Manzana

# Stormwater Analysis
# Green Cove Springs, FL

Status Update
February 9, 2024

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Manzana City Inc

# Green Cove Springs, FL

Project Objectives:

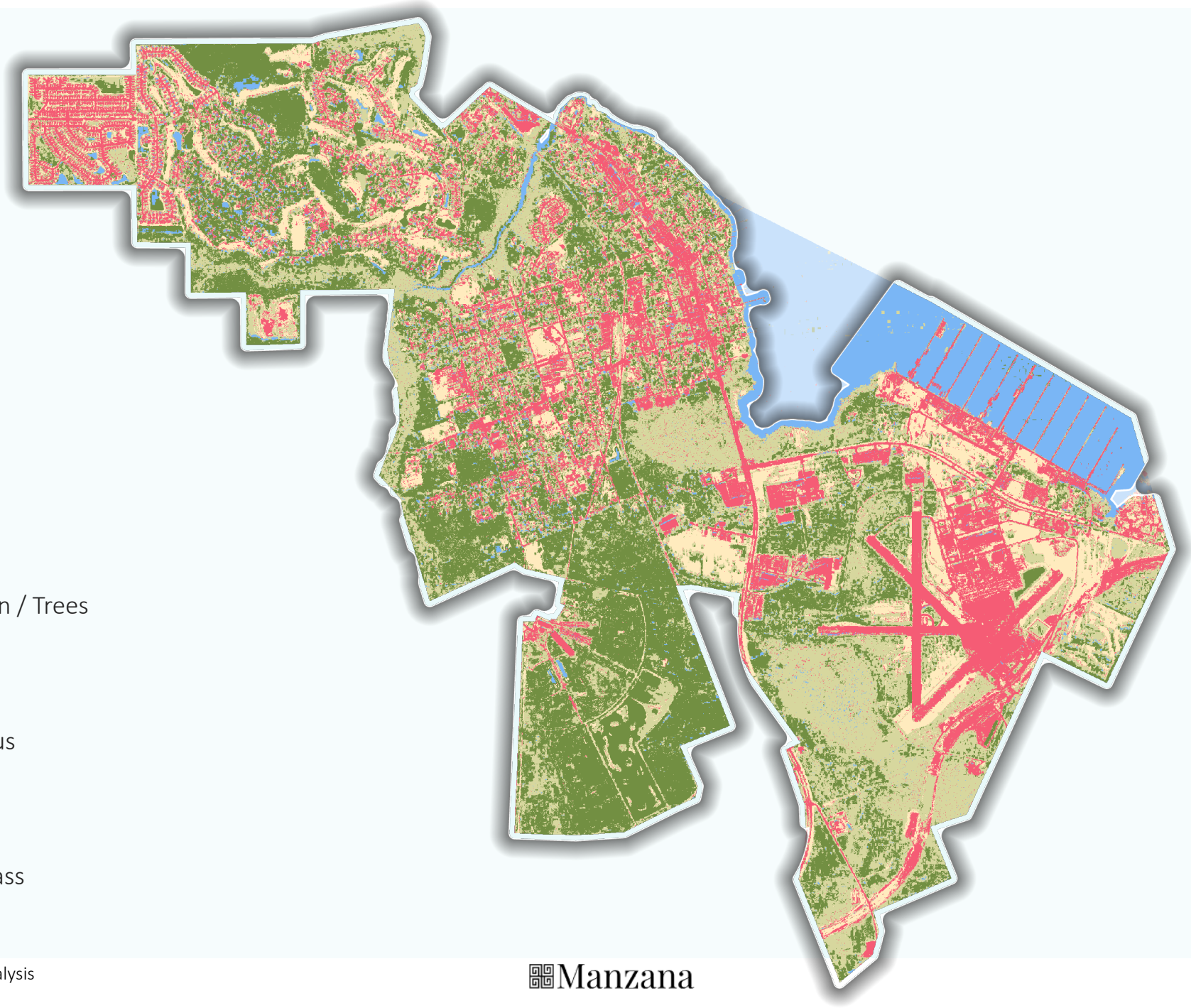
- Complete a high-resolution imperviousness analysis to ensure that per-property stormwater utility fees are fair and equitable.
- Evaluate surface and stormwater flow conditions citywide and within a portion of the city that will be rezoned based on a form-based code (FBC) to evaluate potential locations of additional stormwater storage capacity.
- Evaluate current, zoned, and proposed imperviousness allowances within the FBC Area to evaluate the potential need for and location of additional stormwater storage capacity.

# Impervious Surface Analysis

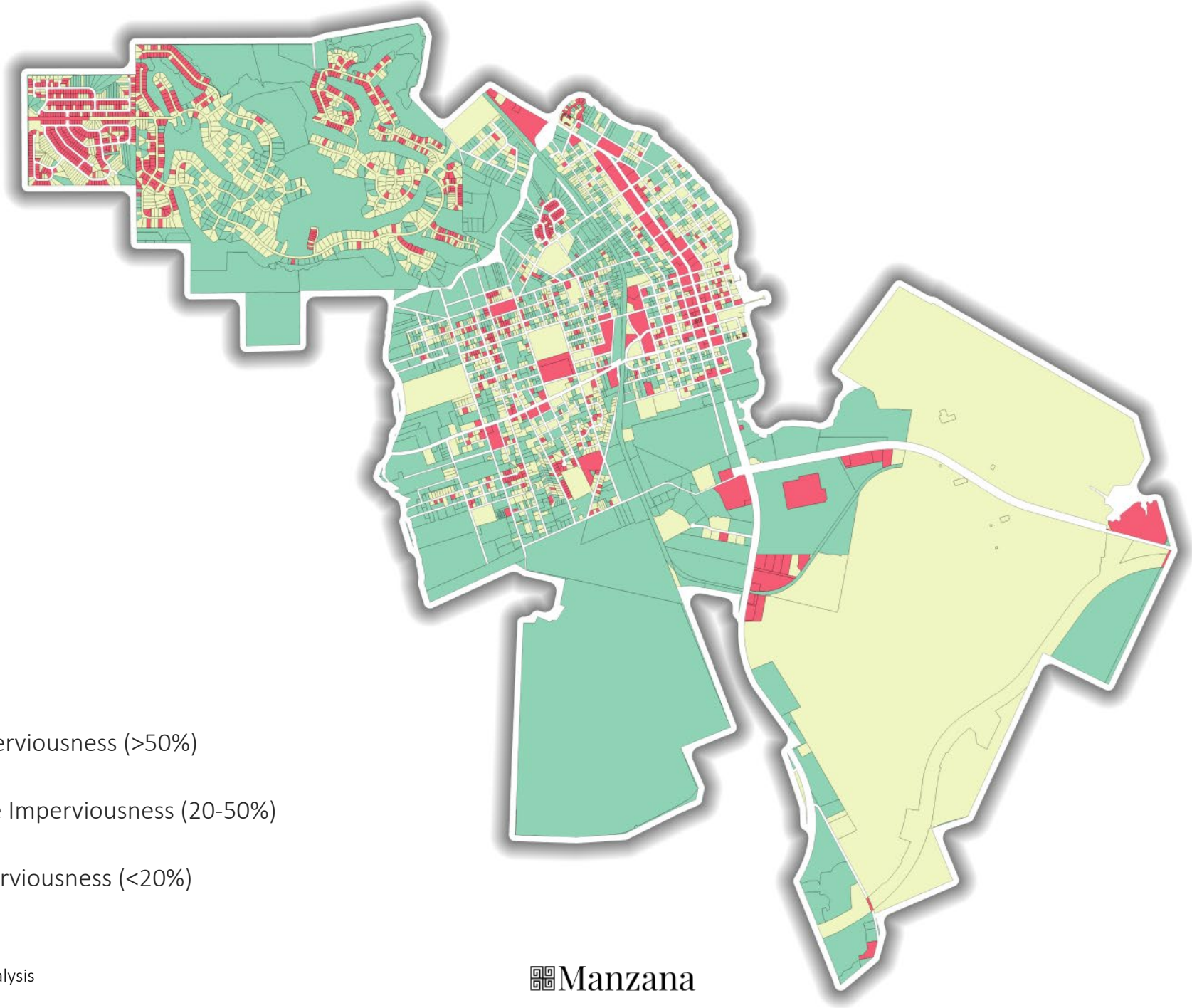
Tasks Completed:

- Calculate high-resolution impervious surface per parcel
- Calculate runoff per parcel in the FBC Area
- Determine impact of revised zoning and new development on imperviousness/runoff volume in the FBC Area

# High-Resolution Imperviousness Analysis



# High-Resolution Imperviousness Analysis



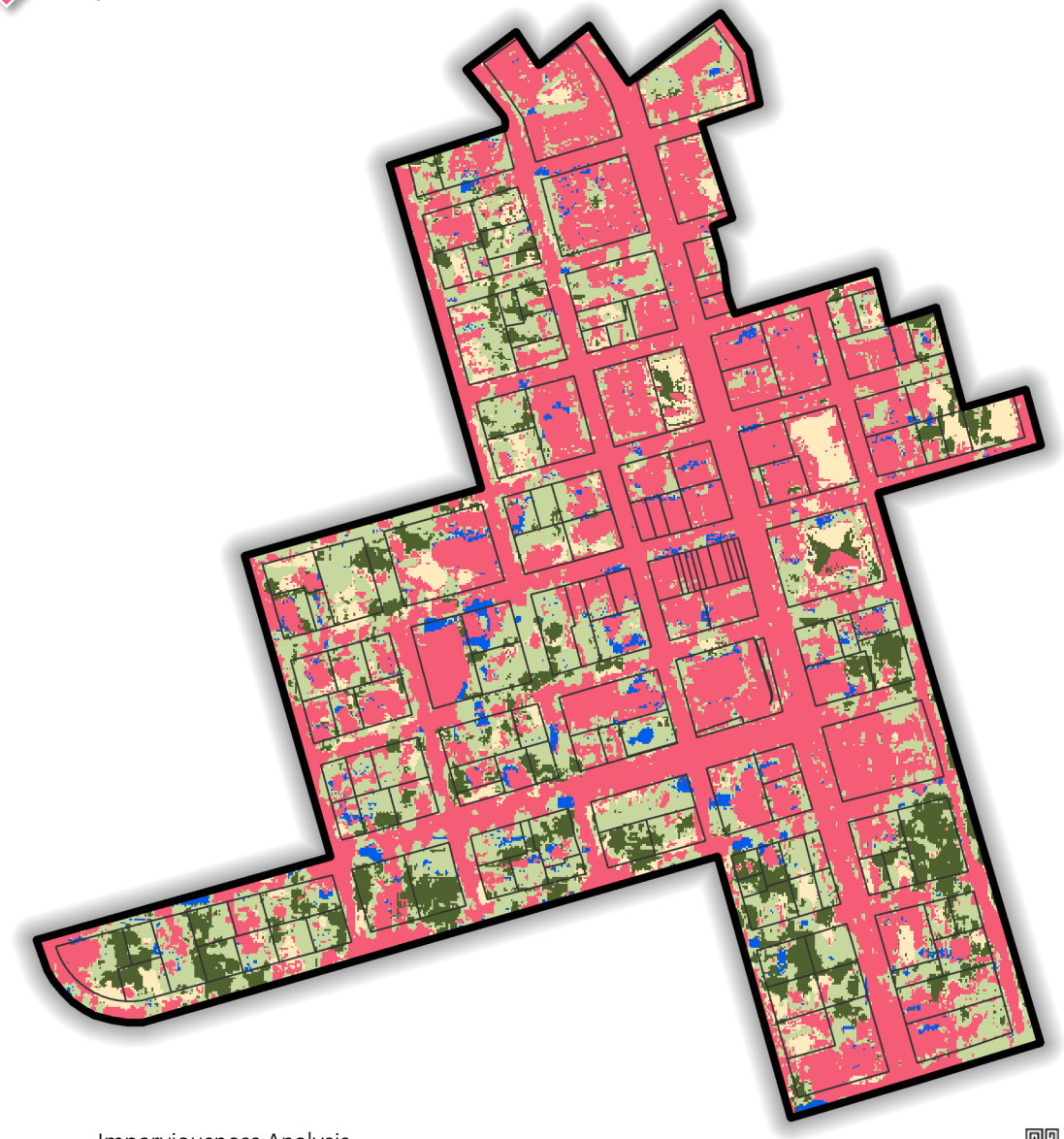
High Imperviousness (>50%)

Moderate Imperviousness (20-50%)

Low Imperviousness (<20%)

# High-Resolution Imperviousness Analysis in Proposed FBC Area

Impervious Surface

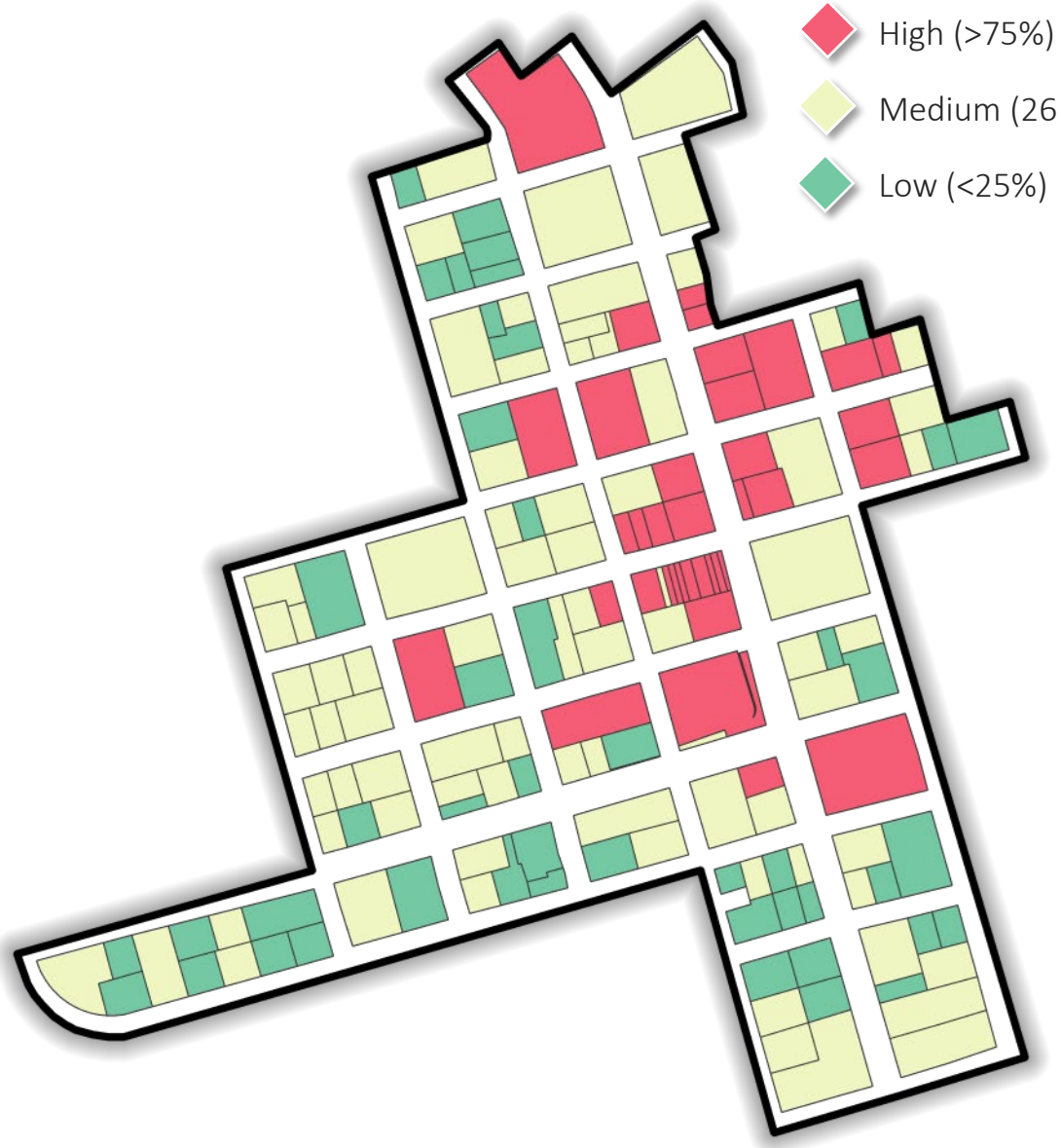


# Actual Imperviousness (per parcel - %)

High (>75%)

Medium (26 – 75%)

Low (<25%)

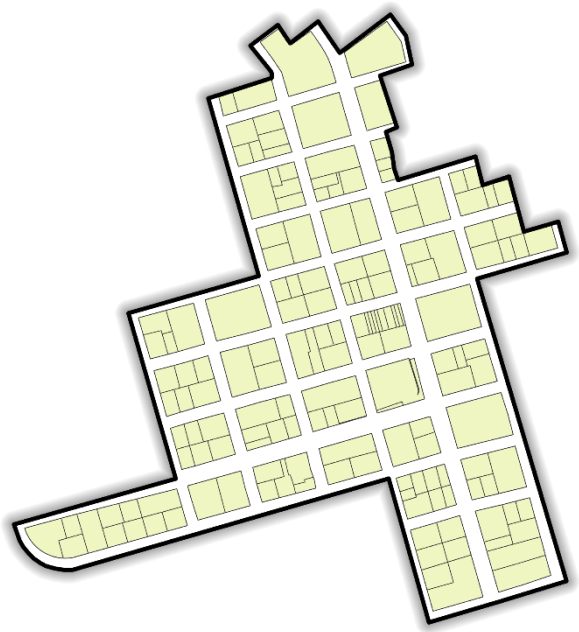


# Change in Imperviousness in the FBC Area

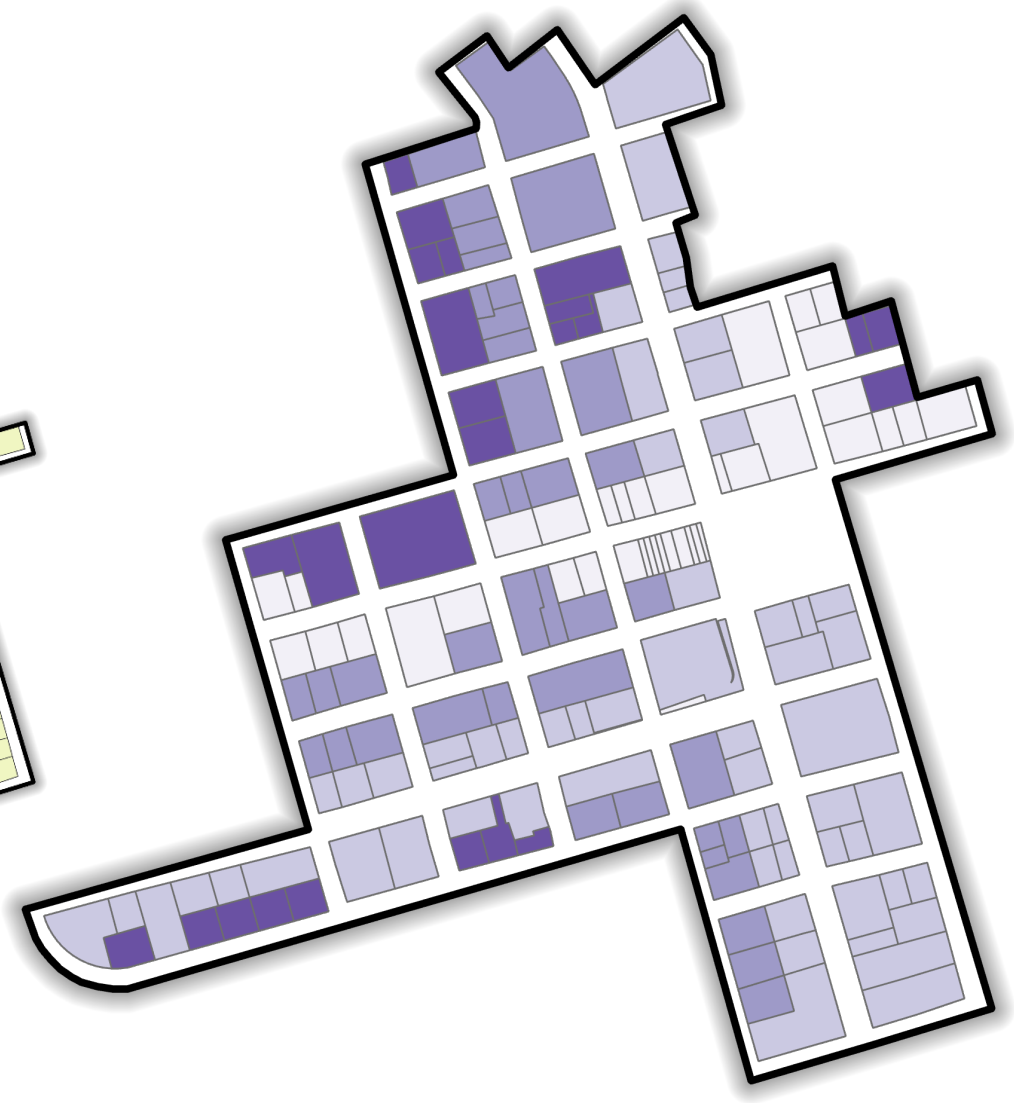
FBC Area imperviousness is higher

Standard zoning imperviousness is higher

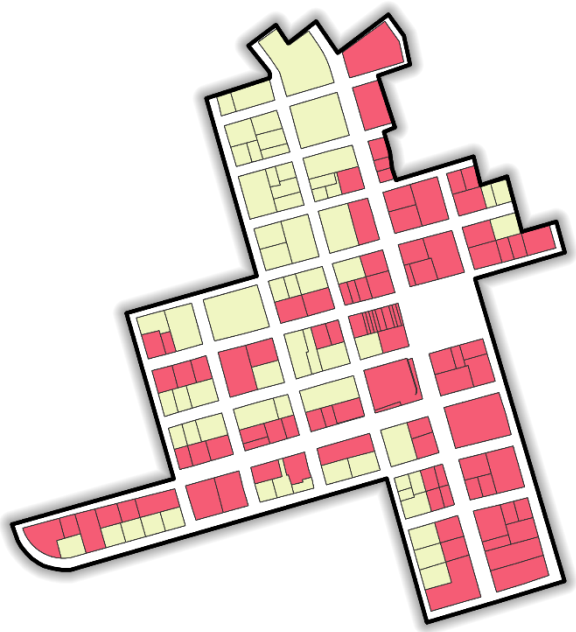
## Standard Zoning



Medium Imperviousness (all zones in the FBC area currently allow 70% imperviousness)

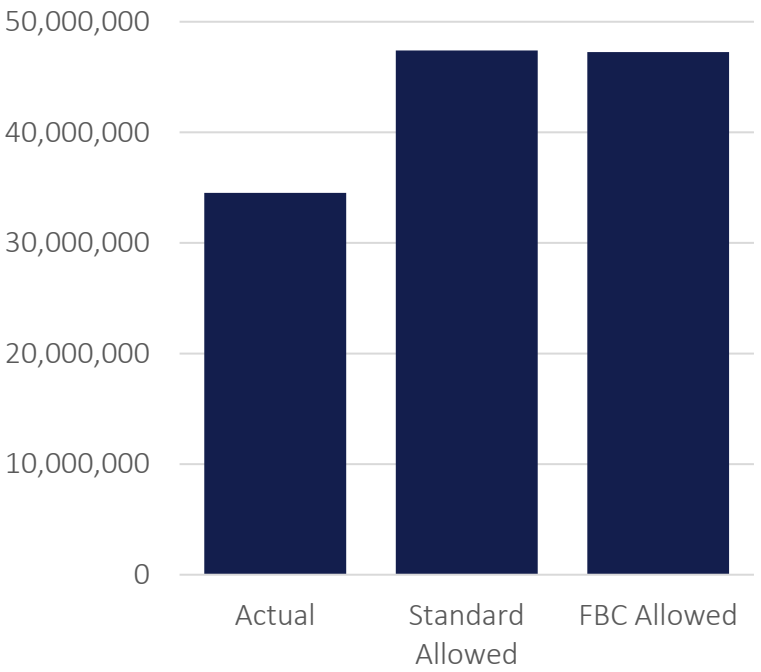


## FBC Zoning



High Imperviousness (>75%)

Medium Imperviousness (26 – 75%)

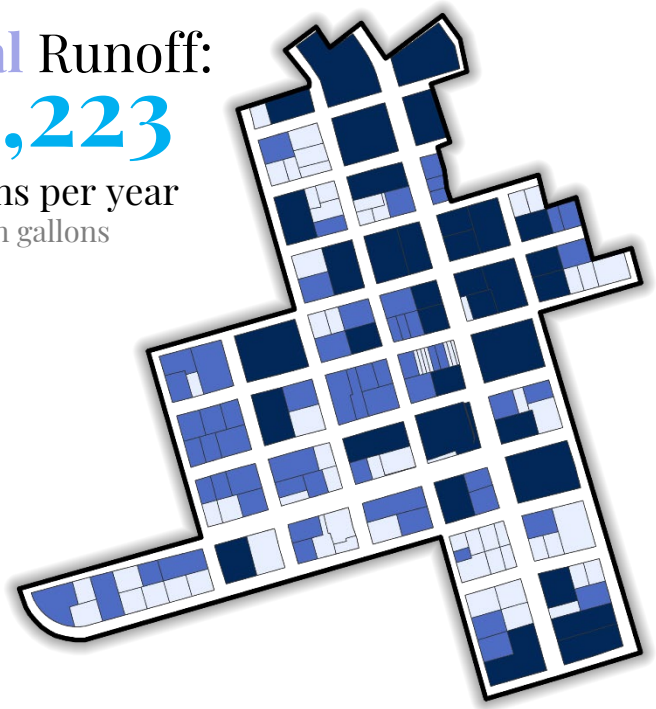


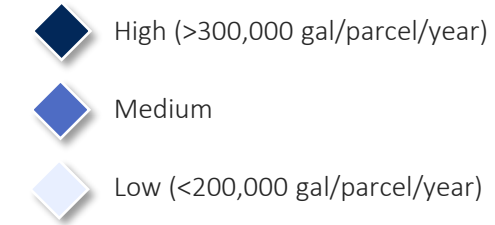

Total **Actual** Runoff:

**34,530,223**

millions of gallons per year

(Range: 0 – 1.7 million gallons per parcel per year)





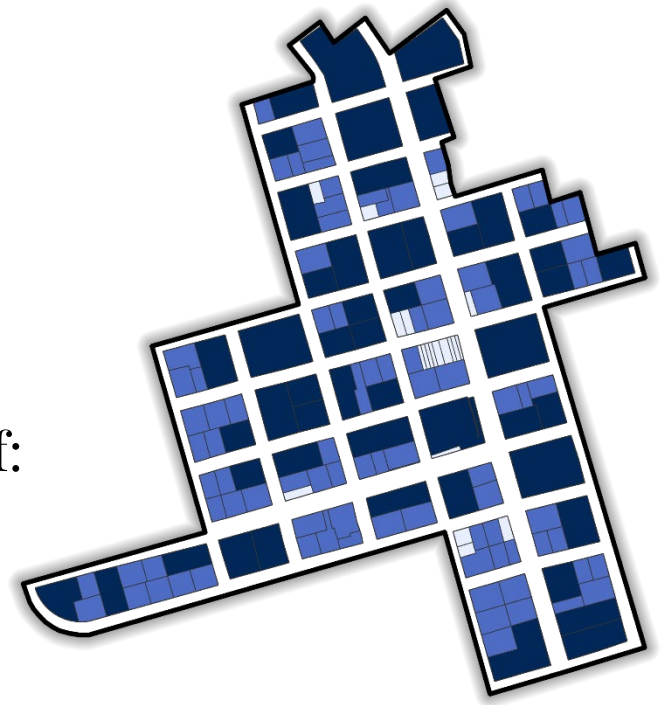

## Standard Zoning

Total **Allowed** Runoff:

**47,413,885**

millions of gallons per year

(Range: 7,000 – 1.4 million gallons per parcel per year)



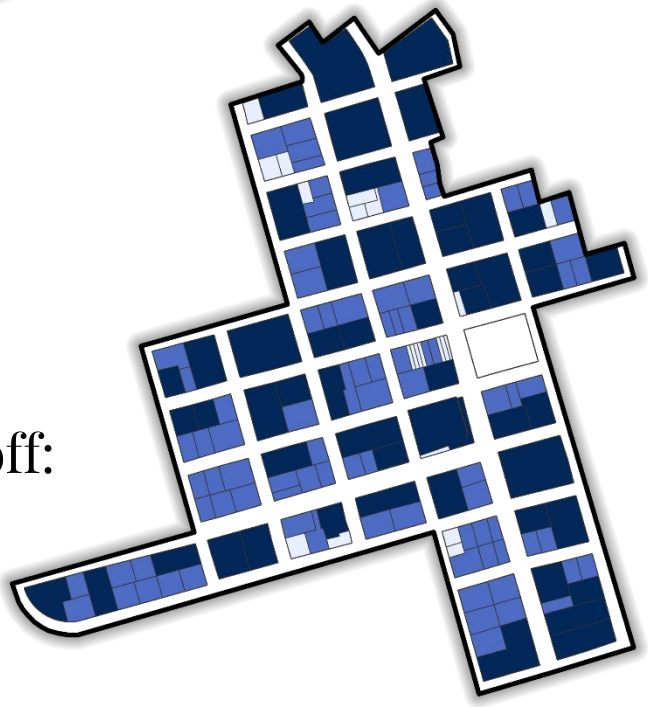
## FBC Zoning

Total **Allowed** Runoff:

**47,263,153**

millions of gallons per year

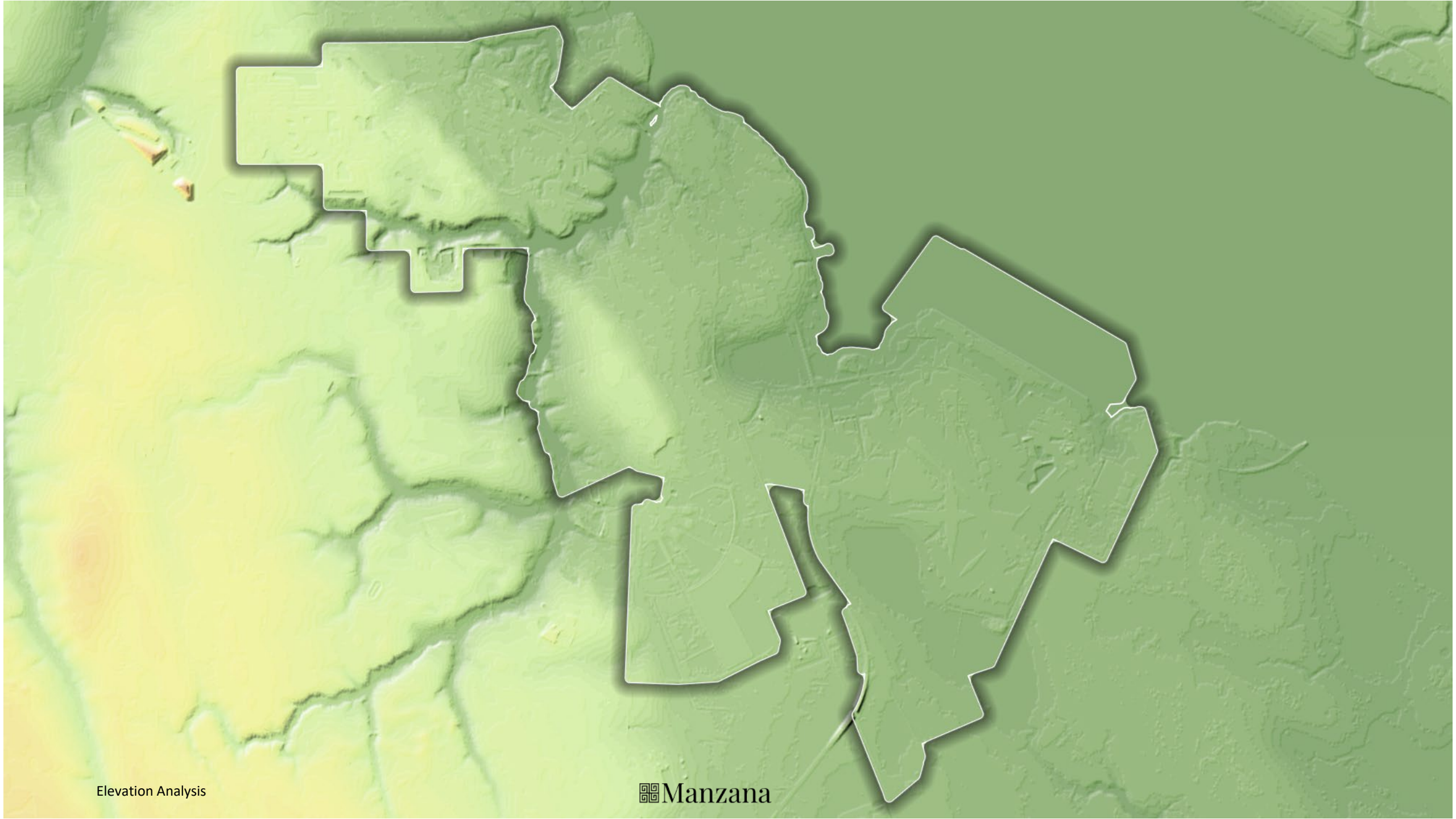
(Range: 8,000 – 1.4 million gallons per parcel per year)



# Elevation Analysis

Tasks Completed:

- Calculated elevation sinks across city
- Calculated flow paths across city
- Completed a more detailed analysis of the FBC Area
- Submitted cost/scope to complete stormwater model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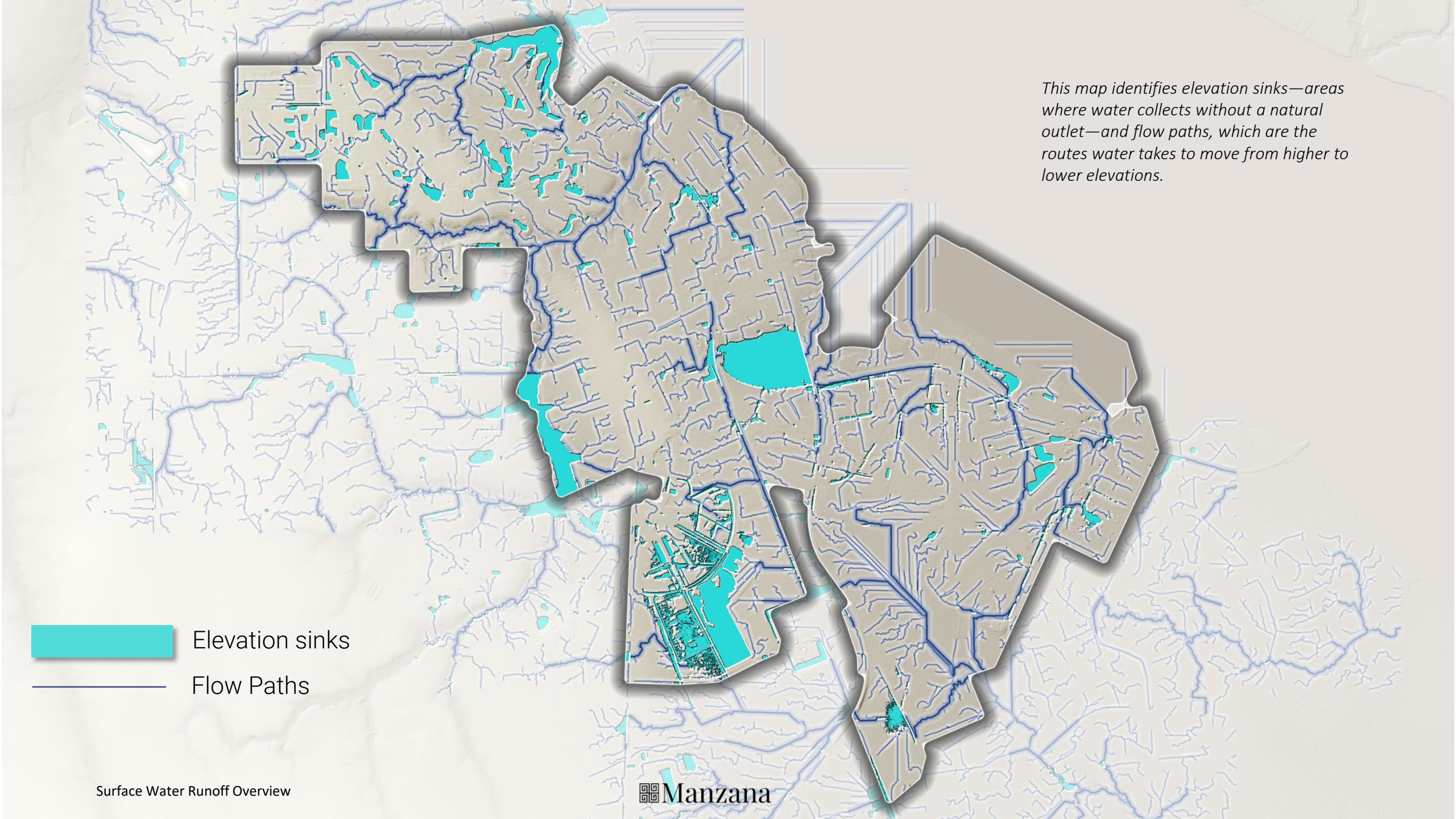


*This map identifies elevation sinks—areas where water collects without a natural outlet—and flow paths, which are the routes water takes to move from higher to lower elevations.*

Surface Water Runoff Overview

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Dry Retention Pond (~745,000-gal capacity)
Elevation sinks
Overland Flow Paths
Stormwater Pipe + Flow Direction
Surface and Stormwater Runoff Overview
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# Manzana

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First Street Foundation, ClimateCheck®, FEMA, and the CVI evaluate general climate factors at census tract, city, or county scale. In the following table, the highest score per climate factor is identified in bold.

## Here's how Green Cove Springs' climate risk rates:

| | FEMA | Climate Vulnerability Index | Risk Factor | Climate Check |
|---|---|---|---|---|
| National Climate Risk | 88.77th percentile | 81st percentile | No Rating | 1 to 95 Range |
| Heat Risk | No Rating | Lowest Vulnerability | Extreme Risk | Extreme |
| Fire Risk | Relatively Moderate | Highest Vulnerability | Moderate Risk | Relatively Low |
| Storm Risk | Relatively Moderate (Hurricanes) | Average Vulnerability | Extreme Risk (Wind) | Very High |
| Flood Risk | Relatively Moderate | Highest Vulnerability | Moderate Risk | Relatively Low |
| Drought Risk | Very Low | Average Vulnerability | No Rating | Relatively Low |