Development in Flood Prone Areas

Katie Lelis, GISP
Climate Change Task Force Meeting
August 19, 2019
Surrounding Stranahan House

- Las Olas Grand
- Stranahan House
- Icon Las Olas
- Riverside Hotel

Photo credit: Dangelo Realty
2017 Documented Flooding

Predicted Tide (3.1 ft navd)
2017 Documented Flooding

Actual Tide (4.3 ft navd)
2017 Documented Flooding

Actual Tide (4.3 ft navd) + Seawalls
2017 Documented Flooding

Actual Tide (4.3 ft navd) + Seawalls <= 4.3 ft
2017 Documented Flooding

Actual Tide (4.3 ft navd) + Seawalls <= 4.3 ft
2017 Documented Flooding

10 years of completed construction projects

Actual Tide (4.3 ft navd) + Seawalls <= 4.3 ft
YES

We are developing in flood prone areas
In the news...

3 more downtown towers approved in Fort Lauderdale
Mixed-use project would add nearly 800 apartments, 300 hotel rooms
By Neki Mohan - Anchor/Reporter, Tim Swift - Local10.com Digital Editor
Posted: 5:18 PM September 25, 2018
Updated: 9:24 PM September 25, 2018

"What good does it do if you continue to grow if you don't have clean water, can't flush a toilet, if you have traffic concerns?" he said.

Hollywood mostly unaffected by king tides; flap gates alleviate flooding • Hollywood Gazette | Hollywood Gazette

A city without water: Fort Lauderdale works to restore water service for 220,000 people
John Bacon, USA TODAY
Published 1:45 p.m. ET July 18, 2019 | Updated 9:37 p.m. ET July 18, 2019
2017 Documented Flooding

King Tide
2017 Documented Flooding

King Tide
Rainfall
2017 Documented Flooding

King Tide
Rainfall
Irma Surge
Number of Projects

Countywide Spatial Trends 2008-2018
Number of Projects
New Construction (42%) vs Renovation / Addition
Countywide Spatial Trends 2008-2018

Number of Projects
Countywide Spatial Trends 2008-2018

Number of Projects
Development Density
Countywide Spatial Trends 2008-2018

Number of Projects

Development Density
Fort Lauderdale spends $12 million trucking sewage

Groundwater must be removed for the installation of the new Las Olas Force Main

The visible water on roadways, swales and parking lots is NOT wastewater
Countywide Spatial Trends 2008-2018

Number of Projects

Development Density

How Much Sewage?
Countywide Spatial Trends 2008-2018

Number of Projects

Development Density

15 MGD
Countywide
Countywide
• 45.1 Square Miles
• 3014 Completed Projects
• 2.2 MGD Sewage
• 60% - 70% Infiltration
• 3.4 MGD to WWTP
GC East, Stranahan House, Icon
What Else?
Water Demands
Countywide Water Trends

Water / Sewer

Rate 2016 (6K gal)
Countywide Water Trends

Water / Sewer Rate 2016

Daily Water Use (per person)
Water / Sewer
Rate 2016
Water / Sewer Rate 2016
$$$ The Cost of Water $$$

Money Map
Into The Future
Utility Sharing and Alternative Water Supplies
Irrigation Efficiency
Moving Forward to 2040 – Pembroke Pines

Water Demands

Year

Source

City of Pembroke Pines

Water Demand Projections

2.41
Unmet Demands, 2040 (mgd)

0
Reuse Capacity, 2040 (mgd)

C51 Allocation

79
gpd

C51 Allocation, 2040 (mgd)
Moving Forward to 2040 – Hillsboro Beach

Water Demands

- mgd
- Year: 2016, 2020, 2030, 2040

Source

- Town of Hillsboro Beach
- gpd: 327

Water Demand Projections

- Map of Hillsboro Beach

Unmet Demands, 2040 (mgd): 0.15

Reuse Capacity, 2040 (mgd): 0

C51 Allocation

- C51 Allocation, 2040 (mgd): 0