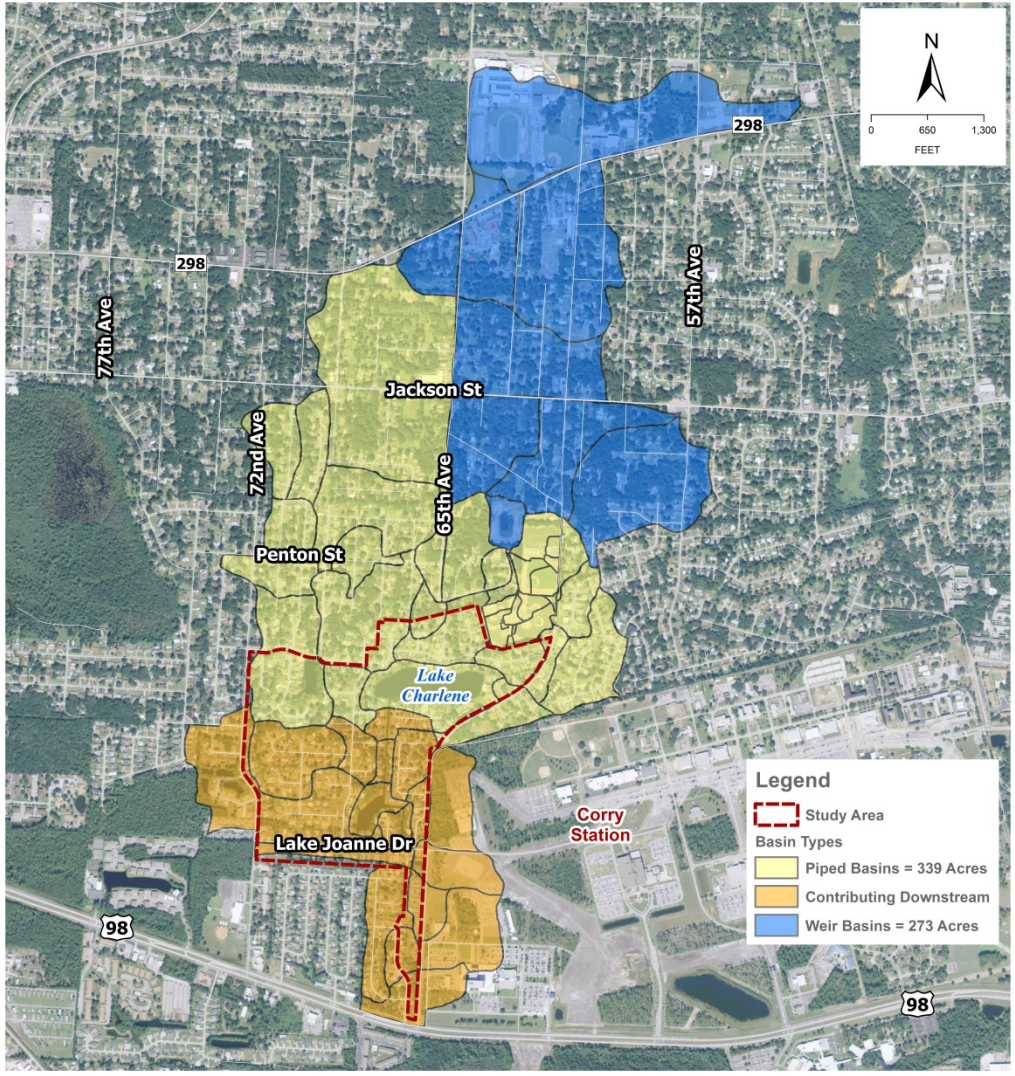
Lake Charlene Area Drainage Improvements

BOCC Meeting
January 10, 2019

LAKE CHARLENE DRAINAGE PROJECT

- This is a Flood Control project
- Overall Drainage Basin Area
  - 339 Acres Directly Contributing to the Lake (yellow)
  - 167 Acres Contributing to outfall path (orange)
  - Additional 273 Acres contributing during significant flood events (blue)



LAKE CHARLENE DRAINAGE PROJECT

History:

- Mostly Developed 1973-1980
- Reported Structure Flooding
  - 1979
  - 2005
  - 2012
  - 2014 (over 200 reports)

LAKE CHARLENE DRAINAGE PROJECT

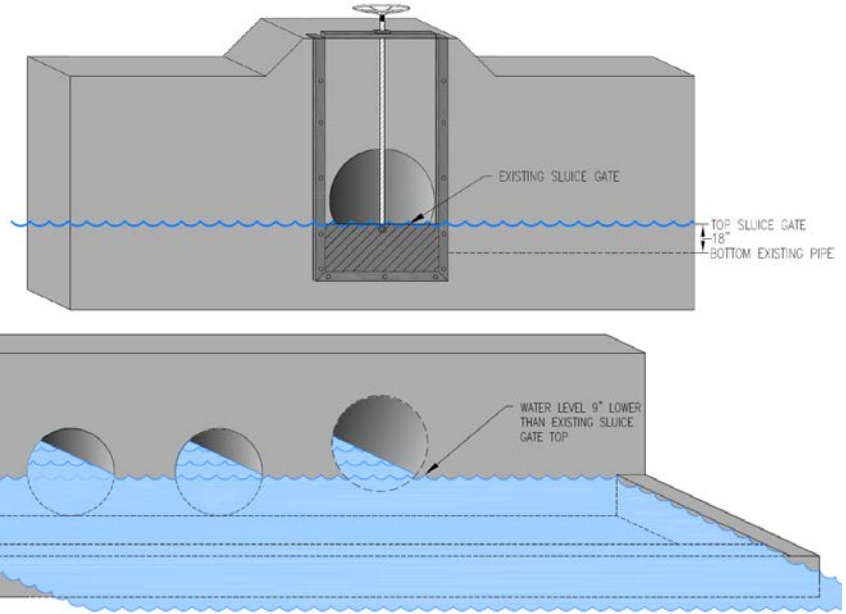
Proposed Grant-funded Project

- Improvements: Addition of 60” outfall pipes (shown in green)
- Location: Canal at Lake Joanne Drive to 61st Avenue to south of US 98
- Overall Goal: Reduce the frequency of flooding in the Lake Charlene Area and flood damage to homes and properties

LAKE CHARLENE DRAINAGE PROJECT

Sluice Gate Area

- Existing sluice gate (top photo)
- Existing sluice gate schematic (middle image)
- Proposed project condition schematic – addition of 2 pipes (bottom image)
- Weir provides a stable elevation for the lake and stable flow to down-gradient properties
- Flood control solution requires lowering of the lake

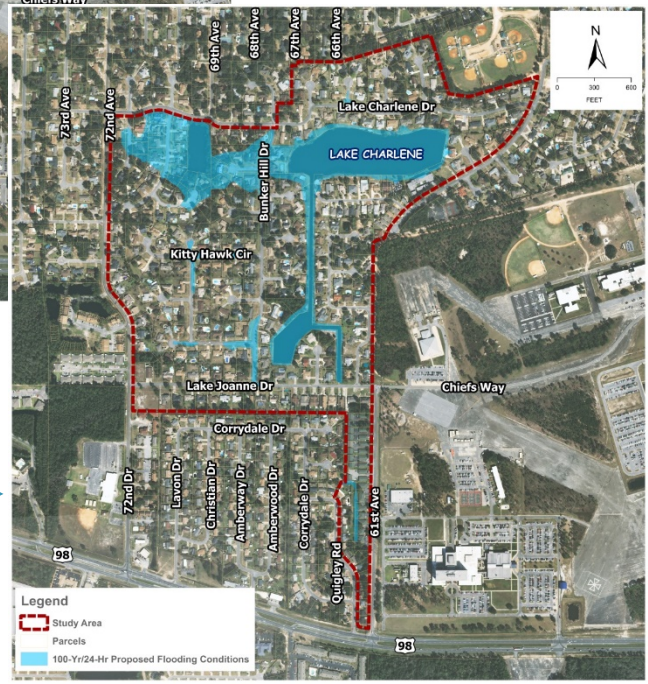


LAKE CHARLENE DRAINAGE PROJECT

Proposed Project Intended to:

- Reduce frequency of flooding by lowering Lake level by 9” and by providing additional outfall piping
- Protect 75 structures from flooding in 100-year storm
- Reduce flooding on 266 properties and approximately 77 acres of property around the Lake

100-year Flooding Before



100-year Flooding After

LAKE CHARLENE DRAINAGE PROJECT

Public Meetings

- 8/9/2014: Initial meeting with HOA
- 8/17/2015: Discussed area history, area issues, grant project, & area needs
- 4/11/2017: Discussed grant project design
  - Resulted in additional analysis to Lake level
  - Determined that lowering Lake level 9” in lieu of originally proposed 18” would provide similar results

LAKE CHARLENE DRAINAGE PROJECT

Figure shown at 8/17/2015 public meeting

- Top figure shows full 18” lake lowering
- Project will result in only 9” lowering

Why implement the project?

- Reduce frequency of future flood damage
- Construction is 100% Federally Funded
- Provide a stable elevation to the lake, groundwater table, retaining walls, & downstream conditions

LAKE CHARLENE DRAINAGE PROJECT

Lake Charlene HOA Property Needed to Construct

- Proposed endwall structure requires approx. 4800 square foot area (shaded in red)
- Appraisal of property is $14,100

Why remove the sluice gate & acquire parcel?

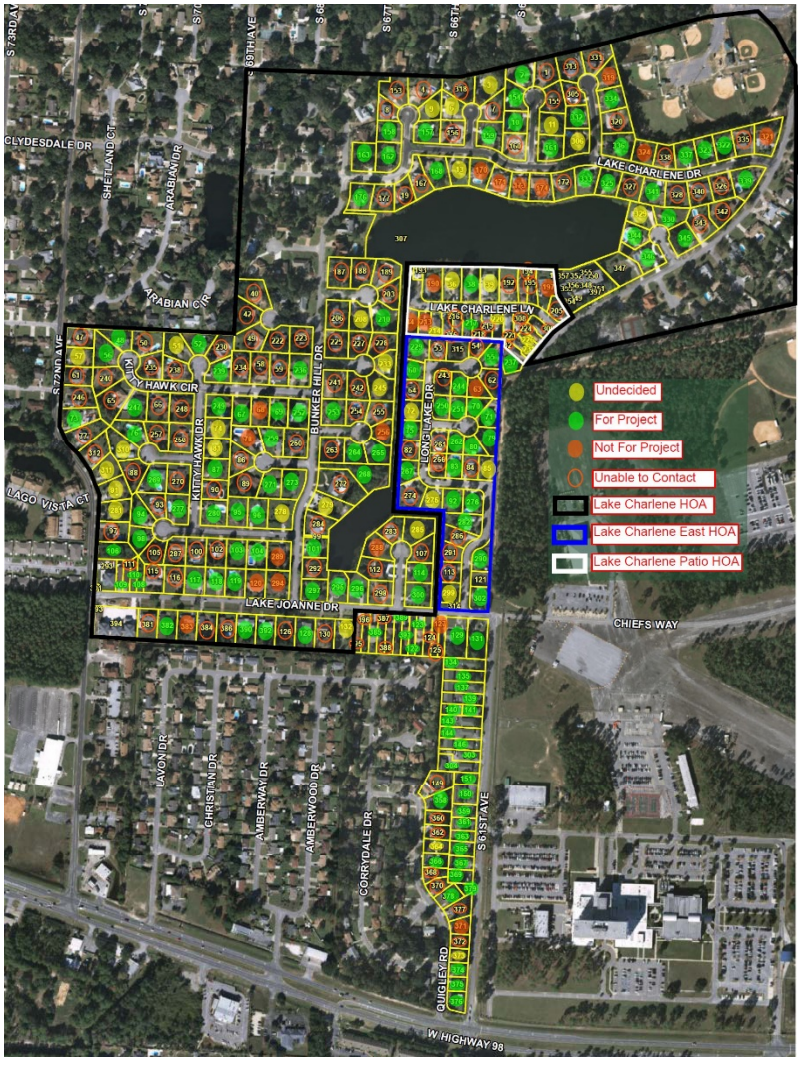
- Stormwater modeling shows that it is required to meet grant requirements for flood stage reduction
- Must connect outfall to the canal
- Must provide maintenance
- Lake is a major component in reducing flood frequency
- Removal is design-critical

LAKE CHARLENE DRAINAGE PROJECT

Citizen Survey

- Intent to gauge public opinion of the project
- Results:

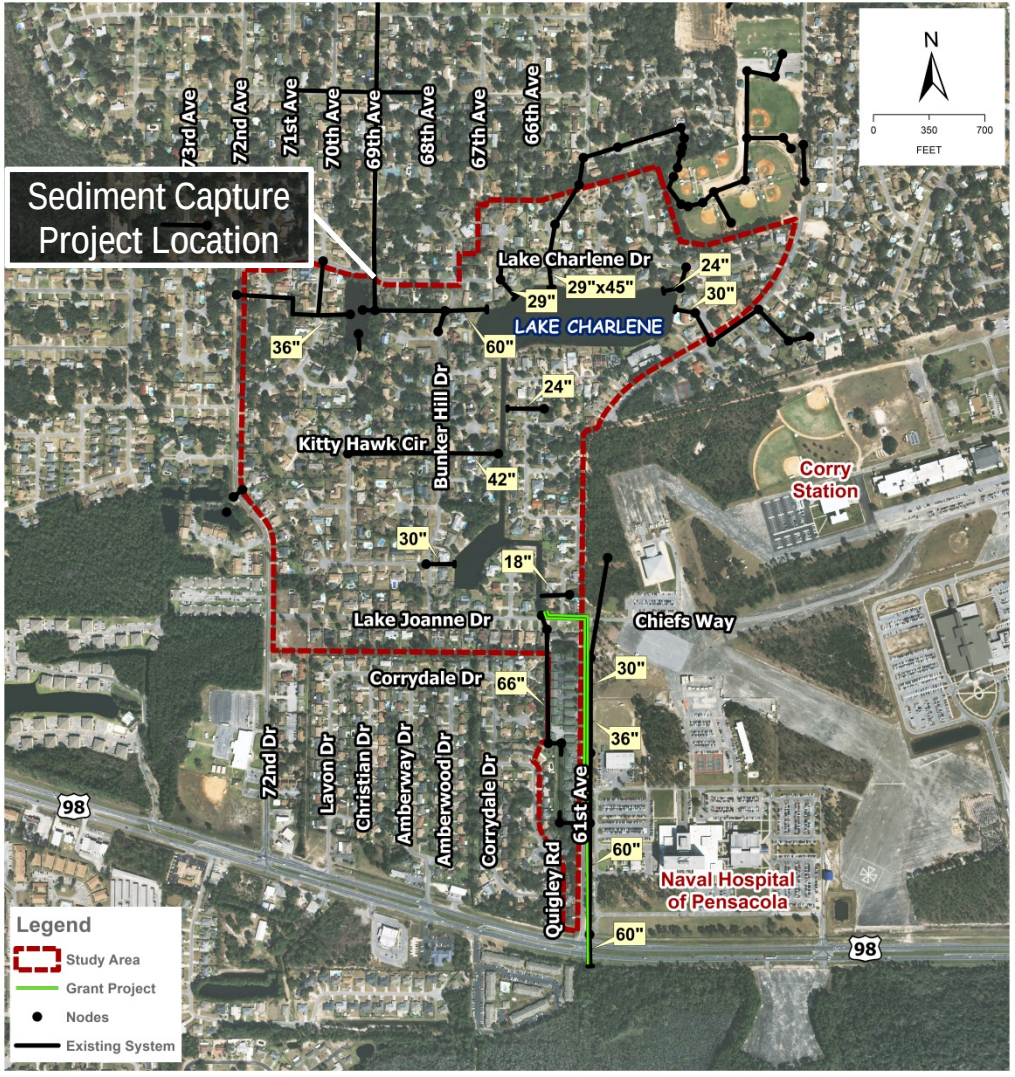
LAKE CHARLENE DRAINAGE PROJECT SURVEY RESULTS		
“YES” TO PROJECT	127	40.97%
“NO” TO PROJECT	22	7.10%
UNDECIDED	34	10.97%
UNABLE TO CONTACT	127	40.97%
TOTAL SURVEYED	310	100%



LAKE CHARLENE DRAINAGE PROJECT

Proposed Sediment Capture Project

- Water Quality project designed to reduce sediment/debris from Lake Charlene's main pipe inflow on 69th Avenue
- Separate from Grant Project (LOST Funded)
- Construction documents submitted for bid; schedule pending



LAKE CHARLENE DRAINAGE PROJECT

Schedule for Construction

- Currently pending property acquisition
- January 2019 - March 2019: Bid Process
- March 2019 - January 2020: Construction
- March 31, 2020: Grant Deadline