties	Total # of Properties in RL Area	Road Names	% of Area in the SFHA
59	4	0	4	Montgomery Crossing Road, W. Montgomery Cross Road, Bass Drive, Lands End Circle	58%
60	1	7	8	Chippewa Drive, Seneca Road, White Bluff Road	0%
61	2	4	6	Paradise Drive, Dyches Drive, Inglewood Drive, Nina Court	67%
62	3	9	12	Croatan Street, Cindy Avenue, Chatham Street	82%
63	2	1	3	Atwood Street, Kandlewood Drive, Chatham St	97%
64	2	12	14	Sarah Court, Paradise Drive, Dyches Drive, Hillyer Drive	0%
65	1	3	4	Catherine Circle, Delores Drive, Cranman Drive, Arthur Circle	49%

Findings

Subarea 12 is comprised primarily of single-family residential properties, with a small number of multi-family residential and commercial uses also present. Buildings are predominantly one-story masonry homes. Most properties were reported to be in good condition with only minor repairs needed, and slab-on-grade foundations were the most common foundation type.

Crawlspace foundations were present at several properties, particularly among older residential structures. Elevation conditions varied, but many properties were situated between at-grade and 4 feet above surrounding grade.

The overwhelming majority of field reports specifically noted that homes did not have gutters. Only a small number of properties were observed to have partial gutter systems. Of the HVACs that were observable from the right-of-way, majority were located on the ground rather than elevated.

Field reports frequently documented roadside drainage ditches, drainage channels, creeks, and storm drains located throughout the subarea. Several reports identified clogged drainage features, drainage ditches in front yards, and storm drains that required maintenance. Other properties were located adjacent to creeks, canals, streams, or drainage ditches that serve as stormwater conveyance features.



Slab-on-grade home with no gutters and a stormwater inlet located near driveway



Yard with signs of flooding

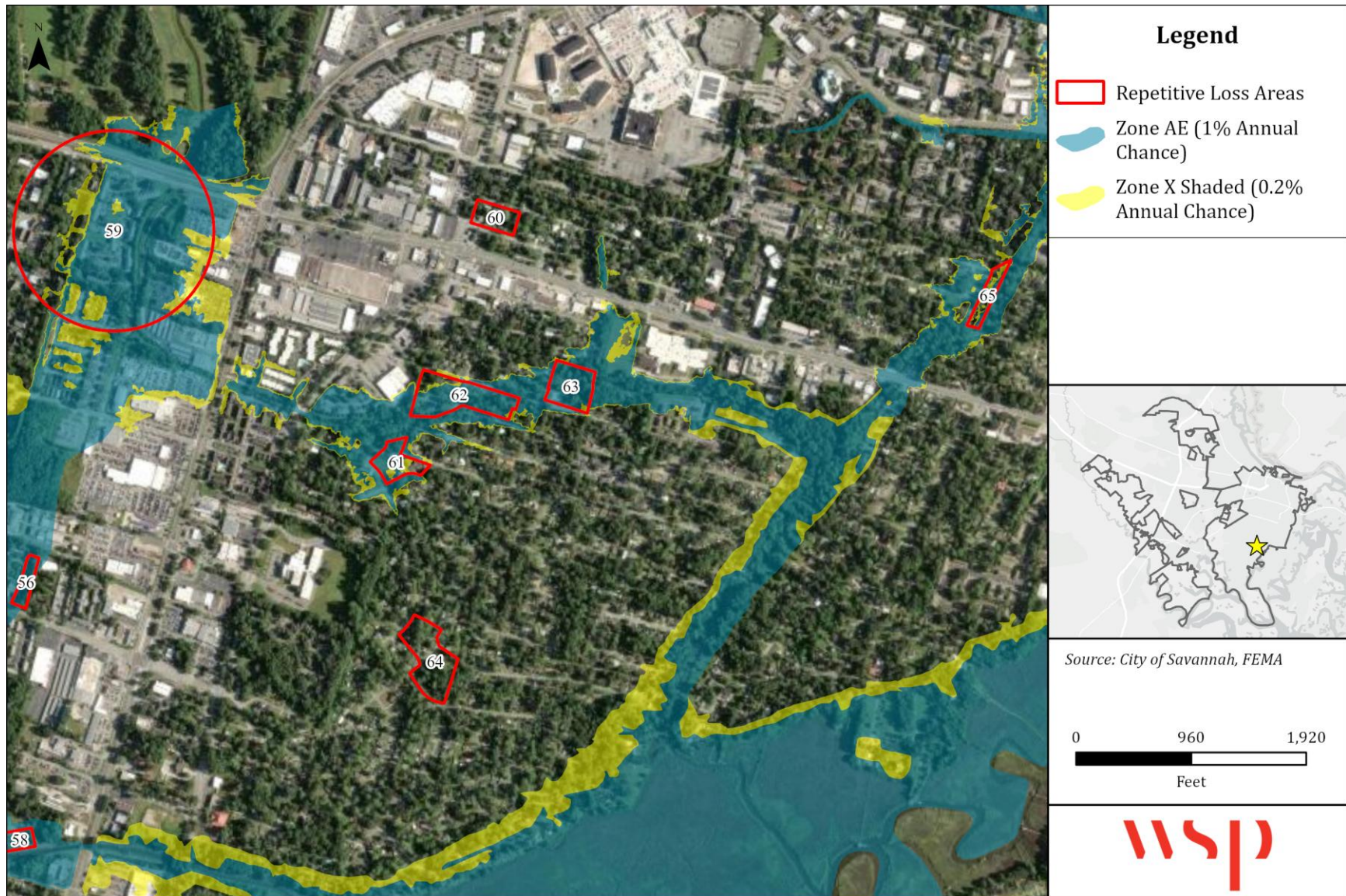


Large drainage creek located near homes



Home with a crawlspace foundation and no gutters

Figure 2.18 – Repetitive Loss Subarea 12



Subarea 13

Overview

Repetitive Loss Areas 66 is located entirely within the 100-year (Zone AE) floodplain. Repetitive Loss Area 67 is located primarily in the 100-year (Zone AE) floodplain, with pieces in the 500-year (Zone X Shaded) floodplain and the Zone X Unshaded area. Portions of Repetitive Loss Area 68 are located within the 500-year (Zone X Shaded) floodplain. Subarea 13 contains a mix of newer and older single-family residential properties.

Table 2.14 – Repetitive Loss Area Overview for Subarea 13

Repetitive Loss Area	# of RL Properties	# of Additional Properties	Total # of Properties in RL Area	Road Names	% of Area in the SFHA
66	1	4	5	Sherwood Road	100%
67	3	26	23	Dale Drive	83%
68	1	9	10	Kent Drive, Sulgrave Road, Queensbury Street, Kent Court, Marlborough Way, E. Montgomery Cross Road, Sallie Mood Drive	0%
69	1	4	5	Damascus Street, Key Street	0%

Findings

Subarea 13 is composed almost entirely of single-family residential development consisting primarily of one- and two-story masonry homes. The buildings are generally well maintained, with most structures rated in good condition and only minor repairs noted. Foundations are predominantly slab-on-grade, although crawlspace foundations were present on a number of properties. Building elevations vary across the subarea, with many homes situated between 1 and 6 feet above surrounding grade.

Overall, the vast majority of buildings in Subarea 13 do not appear to have gutter systems. Field reports noted drainage canals, roadside ditches, stormwater drains, and storm drain inlets adjacent to residential properties. Several properties were located directly beside drainage canals, while other reports identified clogged storm drains, clear stormwater drains, or nearby drainage features. HVAC observations were limited, but where equipment was documented, it was generally noted to be located at ground level rather than elevated.

Some homeowners reported flooding during heavy rainfall events, while field reports noted evidence of water damage or ponding in low-lying areas. Many of these observations occurred near canals, ditches, or stormwater collection systems.



Slab-on-grade house with no gutters



Single family residence with no gutters and HVAC located at ground level

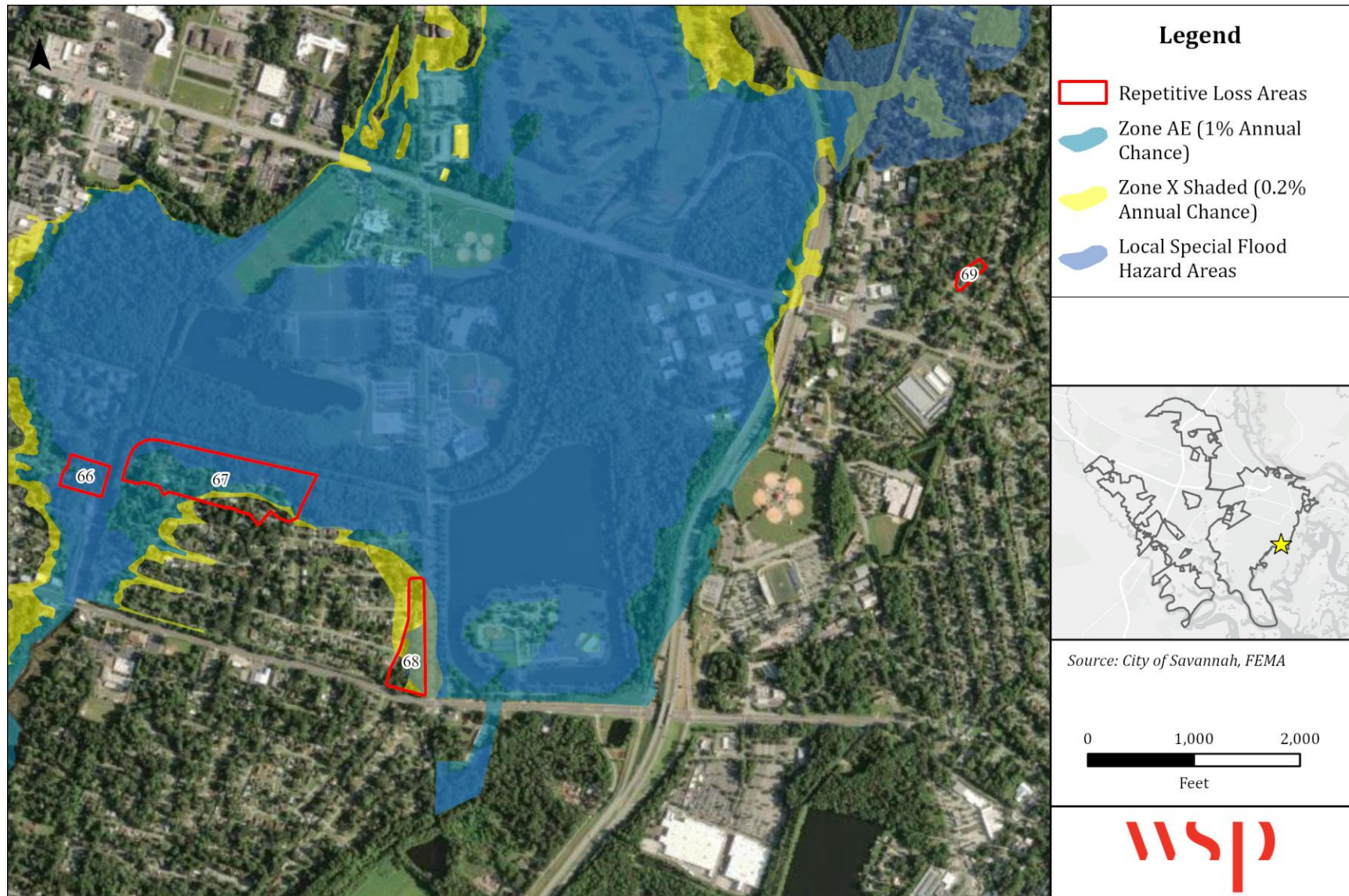


Ponding water in front yard



Two-story house with crawl space and HVAC unit located at ground level

Figure 2.19 – Repetitive Loss Subarea 13



2.3.3 Zone 3 – South City/Sound

Problem Statement

Zone 3 is located in southeastern Savannah, south of Zones 1 and 2. There are no historic districts located within Zone 3. Zone 3 contains a total of 3 Subareas and 16 Repetitive Loss Areas. Portions of Zone 3 are located within the 100-year floodplain and are subject to periodic flooding from tidally influenced rivers and streams as well as tropical storms and hurricanes. The effort to reduce repetitive flooding depends partly on structure type and elevation of the structure. The approach to reducing repetitive flooding in Zone 3 will require a combination of floodproofing techniques, elevation and education.

Figure 2.20 – Flooding in Zone 3: South City/Sound



Subarea 14

Overview

Repetitive Loss Area 70 is located entirely within the 100-year (Zone AE) floodplain. Repetitive Loss Area 89 is almost entirely located within the 100-year (Zone AE) floodplain, with a small portion in the 500-year (Zone X Shaded) floodplain. Subarea 14 contains newer, single-family residential properties that are not elevated. Some of the properties in Repetitive Loss Area 89, however, are elevated. Many of the homes go directly back up to the Little Ogeechee River and have river access and/or docks.

Table 2.15 – Repetitive Loss Area Overview for Subarea 14

Repetitive Loss Area	# of RL Properties	# of Additional Properties	Total # of Properties in RL Area	Road Names	% of Area in the SFHA
70	1	6	7	End Street, Rio Road	100%
89	1	4	5	Brewster Street, Rio Road	92%

Findings

Subarea 14 is characterized primarily by single-family residential development consisting of both one- and two-story homes. The structure types include masonry, wood-frame, concrete, and brick masonry structures. Most properties were reported to be in good condition with only minor repairs needed. Both slab-on-grade and crawlspace foundations were present in this subarea, while a number of riverfront homes were noted as elevated structures.

The majority of buildings in Subarea 14 do not have gutters or downspouts. Stormwater infrastructure was not commonly observed or specifically documented in the field reports. However, many of the properties are located near natural water features, particularly the Little Ogeechee River and associated waterfront areas. Several homes back directly onto the river and include docks, boathouses, boardwalks, pools, and other waterfront improvements. These natural drainage and tidal features appear to be more common than engineered stormwater conveyance systems within the subarea. Majority of HVAC units were not observable from the right-of-way in this subarea.

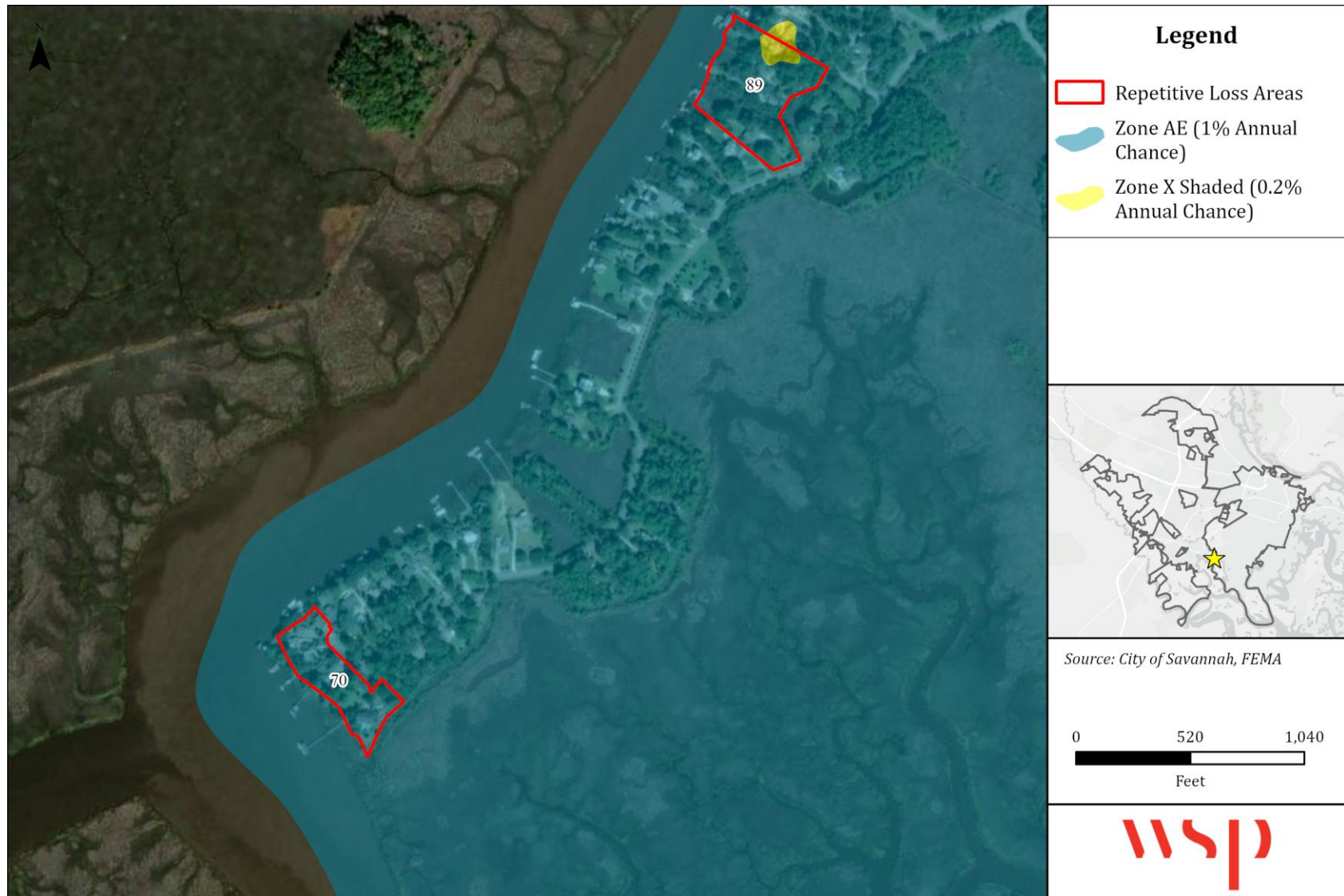


Elevated house that backs up to the Little Ogeechee River



House with elevated crawlspace

Figure 2.21 – Repetitive Loss Subarea 14



Subarea 15

Overview

The entirety of Repetitive Loss Area 88 and a portion of Repetitive loss Area 75 are located within the 100-year (Zone AE) floodplain. Repetitive Loss Areas 80 and 81 are located within the 500-year (Zone X Shaded) floodplain. The remaining Repetitive Loss Areas within Subarea 15 are located outside of the flood zones or may have a small portion within the Zone X Unshaded floodplain. Subarea 15 contains a mix of older, single-family and multi-family residential properties that are not elevated.

Table 2.16 – Repetitive Loss Area Overview for Subarea 15

Repetitive Loss Area	# of RL Properties	# of Additional Properties	Total # of Properties in RL Area	Road Names	% of Area in the SFHA
71	1	5	6	Northwood Road, Windsor Road, Largo Drive	0%
72	1	7	8	Deerfield Road, Ortega Drive, Bedford Drive	0%
73	1	7	8	Collingwood Road, Bedford Drive, Woodley Road	0%
74	1	4	5	Woodley Road, Deerfield Road, Linwood Road	0%
75	4	17	21	Deerfield Road, Linwood Road, Briarcliff Circle, Windsor Road, Winwood Place, Mimosa Place, Barberry Drive	56%
76	8	32	40	Holland Drive, Windmill Land, Windmill Court, Holland Park Circle, Holland Park Court, Austin Drive	3%
77	2	4	6	Austin Drive	0%
78	1	3	4	Willow Road, Tanglewood Road	0%
79	1	7	8	Merrydell Drive, Chateaugay Road, W. Welwood Drive	0%
80	8	23	31	Old Mill Lane, Mill Court, Mill Drive, Millstream Court	0%
81	4	15	19	White Bluff Road, Bordeaux Lane	0%

Repetitive Loss Area	# of RL Properties	# of Additional Properties	Total # of Properties in RL Area	Road Names	% of Area in the SFHA
82	1	6	7	Old Coffee Bluff Road, Brown Pelican Drive, Vernon River Drive	0%
88	1	1	2	Keystone Drive	100%

Findings

Subarea 15 is composed primarily of single-family residential neighborhoods with several multi-family residential developments also present. Most structures are one- and two-story buildings constructed primarily of masonry, with smaller numbers of wood-frame and manufactured homes. Foundations are overwhelmingly slab-on-grade, and most properties were reported to be in good condition with only minor repairs needed. Building elevations vary across the subarea, but many structures are situated between at-grade and 4 feet above surrounding ground elevations.

The majority of field reports noted that homes in the subarea did not have gutters or downspouts. Stormwater infrastructure is widely present throughout the study area. Field reports noted numerous roadside drainage ditches, storm drains, and culverts. Several residential streets contain front-yard ditches, some of which were reported as clogged or surrounded by overgrown vegetation.

Where HVAC equipment was observable from the right-of-way, units were consistently described as being located at ground level. Several field reports noted evidence of localized flooding, yard ponding, driveway flooding, or street flooding, particularly in areas adjacent to drainage ditches and low-lying portions of the neighborhood. Some reports referenced standing water, clogged drainage channels, and signs of previous flood damage, further highlighting the importance of stormwater management throughout the area.



Slab-on-grade house with no gutters



Slab-on-grade house with ground level HVAC unit



Front yard with flooding damage

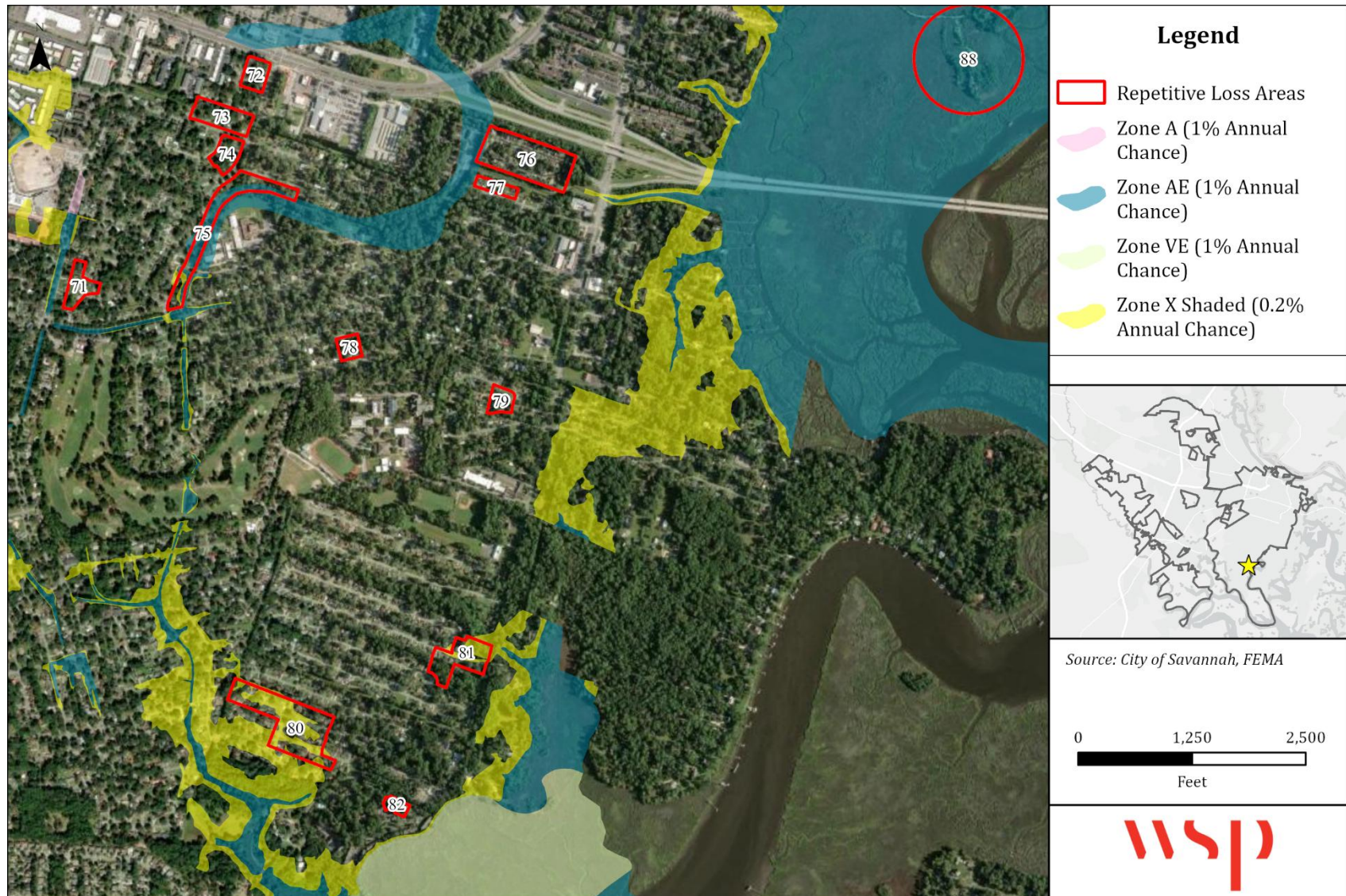


Single-family residential lot with flooded culvert in front yard



Multi-family condos with no gutters and a drainage inlet in the front yard

Figure 2.22 – Repetitive Loss Subarea 15



Subarea 16

Overview

Repetitive Loss Area 83 is located partially within the 100-year (Zone AE) and 500-year (Zone X Shaded) floodplain. Subarea 16 contains newer, single-family properties. Some homes in this subarea have been elevated.

Table 2.17 – Repetitive Loss Area Overview for Subarea 16

Repetitive Loss Area	# of RL Properties	# of Additional Properties	Total # of Properties in RL Area	Road Names	% of Area in the SFHA
83	1	13	14	S. Grant Street, E. Back Street, Lee Street	22%

Findings

Subarea 16 is characterized primarily by large-lot single-family residential development located within heavily vegetated and wooded settings. The buildings consist primarily of wood-frame residences, with a mix of one-, two-, and three-story buildings. Several homes are substantially elevated, including structures raised on piers, piles, posts, or elevated foundations, reflecting the area's proximity to low-lying coastal and marsh environments. Overall, the properties that could be observed were generally reported to be in good condition with only minor repairs needed.

Majority of homes in subarea 16 did not have gutters installed at the time of inspection. Stormwater infrastructure is not as common in this subarea and many of the drains and inlets were observed to have blocked drainage conditions.

Several homes were elevated significantly above grade, including structures on raised foundations and homes noted to be more than 12 feet above surrounding ground elevations. These elevated structures appear to be common throughout portions of the subarea. In this subarea HVAC units were predominantly not visible from the right-of-way.

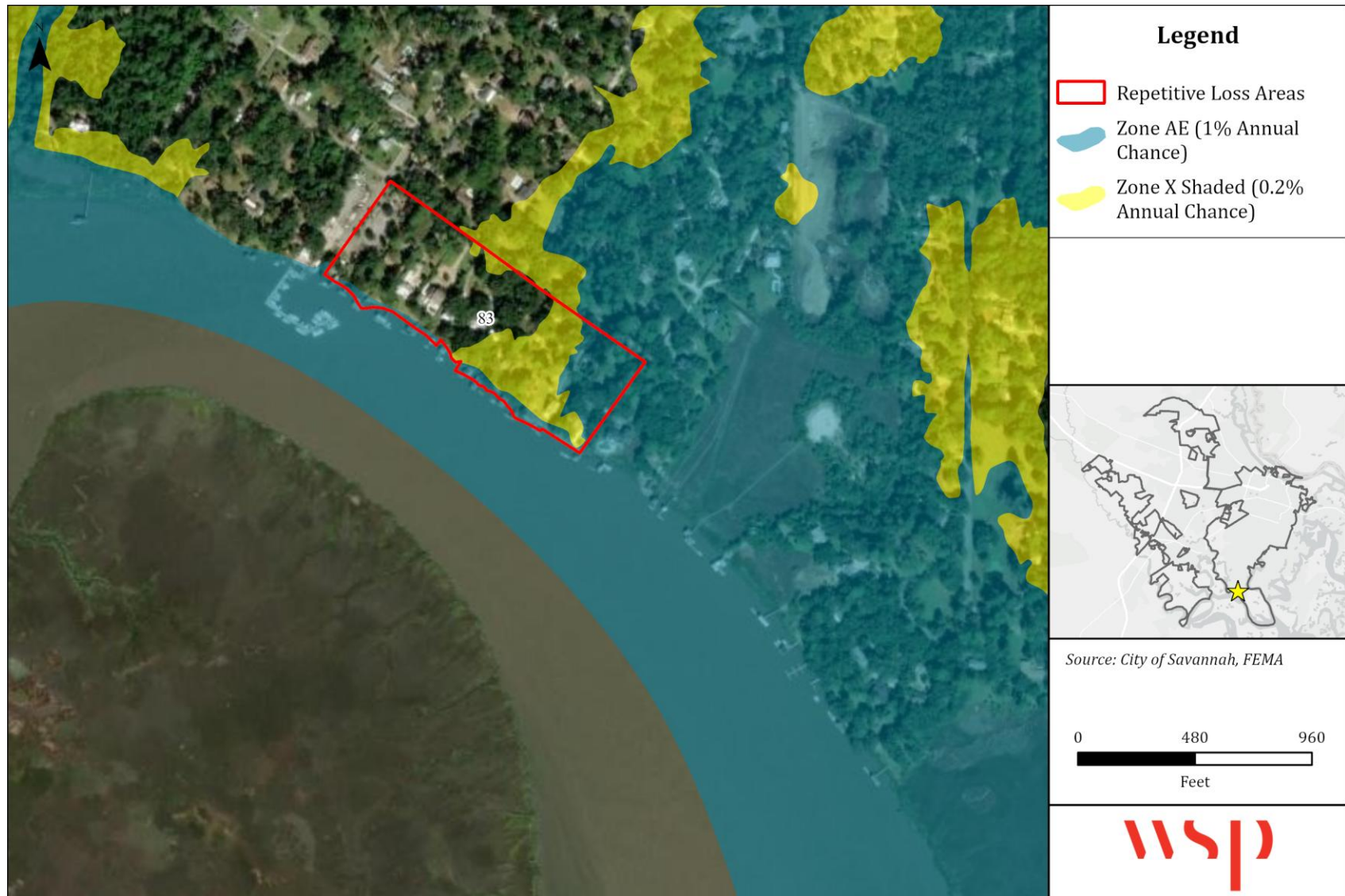


Two-story house with an enclosed elevated foundation



House elevated on 3-4-foot tall brick columns

Figure 2.23 – Repetitive Loss Area 83



2.4 STEP 4. Review Alternative Mitigation Approaches

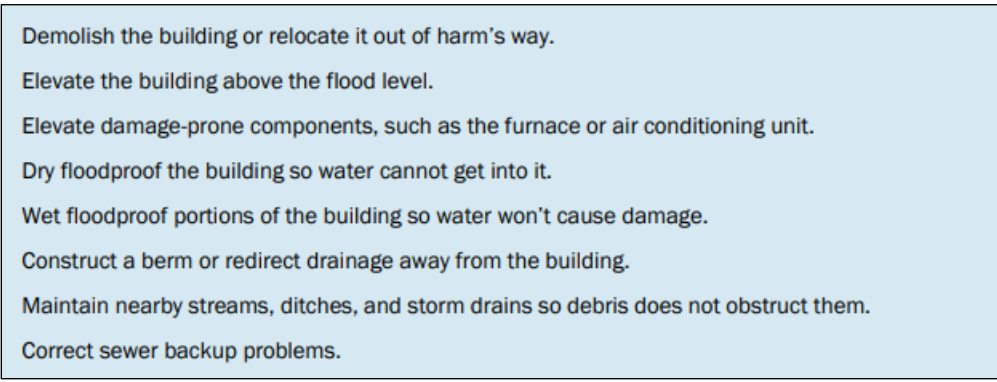
2.4.1 Mitigation Alternatives

According to the 2025 CRS Coordinator's Manual, mitigation measures should fall into one of the following floodplain management categories:

- Prevention
- Property Protection
- Natural Resource Protection
- Emergency Services
- Structural Projects
- Public Information and Outreach

Property protection is essential to mitigating repetitive loss properties and reducing future flood losses. There are many ways to protect a property from flood damage. Property protection measures recognized in the 2025 CRS Coordinator's Manual include relocation, acquisition, building elevation, retrofitting, sewer backup protection, and insurance. Different measures are appropriate for different flood hazards, building types and building conditions. Figure 2.24 below, found in the 2025 CRS Coordinator's Manual, lists typical property protection measures.

Figure 2.24 – Typical Property Protection Measures



- Demolish the building or relocate it out of harm's way.
- Elevate the building above the flood level.
- Elevate damage-prone components, such as the furnace or air conditioning unit.
- Dry floodproof the building so water cannot get into it.
- Wet floodproof portions of the building so water won't cause damage.
- Construct a berm or redirect drainage away from the building.
- Maintain nearby streams, ditches, and storm drains so debris does not obstruct them.
- Correct sewer backup problems.

Source: 2025 CRS Coordinators Manual

A diverse set of mitigation options will enable the City, property owners, and outside entities to reduce flooding and minimize future losses. Improving stormwater drainage and storage capacity throughout Savannah can eliminate some building damage and road closures in areas subject to coastal and tidal flooding as well as those subject to localized stormwater flooding. Similarly, improving and protecting natural floodplain functions can help manage tidal floodwaters and reduce flood damage resulting from high tides, storm surge, and sea level rise.

These structural and large-scale mitigation methods require large capital expenditures and cooperation from private property owners. Promoting floodproofing techniques and flood insurance coverage and increasing public education and awareness of the flood hazards can reduce flood damage for property owners in areas where large capital projects are not feasible. The City's websites, e-mail distribution lists, press releases, and variable message boards can help get these messages out to business owners and residents.

Zone 1 – Downtown/Historic/Midtown

The Downtown/Historic area is the largest of the 3 Zones with 391 total properties identified within 7 Subareas and 36 Repetitive Loss Areas. This area is also the historic and tourist section of Savannah where many structures are on the National Historic Register. The majority of the flooding in this area is considered "nuisance" flash flooding that causes minimal damage but does require costly cleanup and numerous street closures due to floodwaters overtopping the roadway.

Flooding in the downtown/historic area can be attributed to its flat topography, aging stormwater infrastructure and proximity to the tidally influenced Savannah River. Flash flooding can occur when the capacity of the stormwater system is exceeded or if conveyance is obstructed by debris, sediment and other materials that limit the volume of drainage. There are several canals located within Zone 1 that may overtop due to heavy rainfall. Furthermore, heavy rain accompanied by high tides do not allow stormwater to quickly drain from this area.

Elevating roadways and improving the stormwater drainage system can eliminate some road closures in this area. These structural methods require large capital expenditures and cooperation from private property owners. Promoting floodproofing techniques and increasing public education and awareness of the flood hazards can be the next best alternative for property owners in this area. The City's websites, e-mail distribution lists, press releases and variable message boards can provide benefit to business owners and residents.

Zone 2 – Southcentral

Zone 2 contains a total of 238 properties identified within 6 Subareas and 37 Repetitive Loss Areas. The majority of the flooding in this area is considered flash flooding. Flash flooding can occur when the capacity of the stormwater system is exceeded or if conveyance is obstructed by debris, sediment and other materials that limit the volume of drainage. Flooding in the southcentral area can be attributed to its flat topography, aging stormwater infrastructure and proximity to the tidally influenced rivers and streams that flow into the Ossabaw Sound. Heavy rain accompanied by high tides does not allow stormwater to quickly drain from this area.

Improving the stormwater drainage system can eliminate some road closures and flash flooding in this area. Promoting floodproofing techniques and increasing public education and awareness of the flood hazards can be the next best alternative for property owners in this area. The City's websites, e-mail distribution lists, press releases and variable message boards can provide benefit to business owners and residents.

Zone 3 – South City/Sound

Zone 3 contains a total of 191 properties identified within 3 Subareas and 16 Repetitive Loss Areas. Flooding in the South City/Sound Zone can be attributed to its proximity to the tidally influenced rivers and streams that flow into the Ossabaw Sound as well as the heavy rains associated with tropical storms and hurricanes. Heavy rains accompanied by high tides can overwhelm the stormwater infrastructure in this area.

Promoting floodproofing techniques and structure elevation as well as increasing public education and awareness of the flood hazards are the best alternatives for property owners in this area. The City's websites, e-mail distribution lists, press releases and variable message boards can provide benefit to business owners and residents.

2.4.2 Mitigation Funding

There are several types of mitigation measures, listed in the table below, which can be considered for each repetitive loss property. Each mitigation measure qualifies for one or more grant programs. Depending on the type of structure, severity of flooding and proximity to additional structures with similar flooding conditions, the most appropriate measure can be determined. In addition to these grant funded projects, several mitigations measures can be taken by the homeowner to protect their home. Please note, the Biggert-Waters 2012 National Flood Insurance Reform Act eliminated the previously available Repetitive Flood Claims grant program.

Table 2.18 – Mitigation Grant Programs

Types of Projects Funded	HMGP	FMA	BRIC	SRL	IIC	SBA
Acquisition of the entire property by a gov't	✓	✓	✓	✓		
Relocation of the building to a flood free site	✓	✓	✓	✓	✓	✓
Demolition of the structure	✓	✓	✓	✓	✓	✓
Elevation of the structure above flood levels	✓	✓	✓	✓	✓	✓
Replacing the old building with a new elevated	✓			✓	✓	✓
Local drainage and small flood control projects	✓			✓		
Dry floodproofing (non-residential buildings only)		✓	✓	✓	✓	✓
Percent paid by Federal program	75%	75%	75%	75%	100%	0
Application Notes	1,2	1	1	1	3	2,4

Application notes:

1. Requires a grant application from your local government
2. Only available after a federal disaster declaration
3. Requires the building to have a flood insurance policy and to have been flooded to such an extent that the local government declares it to be substantially damaged. Pay 100% up to \$30,000
4. This is a low interest loan that must be paid back

2.4.3 Potential mitigation measures

Structural Alternatives:

Structural Alternatives
Dry floodproofing. Commercial structures and even residential structures are eligible for dry floodproofing; however, in many instances this requires human intervention to complete the measure and ensure success. For example, installing watertight shields overdoors or windows requires timely action by the homeowner, especially in a heavy rainfall event.
Wet floodproofing. Wet floodproofing a structure involves making the uninhabited portions of the structure resistant to flood damage and allowing water to enter during flooding. For example, in a basement or crawl space, mechanical equipment and ductwork would not be damaged.
Backflow valves. For basements, especially with combined storm sewer and sewer systems, backflow preventer valves can prevent storm water and sewer from entering crawlspaces and basements.
Acquisition. Acquire and/or relocate properties/target abandoned properties.
Elevation. Elevate structures and damage-prone components, such as the furnace or air conditioning unit, above the BFE.
Barriers. Construct engineered structural barriers, berms, and floodwalls (Note: Assuming lot has required space for a structural addition).
Roadway improvements. Increase road elevations above the BFE of the 100-year floodplain.
Drainage improvements. Implement drainage improvements such as increasing capacity in the system (up-sizing pipes) and providing additional inlets to receive more stormwater.
Drainage maintenance. Improve stormwater system maintenance program to ensure inlets and canals are free of clogging debris.

Non-Structural Alternatives:

Non-Structural Alternatives
Education. Provide public education through posting information about local flood hazards on City's websites, posting signs at various locations in neighborhoods or discussing flood protection measures at local neighborhood association meetings.
Runoff Reduction. Implement volume control and runoff reduction measures in the City's Stormwater Management Ordinance.
Setbacks. Expand riparian impervious surface setbacks.
Elevate contents. Relocate internal supplies, products/goods above the flooding depth.
Flood insurance. Promote the purchase of flood insurance.
Zoning. Improve the City's floodplain and zoning ordinances

2.4.4 Past and Current Mitigation Projects

Past and Current Capital Improvement Projects Affecting Zone 1:

The Casey South Drainage Project was the most extensive drainage improvement in Savannah's history, relieving chronic flooding in midtown Savannah, including Chatham Crescent, Ardsley Park and Olin Heights. Currently, the City of Savannah has embarked on an ambitious project to relieve flooding along Abercorn and Habersham Streets near 63rd Street. The project includes the construction of approximately 6,000 feet of drainage pipe and 7,500 feet of box culverts extending from Abercorn Street to the Casey Canal. Drainage improvements will occur on Abercorn from 60th to 65th St., 63rd Street from Abercorn to Paulsen Street, Paulsen from 63rd to 60th St., and 60th Street from Paulsen to the Casey Canal. The City is also planning improvements to the Bilbo Box which will improve drainage in a wide area of downtown's east side.

Past Capital Improvement Projects Affecting Zone 2:

Recent drainage improvement projects that installed pump stations at Montgomery Crossroads and DeRenne Drive now move stormwater down several major drainage canals while allowing drainage to occur during high tides, which previously was not possible.

2.4.5 Advantages and Disadvantages of Mitigation Measures

Seven primary mitigation measures are discussed here: acquisition, relocation, barriers, floodproofing, drainage, elevation, and insurance. In general, the cost of acquisition and relocation will be higher than other mitigation measures but can completely mitigate risk of any future flood damage. Building small barriers to protect single structures is a lower cost solution but may not be able to offer complete protection from large flood events and may impact flood risk on other properties. When drainage causes repetitive flooding, improving the drainage can mitigate flooding and benefit multiple properties. Each of these solutions is discussed in greater detail below.

Acquisition:

Property acquisition and relocation are complex processes requiring transferring private property to property owned by the local government for open space purposes. Acquisition is a relatively expensive mitigation measure but provides the greatest benefit in the lives of owners and properties are protected from flood damage. The major cost for the acquisition method is for purchasing the structure and land. The total estimated cost for acquisition should be based on the following:

- Purchase of Structure and land
- Demolition
- Debris removal, including any landfill processing fees
- Grading and stabilizing the property site

- Permits and plan review

Other factors to consider include reduction of tax base when a property is acquired, and the costs associated with maintaining the land.

Table 2.19 – Advantages and Disadvantages of Acquisition

ADVANTAGES	DISADVANTAGES
• Permanently removes problems since the structure no longer exists. • Expands open space and enhances natural and beneficial uses. • May be fundable under FEMA mitigation grant programs.	• Cost may be prohibitive. • Resistance may be encountered by local communities due to loss of tax base, maintenance of empty lots, and liability for injuries on empty, community-owned lots.

There are three criteria that must be met for FEMA to fund an acquisition project:

The local community must inform the property owners interested in the acquisition program that the community will not use condemnation authority to purchase their property and that the participation in the program is strictly voluntary,

The subsequent deed to the property to be acquired will be amended such that the landowner will be restricted from receiving any further Federal disaster assistance grants, the property shall remain in open space in perpetuity, and the property will be retained in ownership by a public entity, and

Any replacement housing or relocated structures will be located outside the 1%-annual-chance floodplain.



Past property acquisitions in Savannah have been converted into parks and community

Relocation:

Relocation involves lifting and placing a structure on a wheeled vehicle and transporting that structure to a site outside the 1%-annual-chance floodplain and placed on a new permanent foundation. Like acquisition, this is one of the most effective mitigation measures.

Table 2.20 – Advantages and Disadvantages of Relocation

ADVANTAGES	DISADVANTAGES
- Removes flood problem since the structure is relocated out of the flood-prone area. - Allows a substantially damaged or substantially improved structure to be brought into compliance with a community's floodplain management ordinance. - May be fundable under FEMA mitigation grant programs.	- Cost may be prohibitive. - Additional costs are likely if the structure must be brought into compliance with current code requirements for plumbing, electrical, and energy systems.

The cost for relocation will vary based on the type and the condition of the structure. It is considerably less expensive to relocate a home that is built on a basement or crawl space as opposed to a structure that is a slab on grade. Additionally, wood sided structures are less expensive to relocate than structures with brick veneer. Items to consider in estimating cost for relocation include the following:

- Site selection and analysis and design of the new location
- Analysis of existing size of structure
- Analysis and preparation of the moving route
- Preparation of the structure prior to the move
- Moving the structure to the new location
- Preparation of the new site
- Construction of the new foundation
- Connection of the structure to the new foundation
- Restoration and maintenance of the old site



Barriers:

A flood protection barrier is usually an earthen levee/berm or a concrete retaining wall. While levees and retaining walls can be large spanning miles along a river, they can also be constructed on a much smaller scale to protect a single home or group of homes.

Table 2.21 – Advantages and Disadvantages of Barriers

ADVANTAGES	DISADVANTAGES
- Relative cost of mitigation is less expensive than other alternatives. - No alterations to the actual structure or foundation are required. - Homeowners can typically construct their own barriers that will complement the style and functionality of their house and yard.	- Property is still located within the floodplain and has potential to be damaged by flood if barrier fails or waters overtop it. - Solution is only practical for flooding depths less than 3 feet. - Barriers cannot be used in areas with soils that have high infiltration rates.

The cost of constructing a barrier will depend on the type of barrier and the size required to provide adequate protection. An earthen berm will generally be less expensive compared to an equivalent concrete barrier primarily due to the cost of the materials. Another consideration is space; an earthen barrier requires a lot of additional width per height of structure compared to a concrete barrier to ensure proper stability. Key items to consider for barriers:

There needs to be adequate room on the lot

A pump is required to remove water that either falls or seeps onto the protected side of the barrier

Human intervention will be required to sandbag or otherwise close any openings in the barrier during the entire flood event

Floodproofing:

Wet floodproofing a structure consists of modifying the uninhabited portions (such as a crawlspace, unfinished garage, or an unfinished basement) to allow floodwater to enter and exit. This ensures equal hydrostatic pressure on the interior and exterior of the structure which reduces the likelihood of wall failures and structural damage. Wet floodproofing is practical in only a limited number of situations.

Table 2.22 – Advantages and Disadvantages of Wet Floodproofing

ADVANTAGES	DISADVANTAGES
• Often less costly than other mitigation measures. • Allows internal and external hydrostatic pressures to equalize, lessening the loads on walls and floors.	• Extensive cleanup may be necessary if the structure becomes wet inside and possibly contaminated by sewage, chemicals and other materials borne by floodwater. • Pumping floodwater out of a basement too soon after a flood may lead to structural damage. • Does not minimize the potential damage from a high-velocity flood flow and wave action.

A dry floodproofed structure is made watertight below the level that needs flood protection to prevent floodwater from entering. Creating a watertight structure involves sealing walls using waterproof coatings, impermeable membranes, or additional layers of masonry or concrete. It also includes installing watertight shields over windows and doors, as well as implementing measures to prevent sewer backup.

Table 2.23 – Advantages and Disadvantages of Dry Floodproofing

ADVANTAGES	DISADVANTAGES
• Often less costly than other retrofitting methods • Does not require additional land. • May be funded by a FEMA mitigation grant program.	• Requires human intervention and adequate warning to install protective measures. • Does not minimize the potential damage from high-velocity flood flow and wave action. • May not be aesthetically pleasing.

Drainage Improvements:

Methods of drainage improvements include overflow channels, channel straightening, restrictive crossing replacements, and runoff storage. Modifying the channel attempts to provide a greater carrying capacity for moving floodwater away from areas where damage occurs. Whenever drainage improvements are considered as a flood mitigation measure, the effects upstream and downstream from the proposed improvements need to be considered.

Table 2.24 – Advantages and Disadvantages of Drainage Improvements

ADVANTAGES	DISADVANTAGES
• Could increase channel carrying capacity through overflow channels, channel straightening, crossing replacements, or runoff volume storage. • Minor projects may be fundable under FEMA mitigation grant programs.	• May help one area but create new problems upstream or downstream. • Channel straightening increases the capacity to accumulate and carry sediment. • May require property owner cooperation and right-of-way acquisition.

Elevation:

Elevating a structure to prevent floodwaters from reaching living areas is an effective and one of the most common mitigation methods. Elevation may also apply to roadways and walkways. The goal of the elevation process is to raise the lowest floor of a structure or roadway/walkway bed to or above the required level of protection.

Table 2.25 – Advantages and Disadvantages of Elevation

ADVANTAGES	DISADVANTAGES
• Elevating to or above the BFE allows a substantially damaged or substantially improved house to be brought into compliance. • Often reduces flood insurance premiums. • Reduces or eliminates road closures due to overtopping. • May be fundable under FEMA mitigation grant programs.	• Cost may be prohibitive. • The appearance of the structure and access to it may be adversely affected. • May require property owner cooperation and right-of-way acquisition. • May require road or walkway closures during construction.

Flood Insurance:

Insurance differs from other property protection activities in that it does not mitigate or prevent damage caused by a flood. However, flood insurance does help the owner repair and rebuild their property after a flood, and it can enable the owner to afford incorporating other property protection measures in that process. Insurance offers the advantage of protecting property, as long as the policy is in force, without requiring human intervention for the measure to be effective.

Table 2.26 – Advantages and Disadvantages of Flood Insurance

ADVANTAGES	DISADVANTAGES
• Provides protection outside of what is covered by a homeowners' insurance policy. • Can help to fund other property protection measures after a flood through increased cost of compliance (ICC) coverage. • Provides protection for both structure and contents. • Can be purchased anywhere in a community, including outside of a flood zone.	• Cost may be prohibitive. • Policyholders may have trouble understanding policy and filing claims. • Does not prevent or mitigate damage.

2.5 STEP 5. Conclusion and Recommendations

2.5.1 Conclusion

Based on the field survey and collection of data, the analysis of existing studies and reports, and the evaluation of various structural and non-structural mitigation measures, the City of Savannah proposes that mitigation measures be implemented for all three zones. Table 2.27 through Table 2.29 examine the past and current mitigation actions in these zones.

Table 2.27 – Past and Current Mitigation Actions in Zone 1

Past and Current Mitigation Actions	
1	Property owners have documented flooding and identify flooding concerns in returned questionnaires from this analysis.
2	The City has eliminated 21 properties from the repetitive loss list through acquisition and demolition. Many of these areas have been converted to community gardens which have proven to be very popular in the city.
3	Property owners are aware of flooding causes. Some property owners have undertaken specific floodproofing measures at their own expense.
4	City has undertaken numerous, costly capital improvement projects to improve drainage within this Area.

Table 2.28 – Past and Current Mitigation Actions in Zone 2

Past and Current Mitigation Actions	
1	Property owners have documented flooding and identify flooding concerns in returned questionnaires from this analysis.
2	The City has eliminated 21 properties from the repetitive loss list through acquisition and demolition. Many of these areas have been converted to community gardens which have proven to be very popular in the city.
3	Property owners are aware of flooding causes. Some property owners have undertaken specific floodproofing measures at their own expense.
4	City has undertaken numerous, costly capital improvement projects to improve drainage within this Area.

Table 2.29 – Past and Current Mitigation Actions in Zone 3

Past and Current Mitigation Actions	
1	Property owners have documented flooding and identify flooding concerns in returned questionnaires from this analysis.
2	The City has eliminated 24 properties from the repetitive loss list through acquisition and demolition. Many of these areas have been converted to community gardens which have proven to be very popular in the city.
3	Property owners are aware of flooding causes. Some property owners have undertaken specific floodproofing

Past and Current Mitigation Actions	
	measures at their own expense.

2.5.2 Prioritization

In order to facilitate the implementation of the following recommended mitigation actions, a prioritization schedule is included based on the following criteria:

- Cost
- Funding Availability
- Staff Resources
- Willingness of Property Owner to Participate
- Additional Planning Requirements

The priority rating for the following mitigation actions is summarized in Table 2.30. Each of the above prioritization variables was rated on a scale of 1 to 5, with 5 indicating the greatest difficulty for implementation. The weight of each variable is indicated in the prioritization table. Those mitigation actions with the lowest overall priority scores are expected to be the easiest to implement and should therefore be implemented first. An overall priority rating of high, medium, or low is assigned to each recommended action, using the following scale:

- High Priority (should be completed within 2 years): Score of 0.00 – 1.99
- Medium Priority (should be completed within 2 to 4 years): Score of 2.00 – 3.99
- Low Priority (should be completed within 4 to 5 years): Score of 4.00 – 5.00

2.5.3 Recommendations

The City will encourage property owners to use floodproofing measures to help protect lower levels of their property. The city will also increase its public education efforts to increase awareness of flood preparedness and flood protection measures including moving valuable items to above the flood elevation and permanently elevating vulnerable HVAC units. At the same time, the City will work with property owners, citizens, neighboring communities, the state and other regional and federal agencies to implement capital improvement projects which will help to eliminate flooding in the repetitive loss areas. The mitigation actions are recommended for all three zones located in the City of Savannah.

Mitigation Action 1: Flood Insurance Promotion

Property owners should obtain and keep a flood insurance policy on their structures (building and contents coverage). The City will continue on an **annual basis** to target all properties in the repetitive loss areas, reminding them of the advantages to maintaining flood insurance through its annual outreach effort.

Responsibility: The City's Development Services Department will provide the most relevant up-to-date flood insurance information to all property owners within the repetitive loss areas located in Zone 1.

Funding: The cost will be paid for from the City's operating budget through the Development Services Department.

Priority: High

Mitigation Action 2: Protection of Personal Property

Property owners should not store personal property in basements and crawl spaces since personal property is not covered by a flood insurance policy. The city will increase its outreach efforts on an **annual basis** to include information to the outreach materials for the identified repetitive loss areas.

Responsibility: The City's Development Services Department will provide the most relevant up-to-date information to all property owners within the repetitive loss areas located in Zone 1.

Funding: The cost will be paid for from the City's operating budget through the Development Services Department.

Priority: Medium

Mitigation Action 3: Encourage Floodproofing Techniques

When appropriate, property owners should consider floodproofing measures such as flood gates or shields, flood walls, and hydraulic pumps.

Responsibility: The City's Development Services Department will promote effective flood protection measures and provide advice and assistance to property owners who may wish to implement such measures in an **on-going** program.

Funding: The cost will be paid by individual property owners. Advice and assistance will require staff time. Promotion of existing floodproofing measures may require some additional funds from the City's operating budget.

Priority: Medium

Mitigation Action 4: Elevate or Acquire Properties

Continue acquisition/demolition mitigation of high-risk flood-prone properties. The highest priorities are properties at the greatest flood risk and where drainage improvements will not provide an adequate level of protection.

Responsibility: The City's Real Property Services, in conjunction with the Development Services Department will continue to target properties for acquisition/demolition.

Funding: The acquisition and demolition will be paid for using FEMA mitigation grant funds. Staff time to develop the list of target properties will require funds from the City's operating budget.

Priority: Low

Mitigation Action 5: Prioritize Drainage-Related Capital Projects

The city should prioritize funding for drainage improvement projects in the identified repetitive loss areas and their associated drainage basins. Local funds can serve as a match for federal grants to undertake larger scale, more costly improvement projects that support mitigation. This type of mitigation presents an opportunity for incorporation of nature-based solutions and natural resource protection.

Responsibility: The City's Development Services Department in conjunction with CIP Management.

Funding: Special Purpose Local Option Sales Tax (SPLOST) funds.

Priority: Medium

Mitigation Action 6: Elevate Mechanical Equipment

Encourage property owners to elevate inside and outside mechanical equipment above the BFE and install flood resistant materials in crawl spaces.

Responsibility: The City's Development Services Department will promote effective flood protection measures and provide advice and assistance to property owners who may wish to implement such measures in an **on-going** program.

Funding: The cost will be paid by individual property owners. Advice and assistance will require staff time. Promotion of existing floodproofing measures may require some additional funds from the City's operating budget.

Priority: Medium

2.5.4 Prioritization Table

Table 2.30 – Prioritization of Recommended Mitigation Actions

MITIGATION ACTION #	PRIORITIZATION VARIABLES (WEIGHT)					TOTAL
	Cost (30%)	Funding Availability (25%)	Property Owner Willingness (20%)	Staff Resources (15%)	Planning Needs (10%)	
1: Flood insurance promotion	2	2	1	1	1	1.55
2: Protection of personal property	1	2	4	2	1	2.00
3: Encourage floodproofing techniques	2	3	4	2	2	2.65
4: Elevation or acquisition	5	4	5	3	4	4.35
5: Drainage-related CIP projects	4	2	1	3	4	2.75
6: Encourage property owners to elevate mechanical equipment	2	2	3	2	1	2.10

References

City of Savannah Code of Ordinances

Federal Emergency Management Agency, Community Information System. February 2026.

Federal Emergency Management Agency, Flood Insurance Study, Chatham County and Incorporated Areas. Effective August 16, 2018.

Federal Emergency Management Agency/ISO, City of Savannah Repetitive Loss Data, 2018.

Federal Emergency Management Agency, National Flood Insurance Program, Community Rating System CRS Coordinator's Manual. FIA-15/2017. Section 510.

Federal Emergency Management Agency, National Flood Mitigation Data Collection Tool and RLP Viewer, User's Guide. FEMA 497/August 2008.

Federal Emergency Management Agency, Reducing Damage from Localized Flooding: A Guide for Communities. FEMA 511/June 2005. Part III Chapter 7.

Federal Emergency Management Agency, Selecting Appropriate Mitigation Measures for Flood prone Structures. FEMA 551/March 2007.

Federal Emergency Management Agency, National Flood Insurance Program, Community Rating System, Mapping Repetitive Loss Areas, August 2008.

University of New Orleans, Center for Hazards Assessment, Response and Technology, Draft Guidebook to Conducting Repetitive Loss Area Analyses, 2012.

Appendix A – Property Notification Letters

Note: Property Notification Letters are kept on file with the City of Savannah Development Services Department and will be provided upon request. In accordance with the Privacy Act of 1974, Property Notification Letters will not be shared with the general public.

Appendix B – Questionnaire Responses

Note: In accordance with the Privacy Act of 1974, Appendix B will not be shared with the general public.

Appendix C – Building Survey Data

Note: In accordance with the Privacy Act of 1974, Appendix C will not be shared with the general public.