

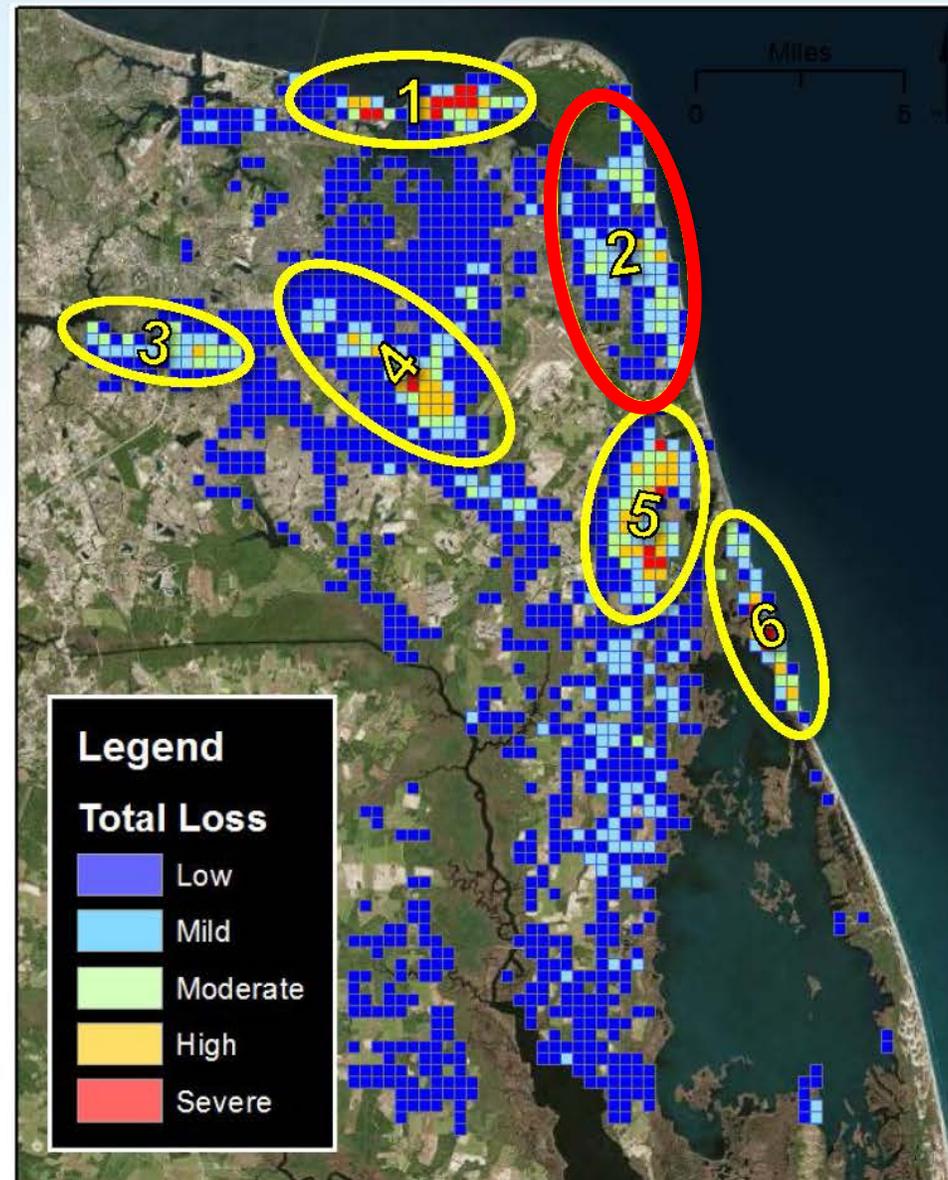


# Central Resort District Drainage Improvements

Toni Alger, P.E.  
City Engineer's Office/Stormwater Engineering Center  
November 21, 2017



# “Focus Areas” for flood risk management

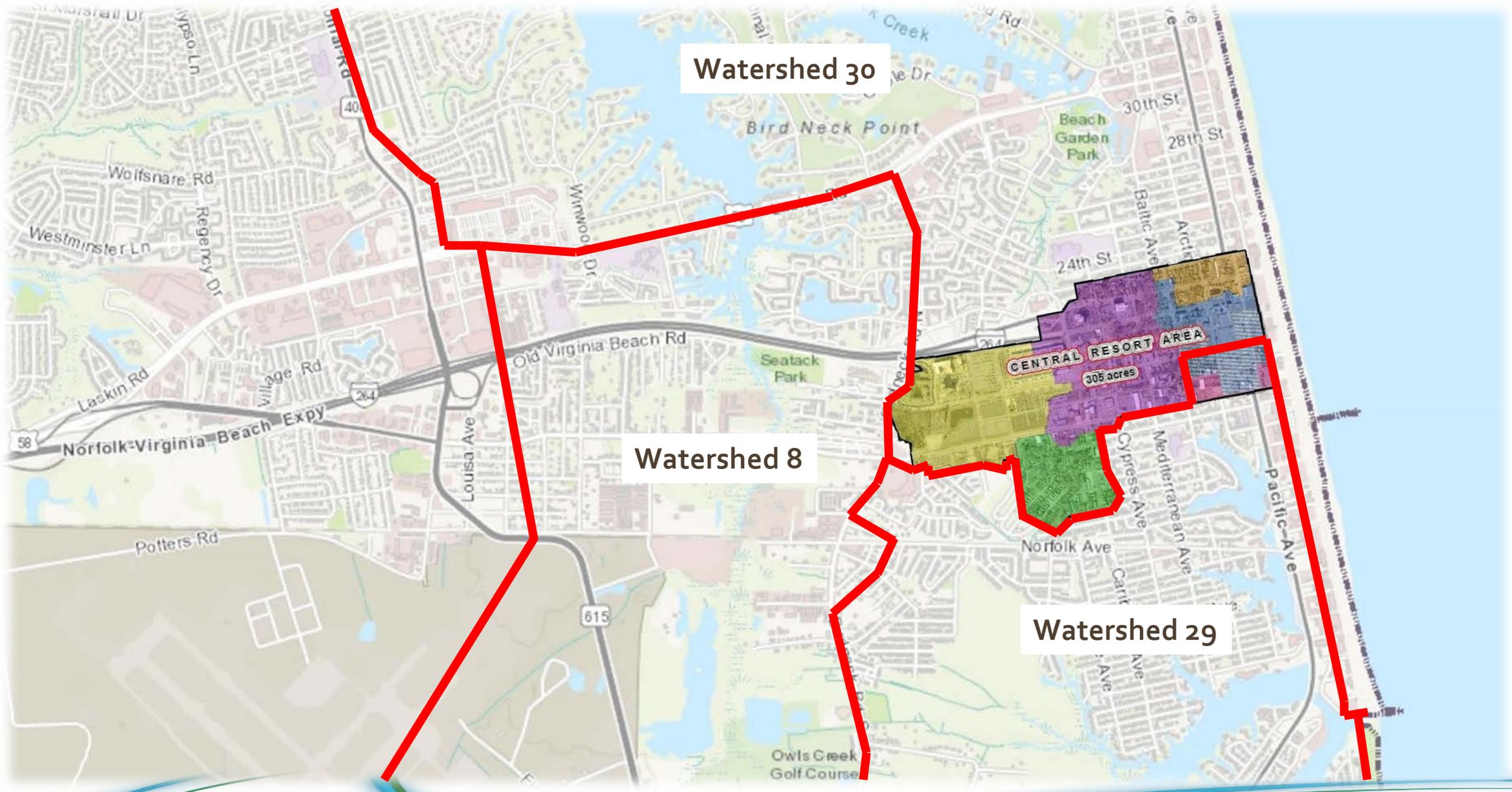


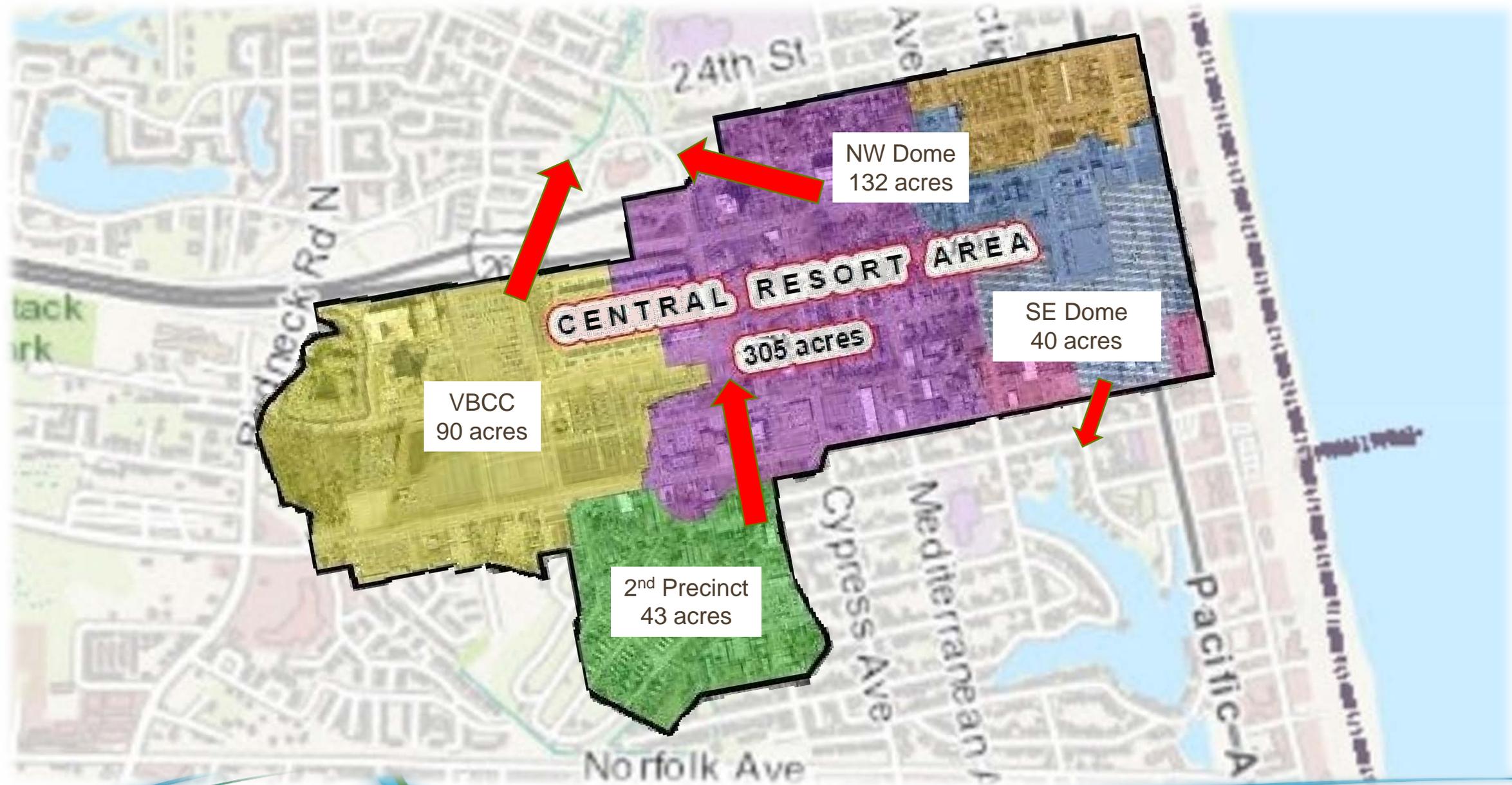
Watershed 30

Watershed 8

Watershed 29

CENTRAL RESORT AREA  
305 acres



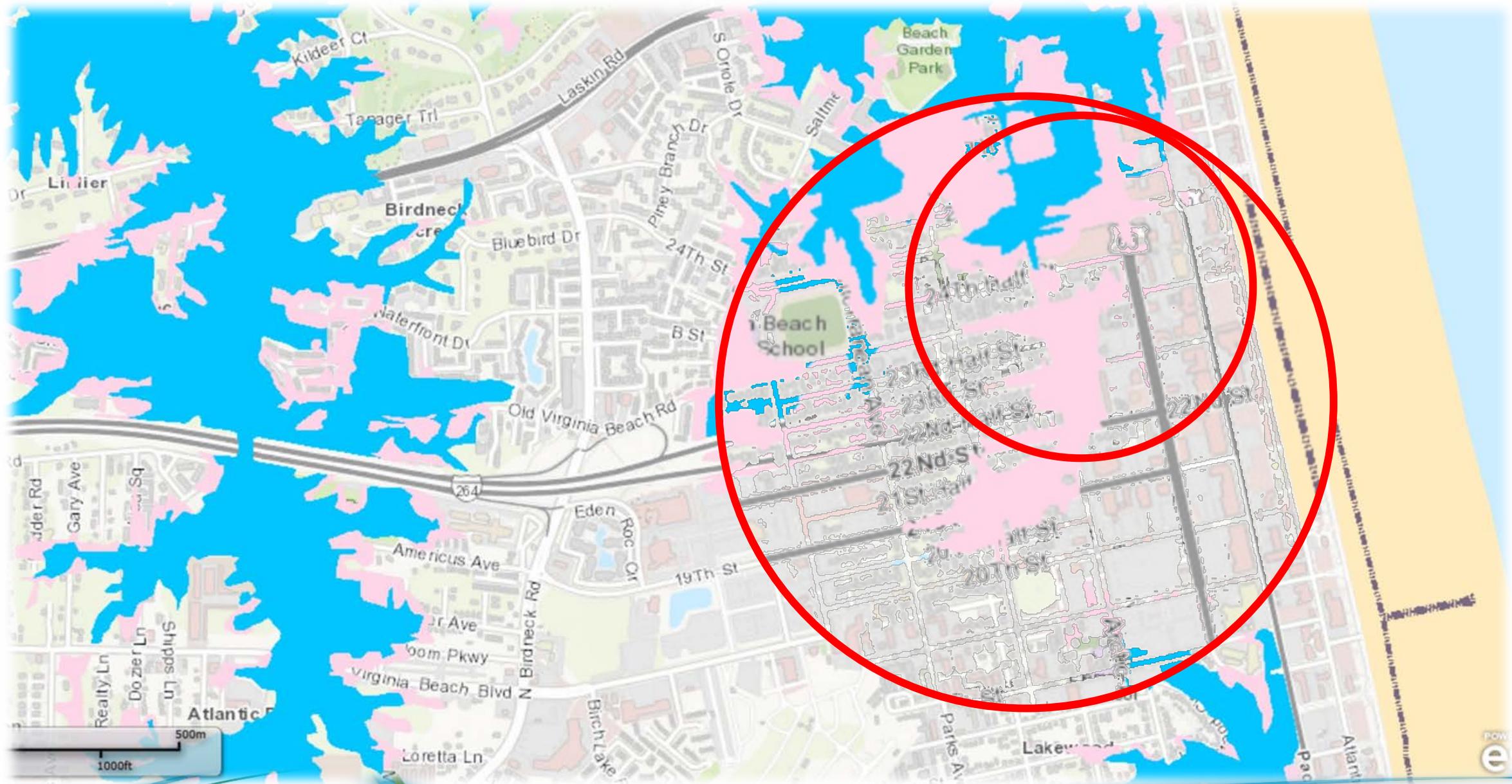


# The Problem...

- Area experiences significant flooding due to:
  - Inadequate Drainage Systems
  - Low Lying Areas
  - Flat Terrain
  - Large Runoff Volumes from Impervious Areas
  - Outfalls are Tidally Influenced

# The Problem...

- Old Stormwater system incrementally constructed
- Stormwater system does not conform to current design standards: quantity and quality
- Sea Level Rise
  - Sea Level is 1 foot +/- higher today
  - Expected to be 1.5 feet higher (or more) in 50 years
  - Higher coastal water levels diminish stormwater system performance
- Frequency and severity of storms are increasing









Playa Rana  
CONDOMINIUMS

PERMIT REQUIRED  
AND PAID BY  
PROPERTY OWNER  
FOR ALL WORK  
ON HIGHWAY & BAY

EURE 75





ROAD

CLOSED

10/29/2012 10:21



10/29/2012 10:22

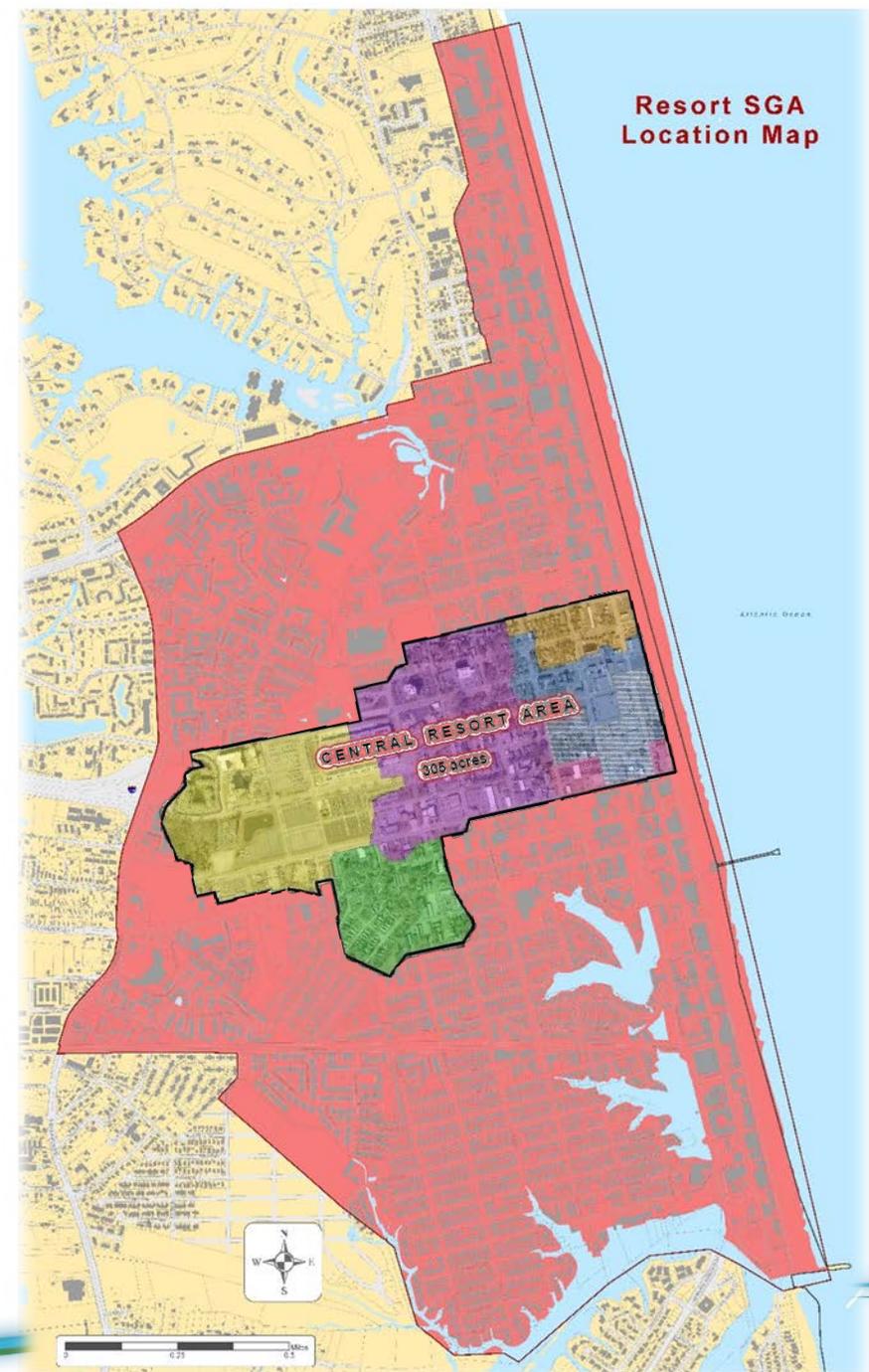




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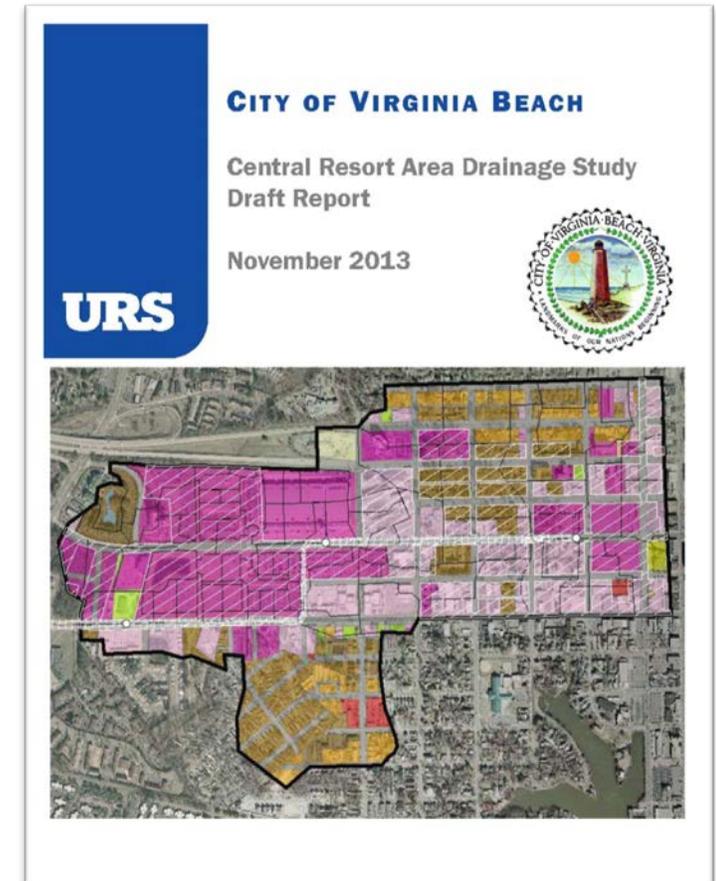
# Impacts...

- Resort SGA
  - Largest SGA
  - Proposed Redevelopment
  - Major Changes in Land-use
- Economic Development
  - Laskin Gateway
  - ViBe Creative District between 17<sup>th</sup> and 21<sup>st</sup> Streets
  - 19<sup>th</sup> Street Corridor Improvements



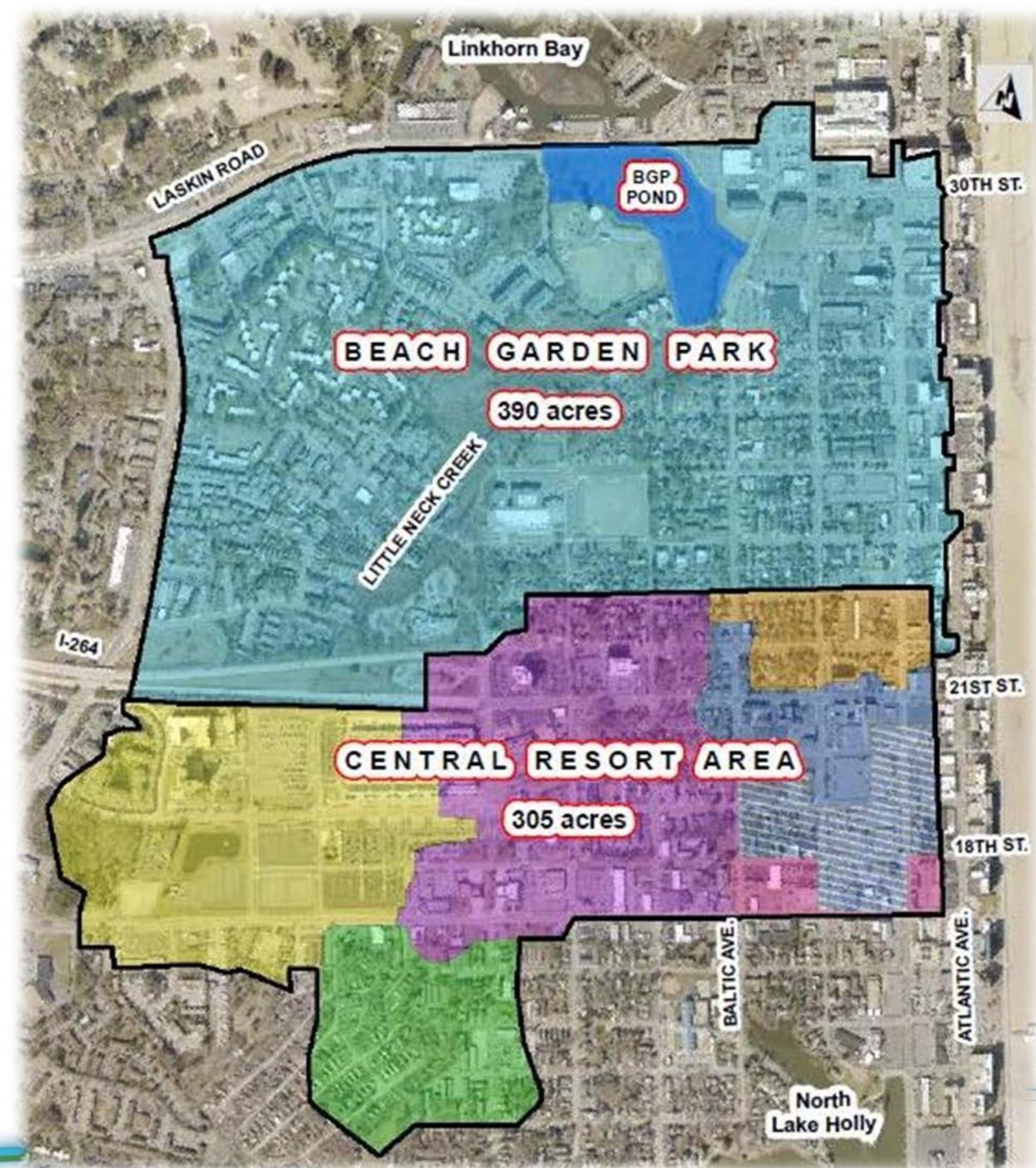
# Solutions...

- In 2013 a Master Drainage Plan was developed
  - Evaluate the adequacy of the existing drainage system
  - Develop alternatives to collect and convey stormwater
  - Develop a phased approach of the recommended alternatives
- 6 alternatives were developed
  - 2 alternatives were considered not feasible
  - Remaining 4 alternatives were further evaluated and presented to City Council in June 2015



# Solutions...

- After further evaluation and modeling of the 4 alternatives
  - The limits of the project were expanded to include the Beach Garden Park Drainage Area
  - Offshore ocean outfall alternative is chosen as the ultimate solution to flooding at a cost of approximately \$113M
  - Interim projects were identified to improve drainage that are compatible with the ultimate solution



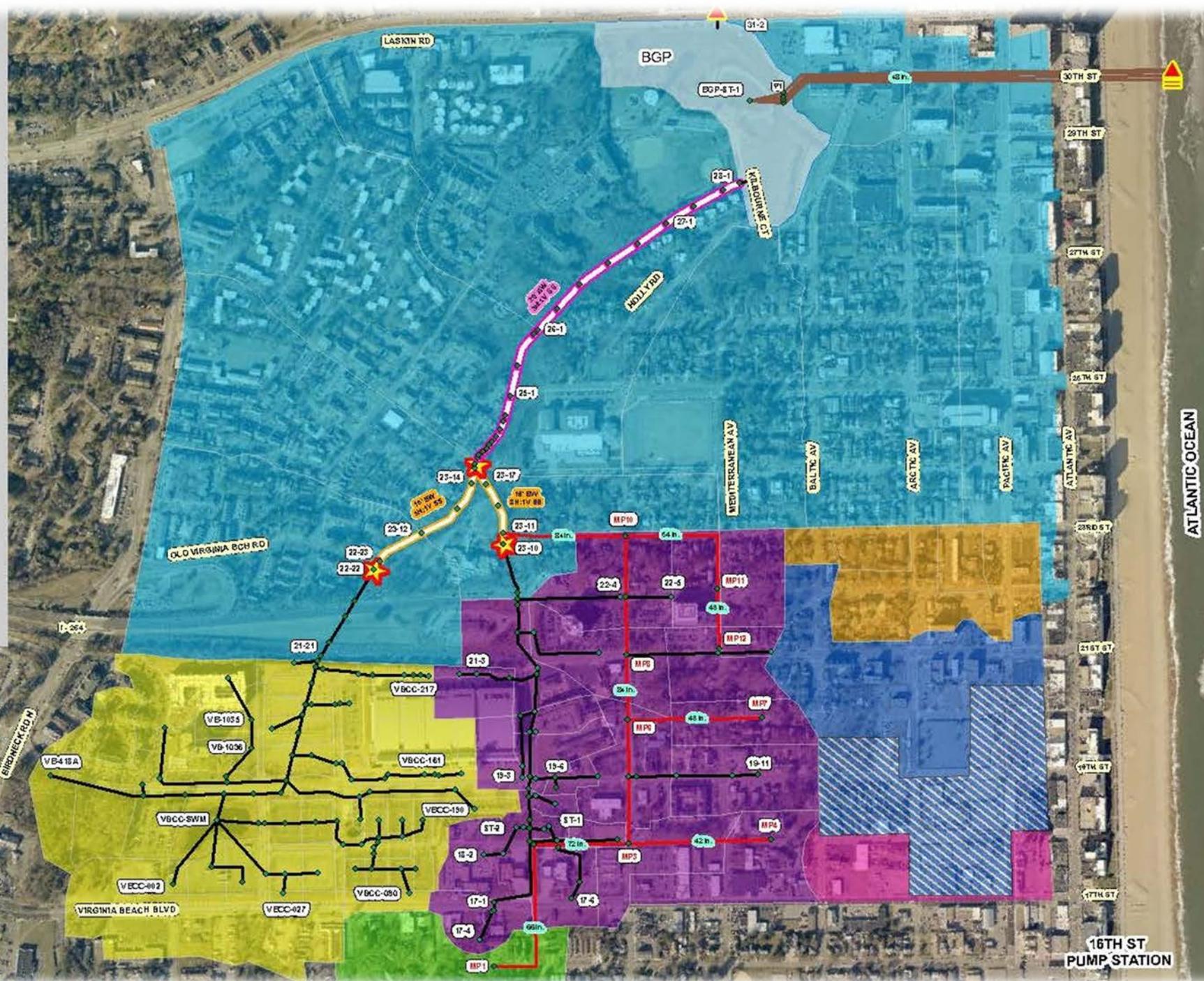
# Legend

-  Existing System
-  New Storm Sewer
-  Outfall Force Main (48 in. Diameter)
-  Channel Dredging (28-ft Bottom Width)
-  Channel Dredging (16-ft Bottom Width)
-  Outfalls
-  Culvert Improvements

## Watersheds

-  Subcatchments
-  16th St. Pump Station
-  2nd Precinct
-  BGP
-  Dome
-  Dome to BGP
-  to North Lake Holly
-  VBCC

Note: Flooding occurred at 7 nodes between a negligible volume. Therefore, no flooding is depicted on the map.



# Solutions...

- Interim projects
  - Analysis underway to evaluate a potential stormwater management pond at the Visitor Center
  - Redirect approximately 25 acres of drainage flow area from intersection of 21<sup>st</sup> Street and Baltic Avenue to 16<sup>th</sup> Street pump station – Estimated cost is \$15M
  - Replace 42" pipe under 24<sup>th</sup> Street with a large box culvert or bridge – Estimated cost is \$6M



# Summary...

- Central Resort District Drainage Improvements project is the only flood control project that did not receive funding
- The Resort Area has been identified as being extremely vulnerable to Sea Level Rise
- The City has made a major investment in this area
- Interim projects can be designed and constructed to improve drainage that are compatible with the ultimate solution
- Recommend start design on Phase I – Redirect SW flow from 21<sup>st</sup> Street and Baltic Avenue to 16<sup>th</sup> Street pump station and replace 42” pipe located under 24<sup>th</sup> Street with a large box culvert or bridge

OPEN

FOR

DISCUSSION

