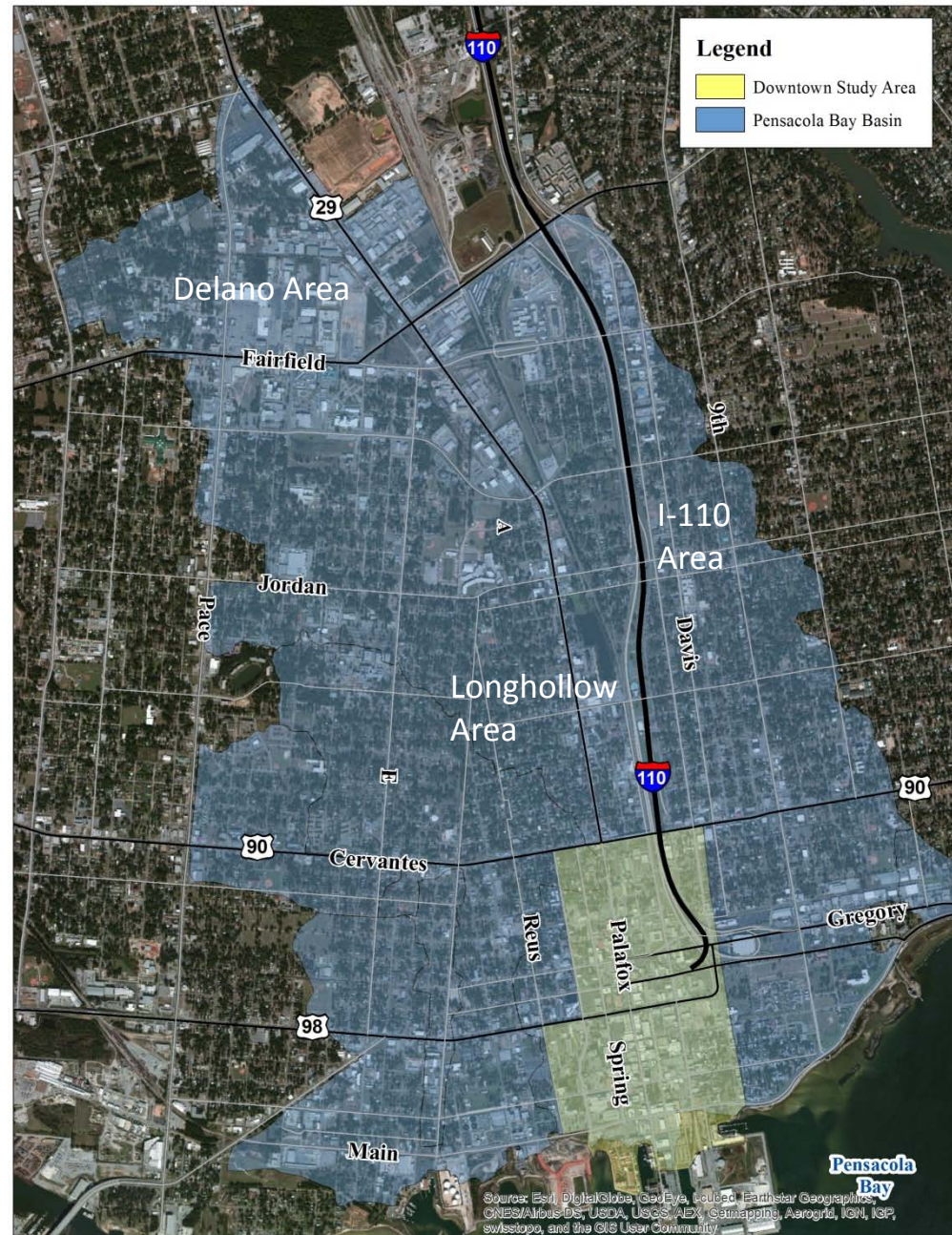


Project Location

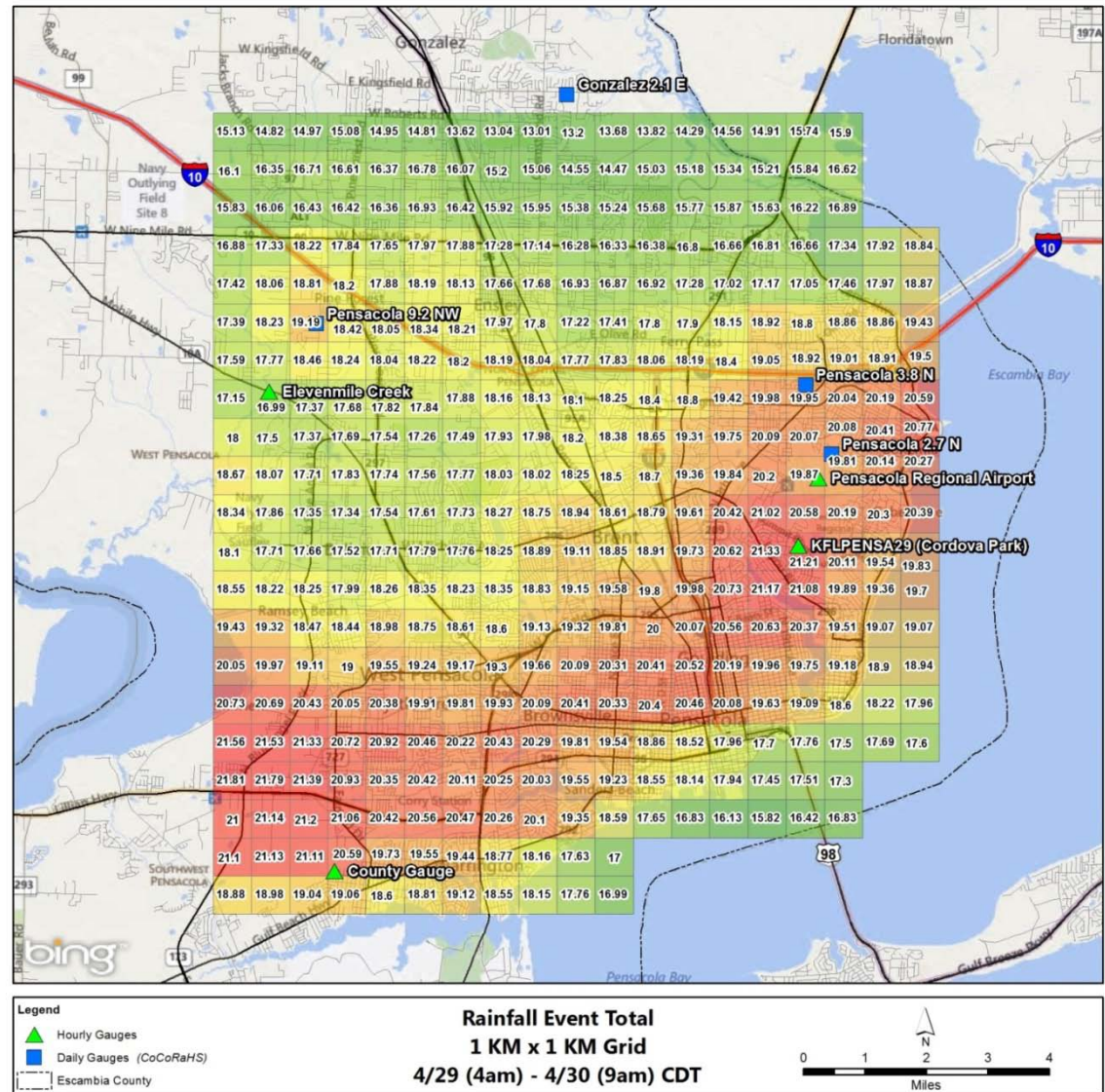
Downtown Study Area

- Study focuses on 0.9 sq. mi. area bounded by Cervantes, Alcaniz, Reus, and Pensacola Bay
- Part of larger Pensacola Bay Basin
- Inflow from Longhollow Area, Delano Area, and I-110

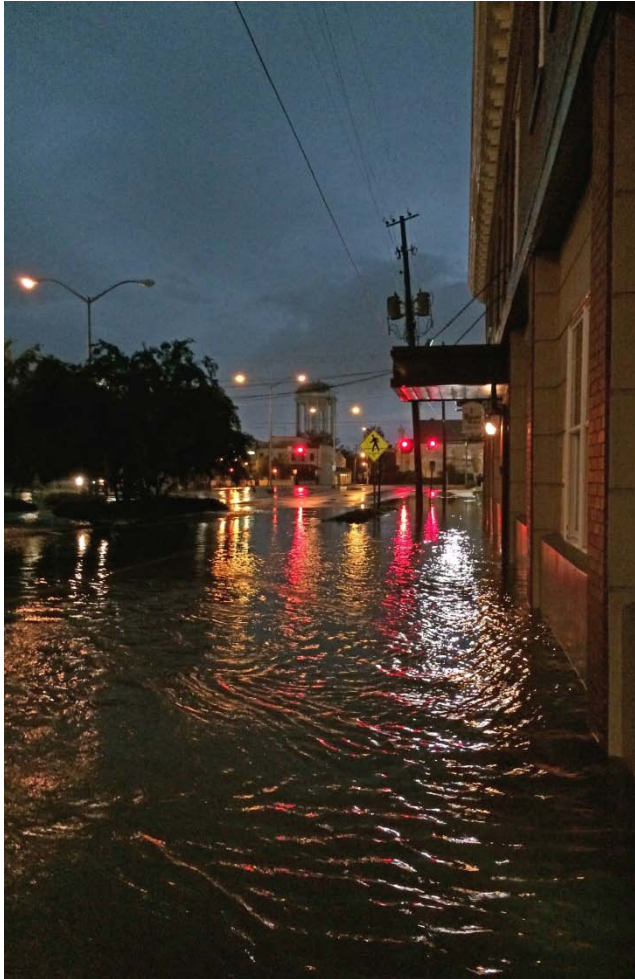


April 2014 Storm

- Totals range from 13-22 inches over southern Escambia County
- Highest rainfall occurred over southern Pensacola
- Estimated return frequency is 200 to 500 years



Project Need



Wright Street looking West
toward Palafox



Guillemard Street looking south at Wright Street

Project Need



Palafox Street looking north from
Garden Street



IHMC Building



IHMC Building

Scope of Study

Downtown Study Objectives

- Focuses on 0.9 sq. mi. portion of Pensacola Bay Basin
- Evaluate performance of 18" and larger storm pipe for 25 year and 100 year return periods
- Recommend improvements

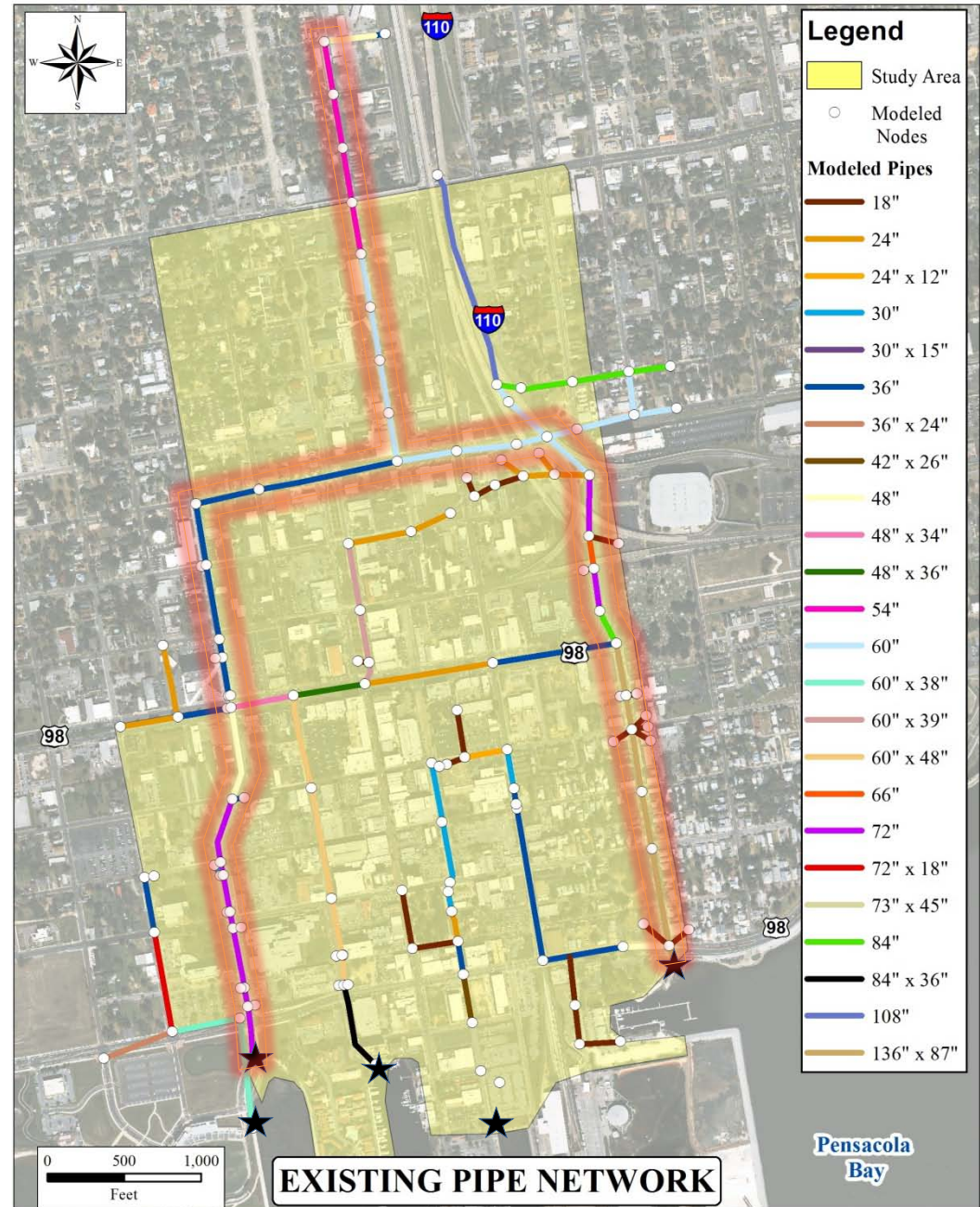


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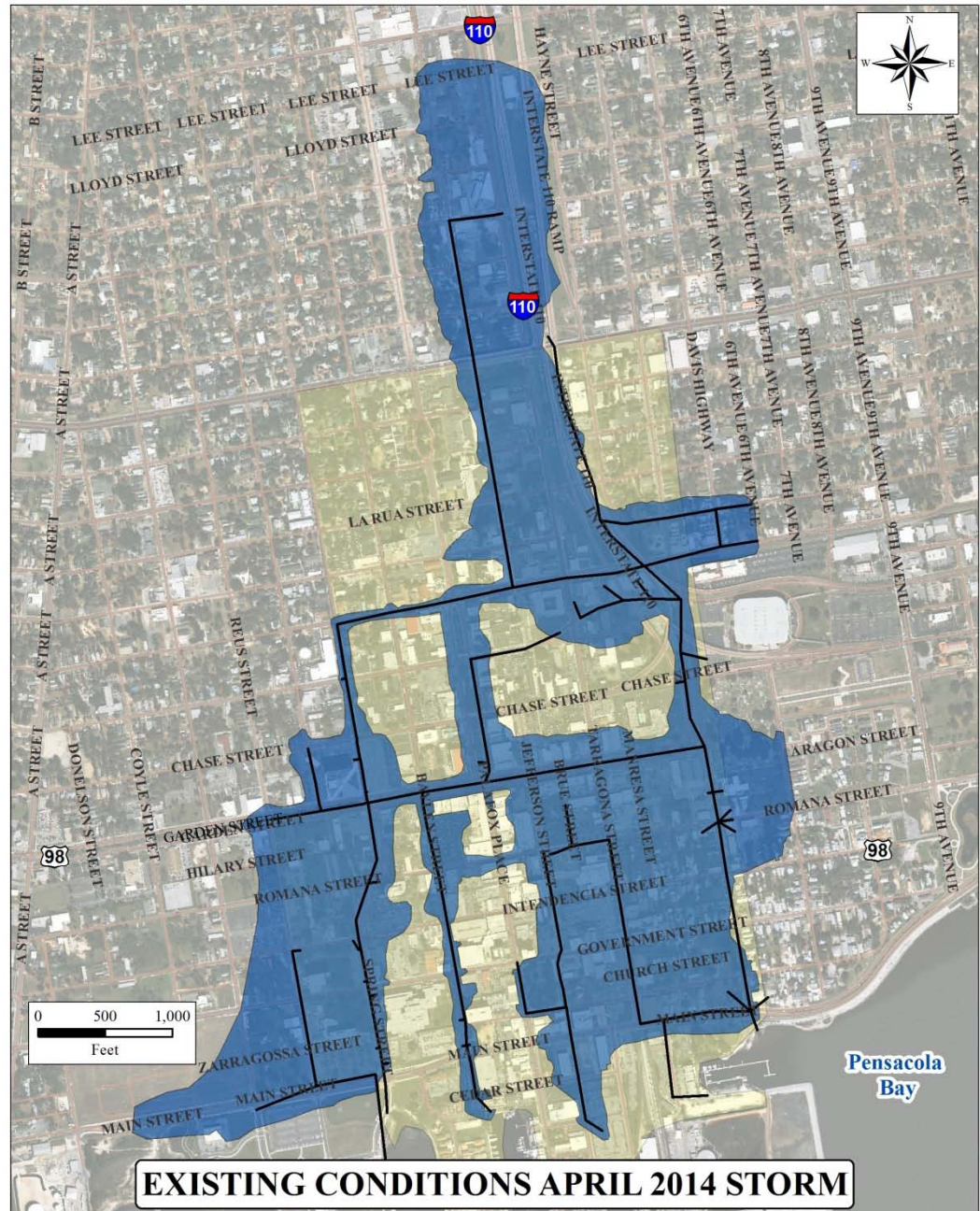
Existing Pipe Network

- System served by 5 significant downtown outfalls (Reus, Spring, Baylen, Jefferson and Alcaniz)
- Existing system has 3 major trunk lines (Alcaniz, Guillemard, Spring)



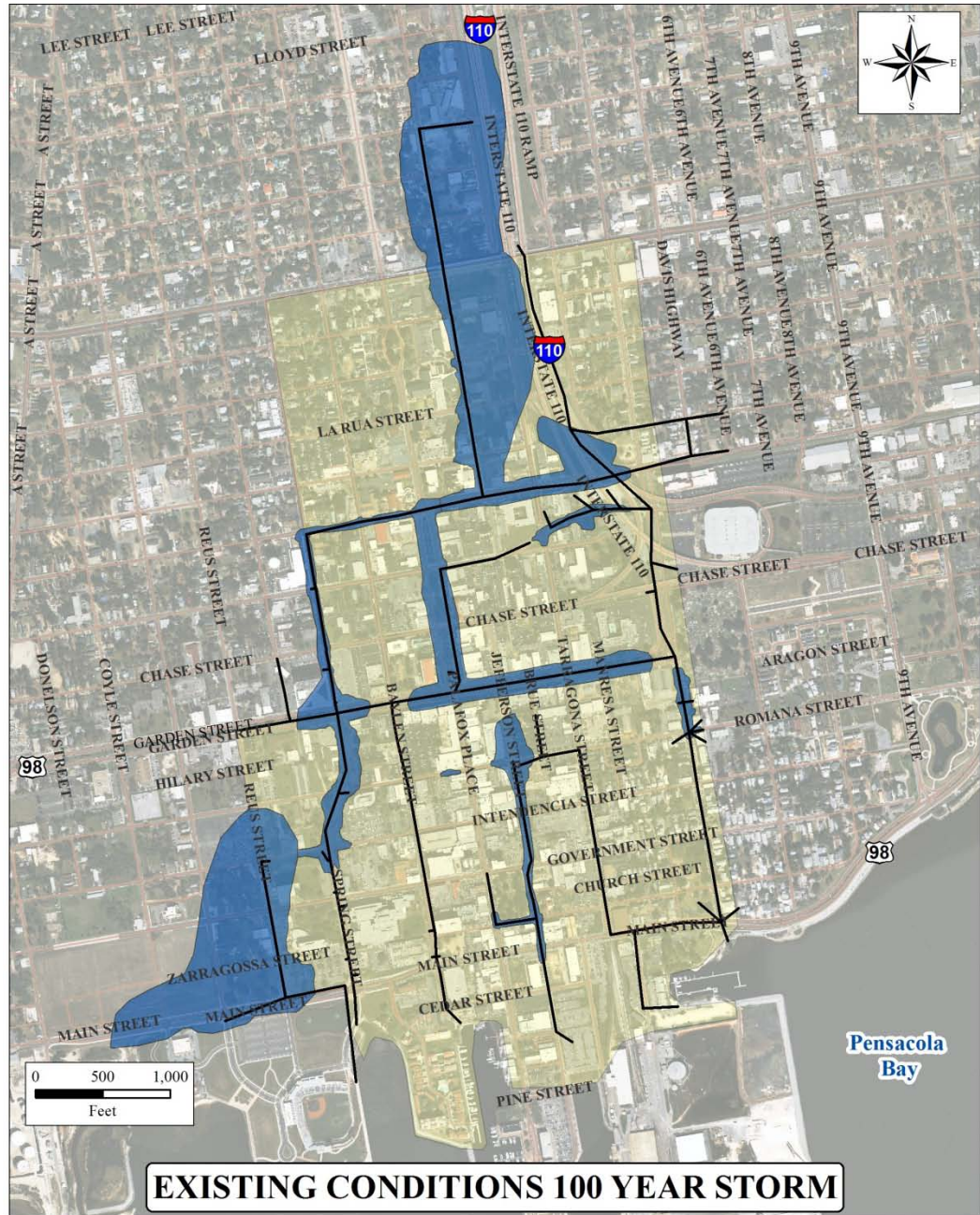
Existing Conditions April 2014 Storm Event

- Developed stormwater model of existing pipe network
- Model shows extensive flooding during the April storm event
- Shading represents area where flooding exceeds top of curb



Existing Conditions 100 year Storm

- Significant flooding predicted for 100 year storm event
- Major issues identified in various locations throughout the study area
- Additional smaller areas of more localized flooding also present

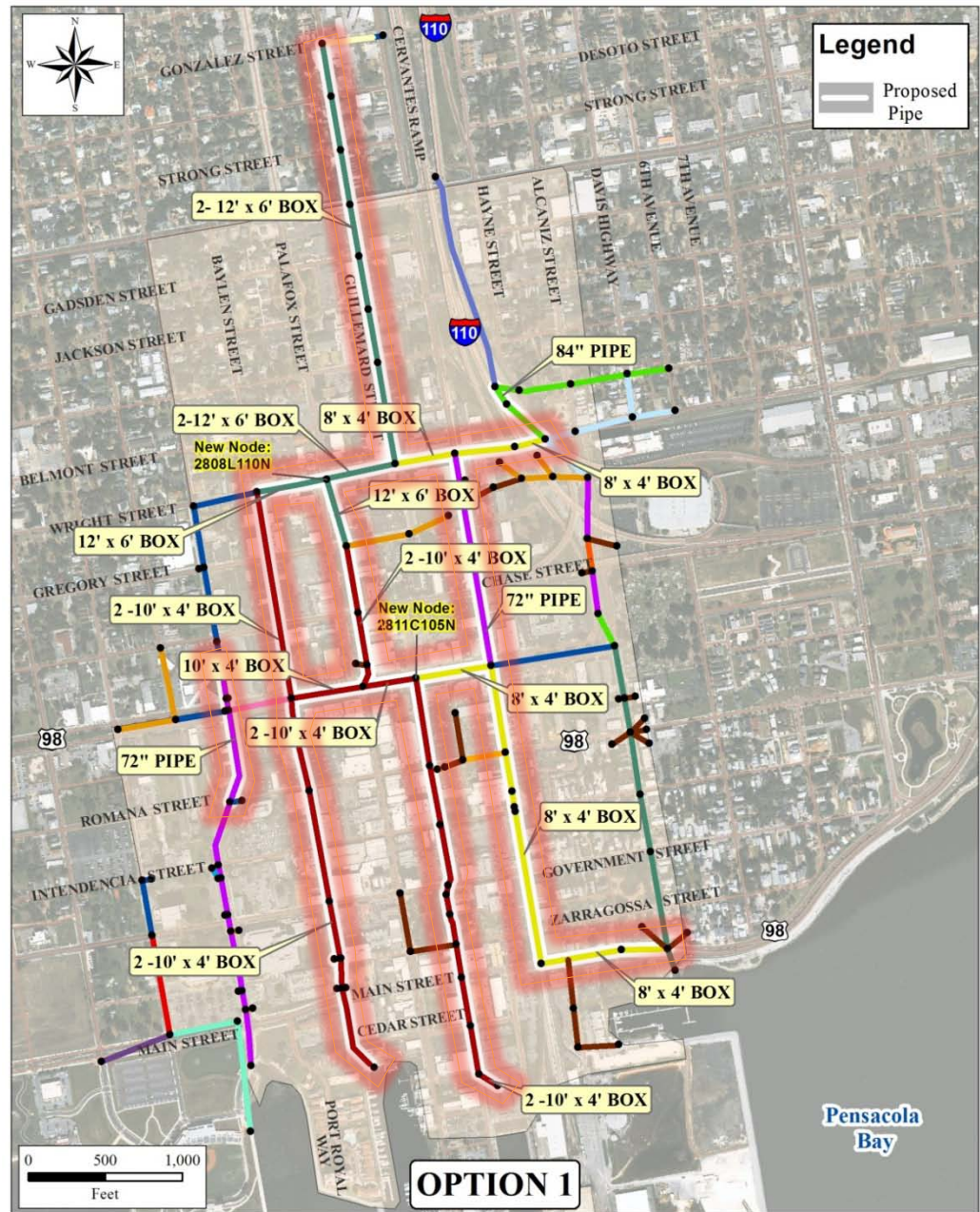


- Spring Street and Reus Street perform better during a 25 year storm
- Other problem areas remain



Option 1 Layout

- Portions of the downtown system have excess capacity
- Option 1 attempts to interconnect to use that capacity, and also upgrade critical pipes
- Estimated cost: \$31M

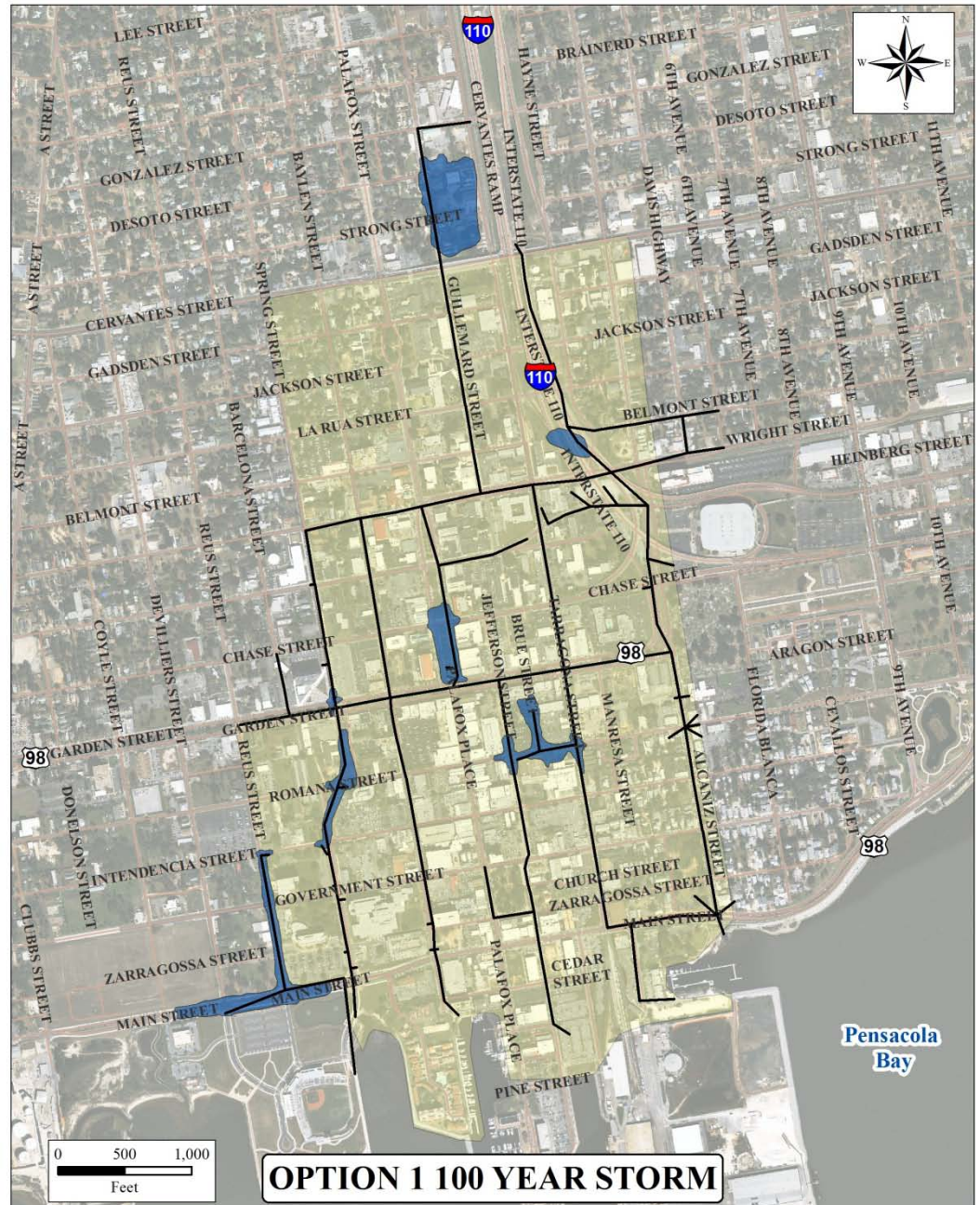


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Option 1

100 Year Storm

- Option 1 reduces flooding during the 100 year storm
- Remaining area of flooding on Guillemard, Palafox, Spring, and Reus

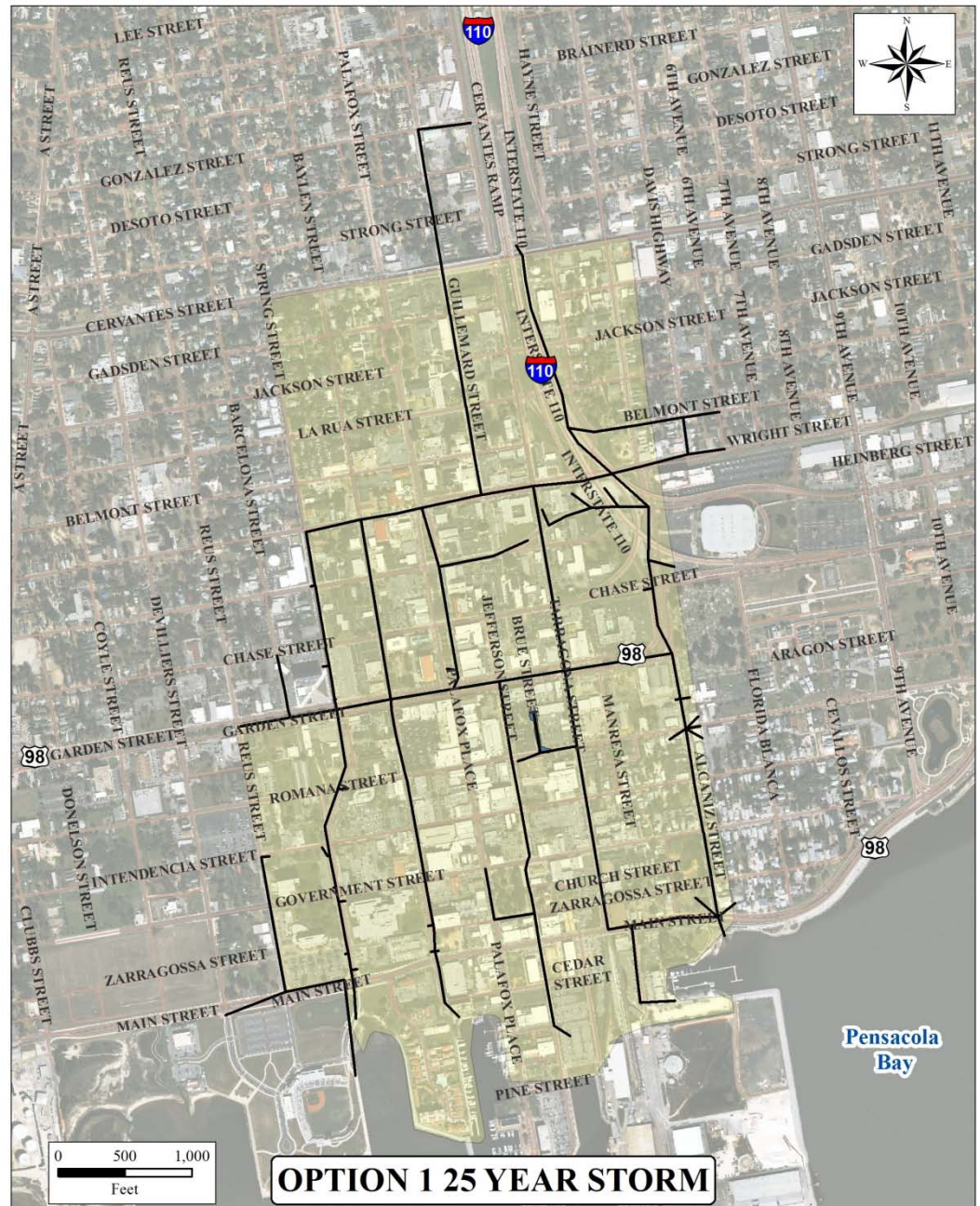


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Option 1

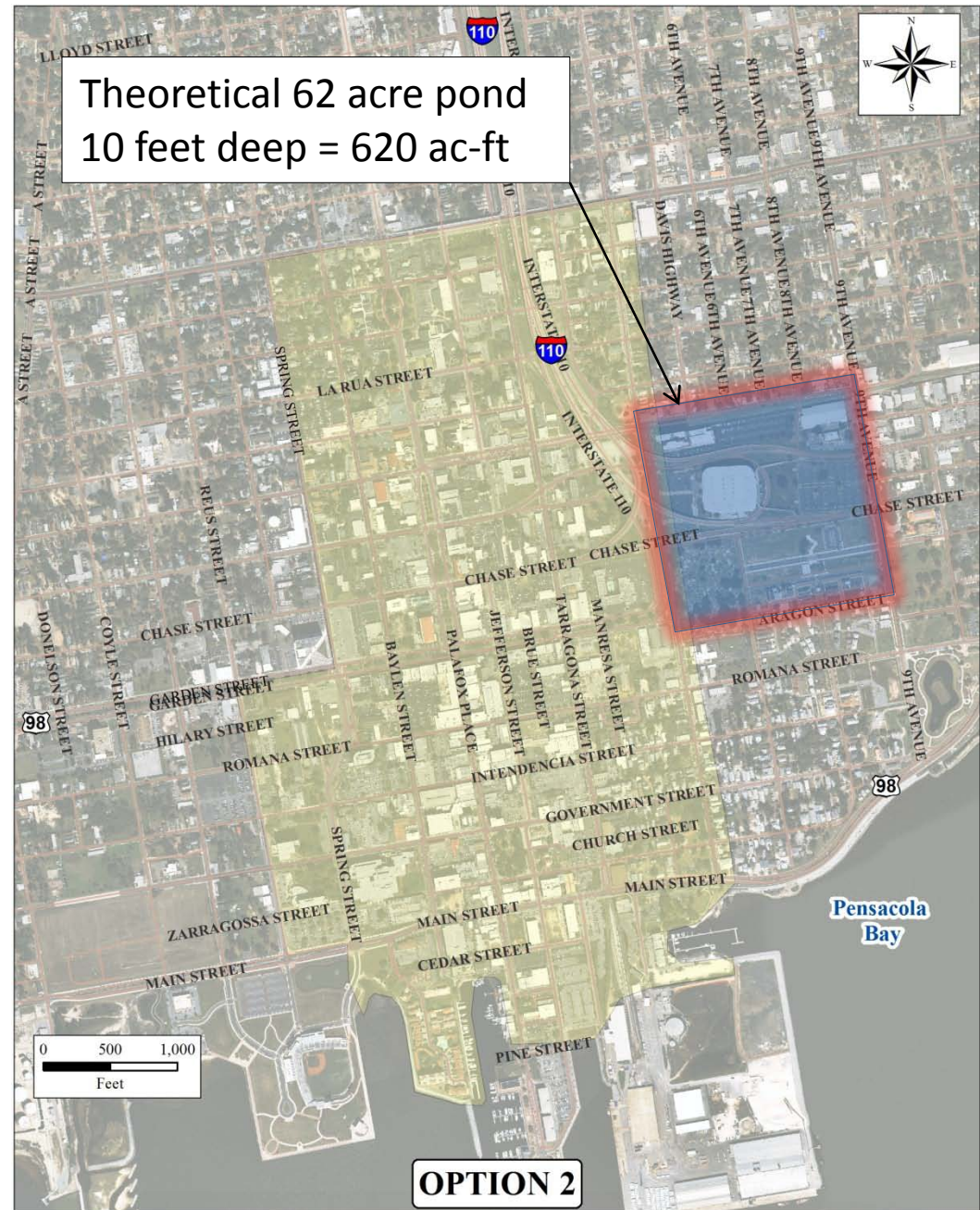
Year Storm

- Option 1 would almost eliminate flooding during the 25 year storm
- Localized issues may remain due to surface drainage and inlet capacity issues



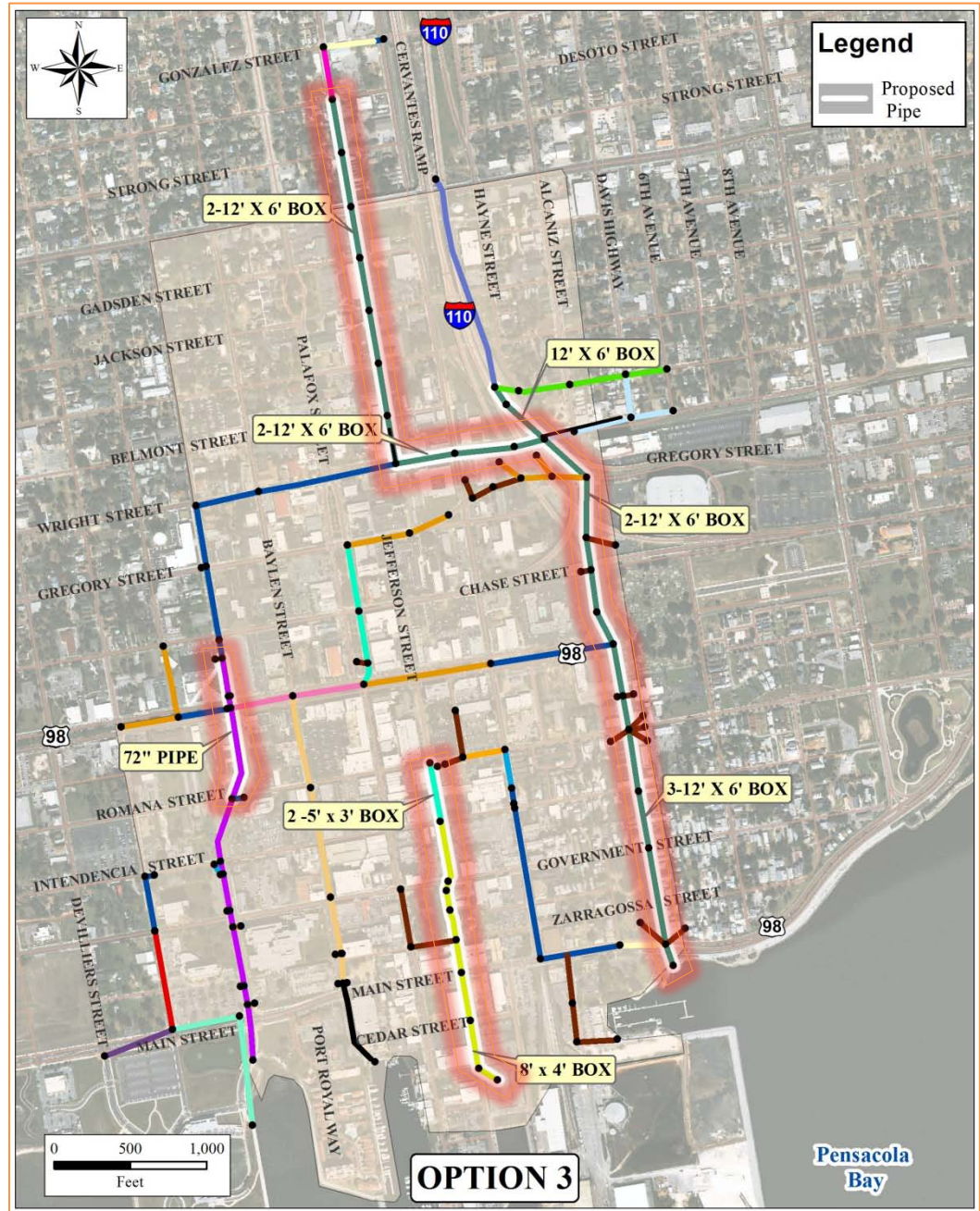
Option 2 – Pond(s)

- 620 ac-ft theoretical storage volume required to eliminate infrastructure improvements
- Not feasible due to build-out conditions and necessary space requirements
- Estimated cost:\$67M



Option 3 Layout

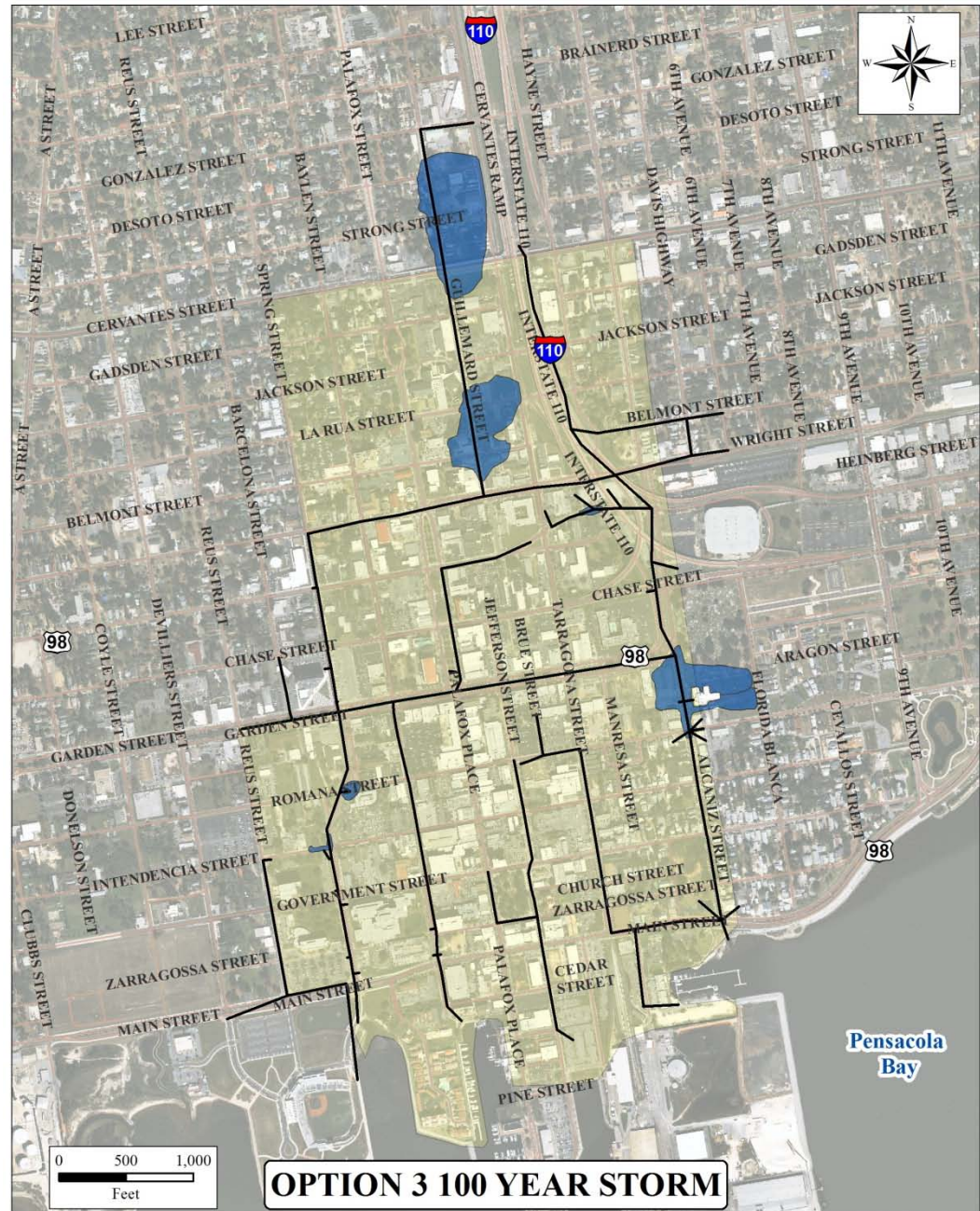
- Option 3 focuses on upsizing critical trunk lines along Guillemard, Alcaniz, and Jefferson Street
- Estimated cost: \$22M



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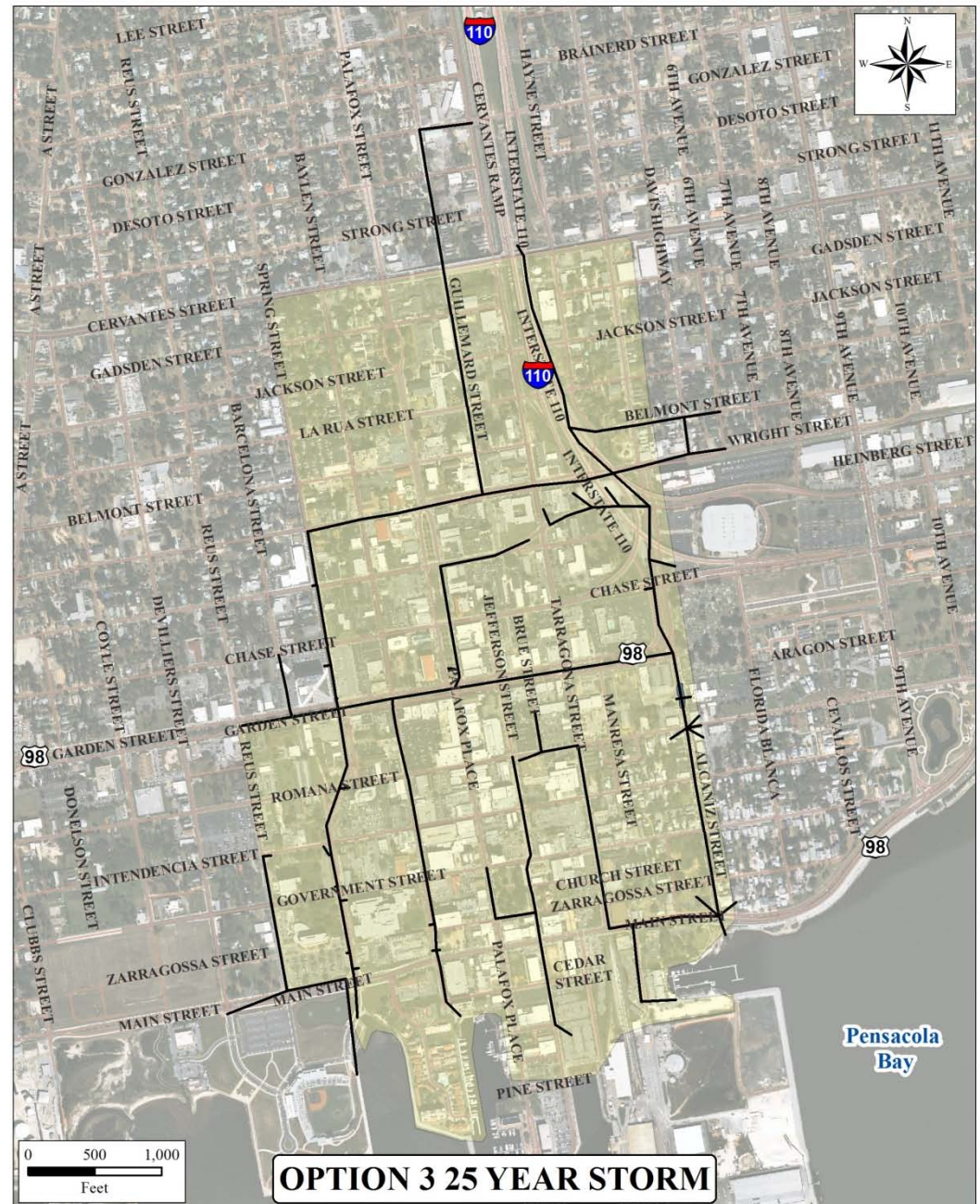
Option 3 100 Year Storm

- Option 3 eliminates flooding except along Guillemard Street
- Model predicts additional flooding along Alcaniz Street near Aragon and Romana



Option 3 25 Year Storm

- Option 3 would almost eliminate flooding during the 25 year storm
- Localized issues may remain due to surface drainage and inlet capacity issues



Pumping Considerations

- Reliant on a power source
- Mechanical System subject to breakdowns
- Considered as supplemental system where predicted flooding persists even with modeled gravity piping improvements
- Modeled pump station capacity limited to a maximum of approximately 30,000 gallons per minute



Pumping Results

- Model predicts that minor flooding during the statistical 25 year design storm can be alleviated for both options
- Model predicts that some peak stages will still remain above the top of curb at various locations during the statistical 100 year design storm even with 30,000 GPM pump stations operating

Cost of Improvements

Option	Cost Without Pump Option	Cost With Pump Option
Option 1	\$31M	\$73M
Option 2 (Storage)	\$67M	N/A
Option 3	\$22M	\$49M