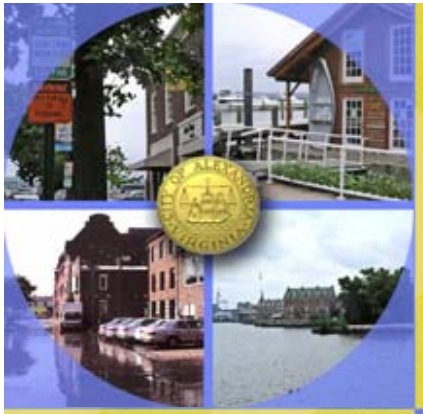
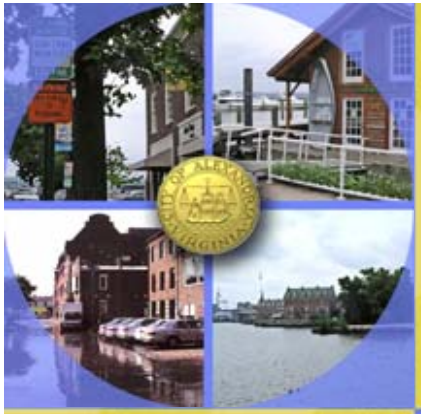
Potomac River Waterfront Flood Mitigation Project

Advisory Group Meeting
October 4, 2006

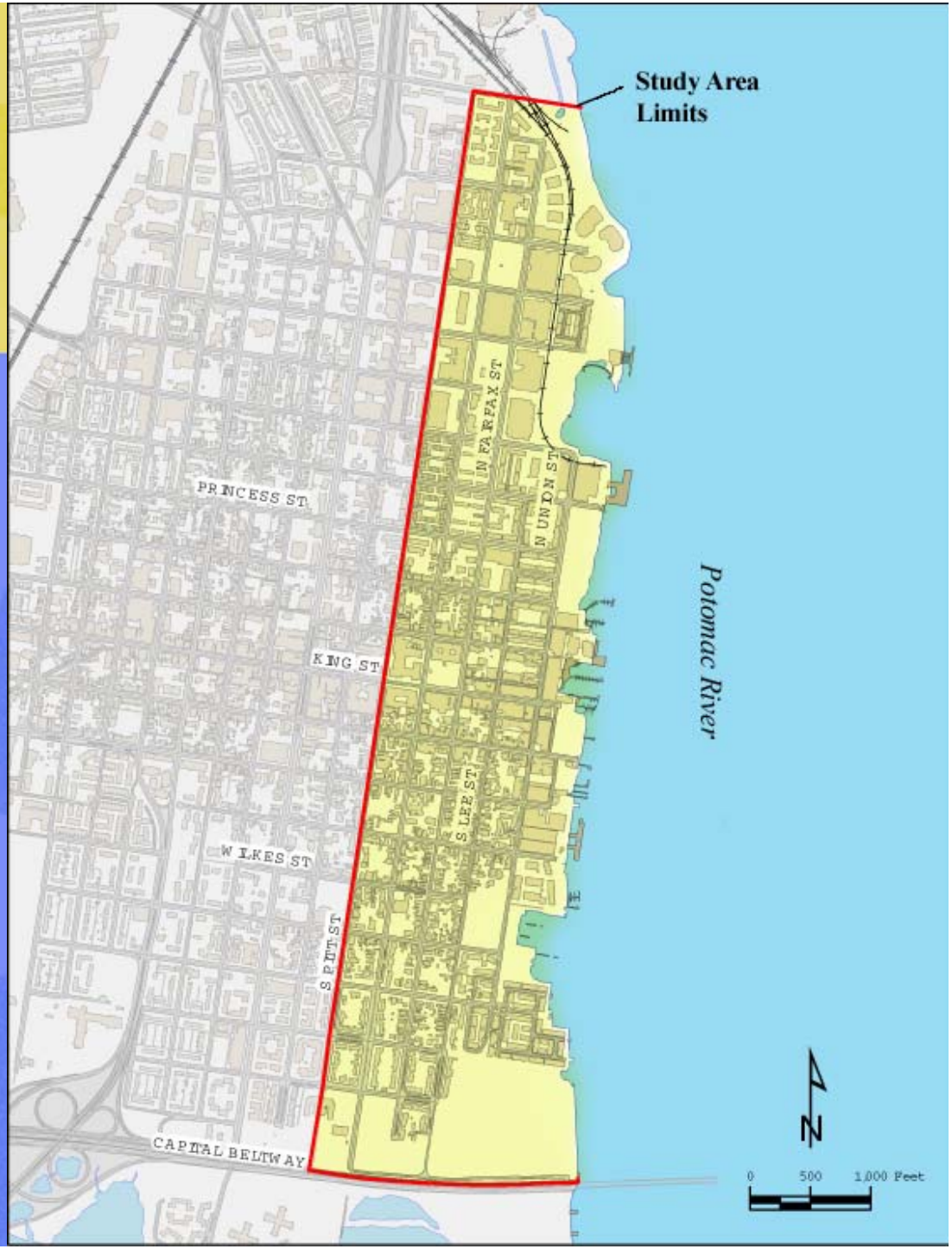


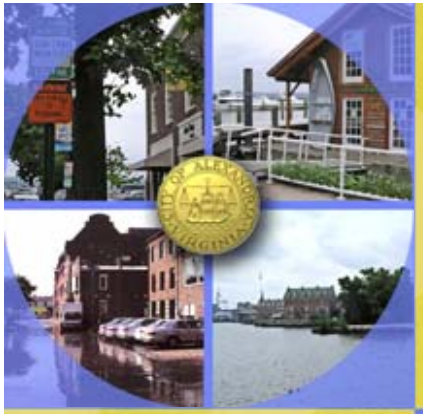
Purpose of the Potomac River Waterfront Flood Mitigation Project:

- **To identify and evaluate flood reduction solutions along the Potomac River.**



Study Area

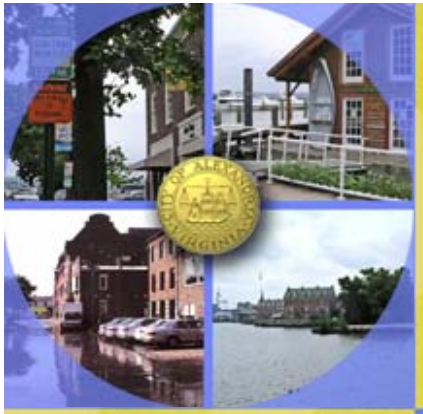

Study Area Limits
Potomac River
N UNION ST
N FAIRFAX ST
S LEE ST
S PITT ST
PRINCESS ST
KING ST
W ILKES ST
CAPITAL BELTWAY
N
0
500
1,000 Feet



Potomac River Waterfront Flood Mitigation Advisory Group

- **Composition of Group**
- **First of Several Meetings**
- **Role: Represent Affected Stakeholders**

Your participation and involvement in this group is key to the successful completion of this project



Overview of Project Tasks

Identify the Problem

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Determine Cause of the Problem

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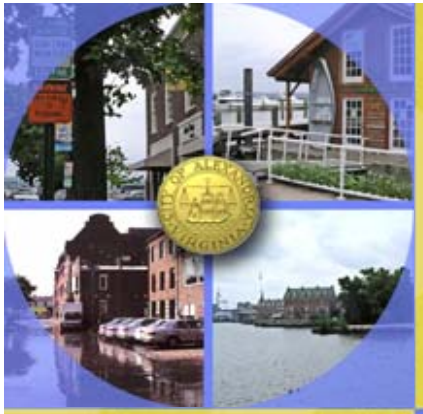
Identify Solutions

↓

Analyze Solutions

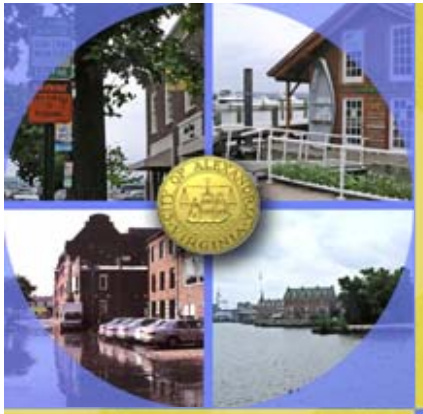
↓

Recommend Best Solutions



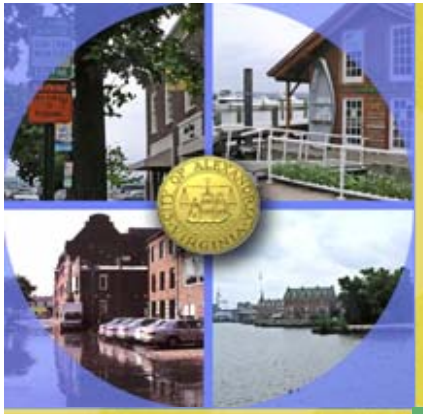
Project Activities – To Date

- **Identified problem areas**
- **Conducted field visits**
- **Collected/reviewed available data (e.g., GIS, reports, survey data)**
- **Compiled historic/cultural resources information**
- **Conducted meetings with City staff**
- **Currently conducting interviews with businesses and residents**

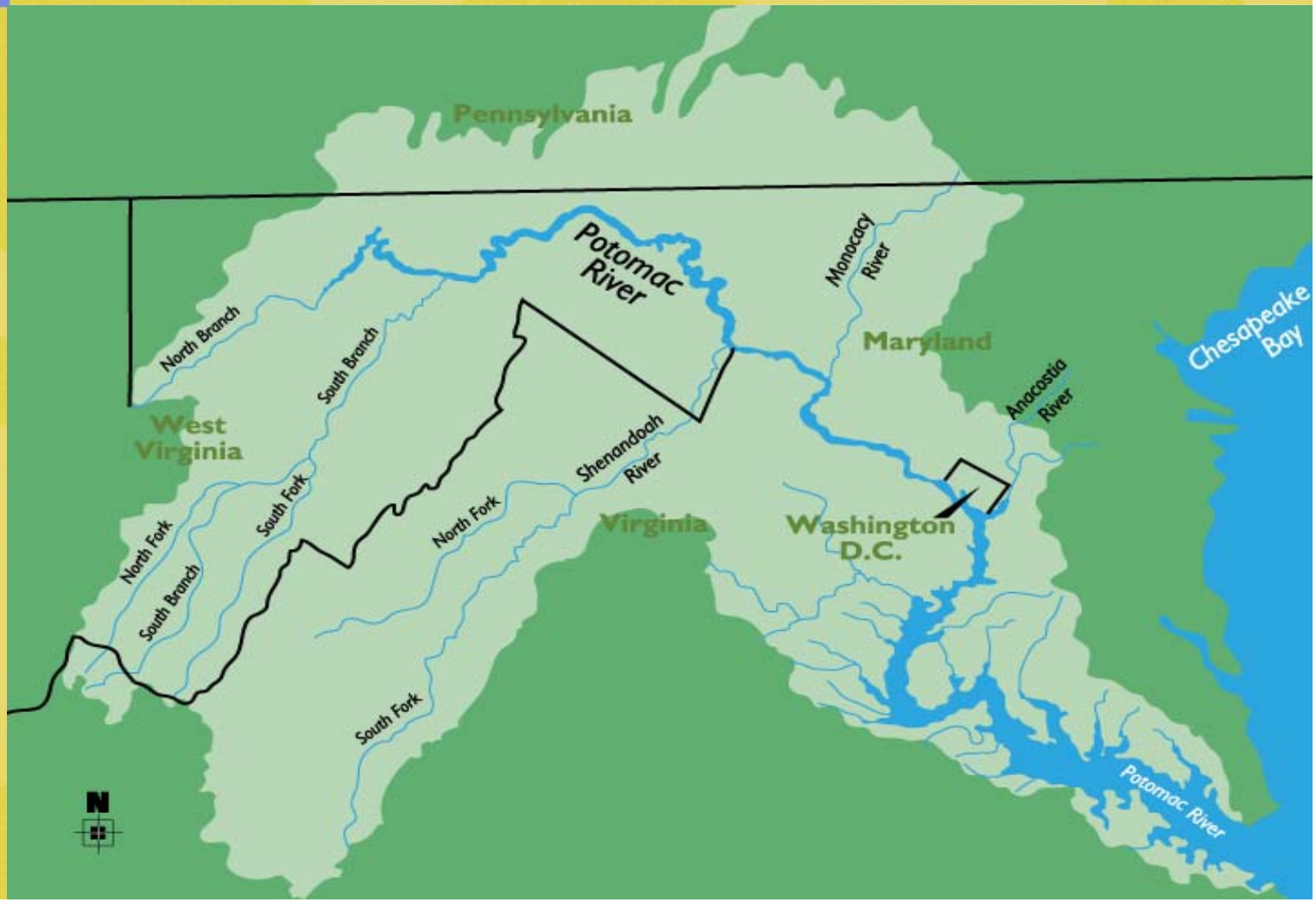


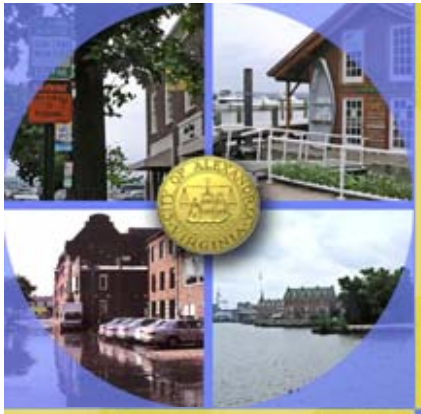
Potomac River Flooding Sources

- **Riverine**
- **Tidal / Coastal**
- **Minor drainage**

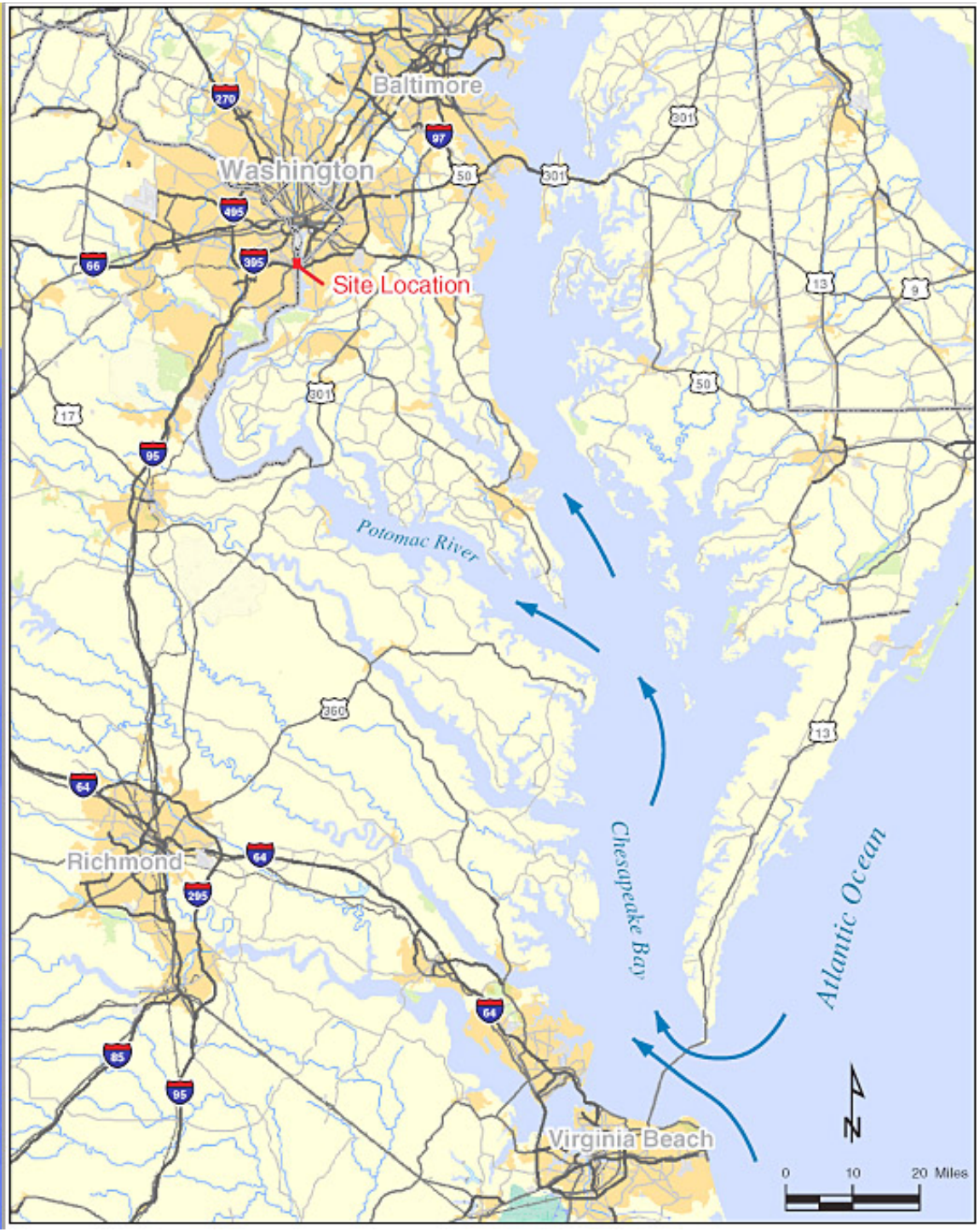


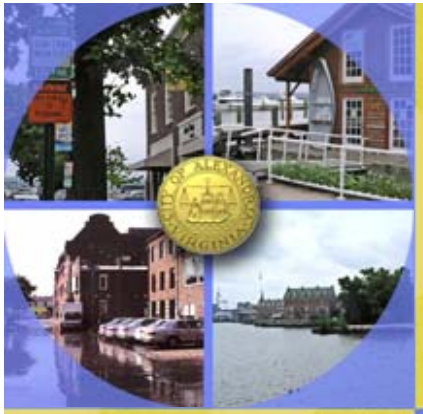
Riverine Flooding – Potomac River Watershed





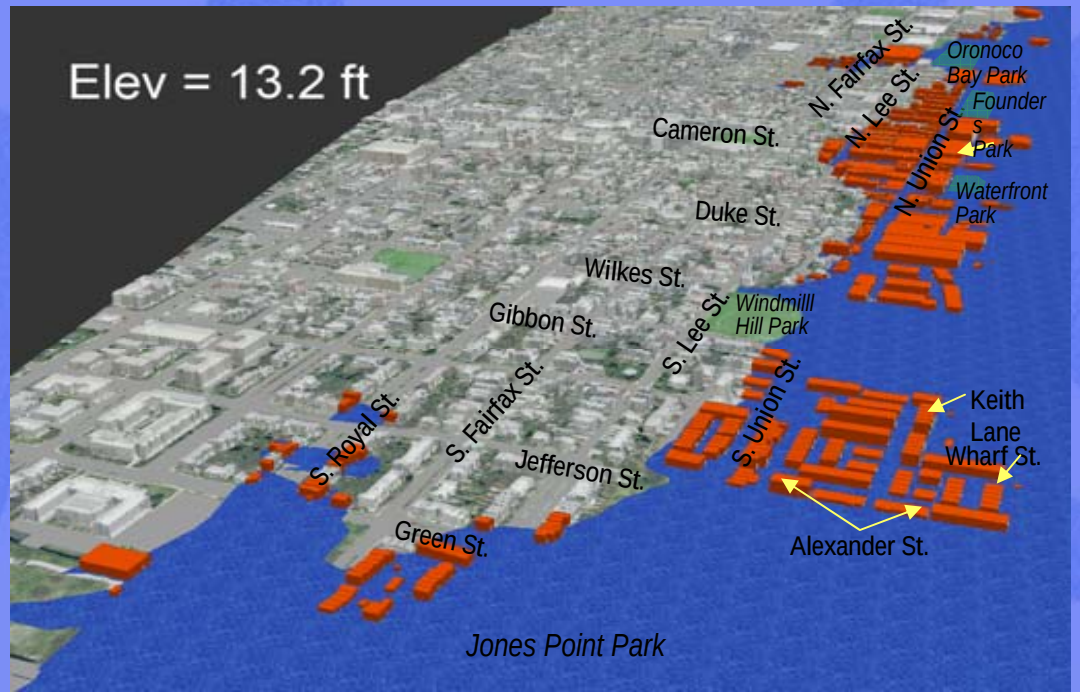
Tidal / Coastal Flooding





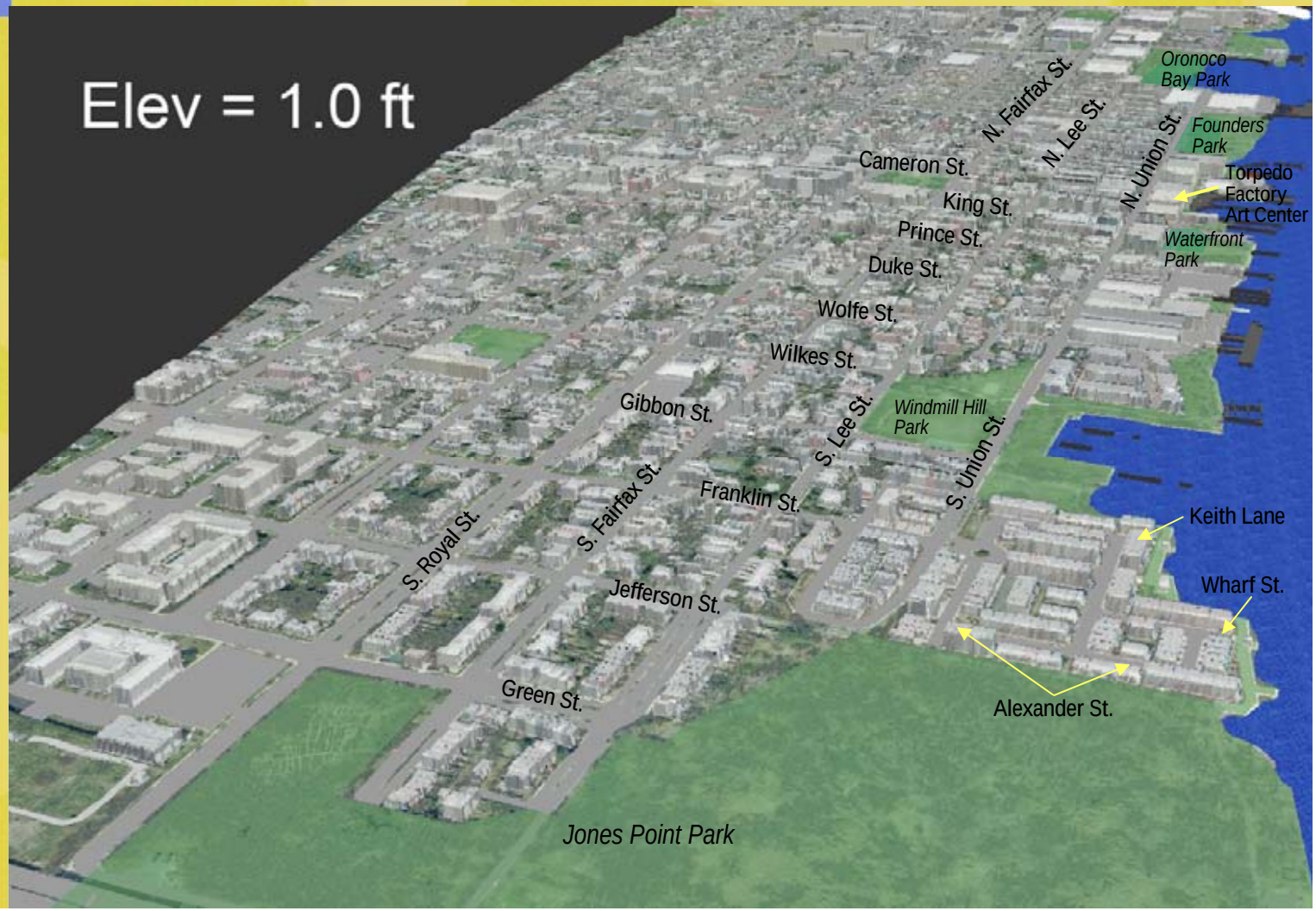
Overview of How Area Floods

- **Based on any flood waters touching any part of the building (lowest adjacent elevation)**



Flooding Animation (Elev. = 0 – 13.2 feet)

Flooding Animation (Elev. = 0 – 13.2 feet)



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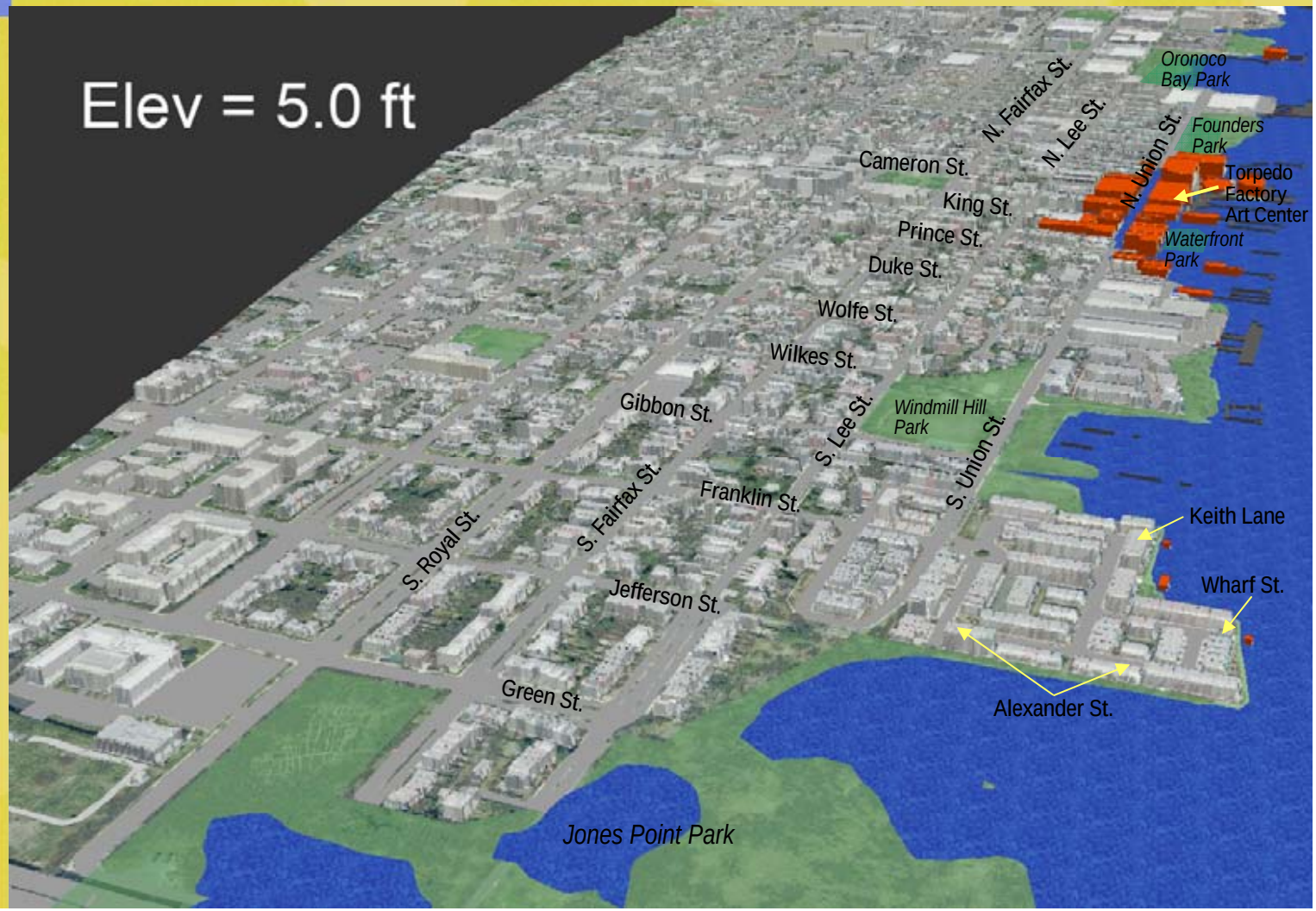

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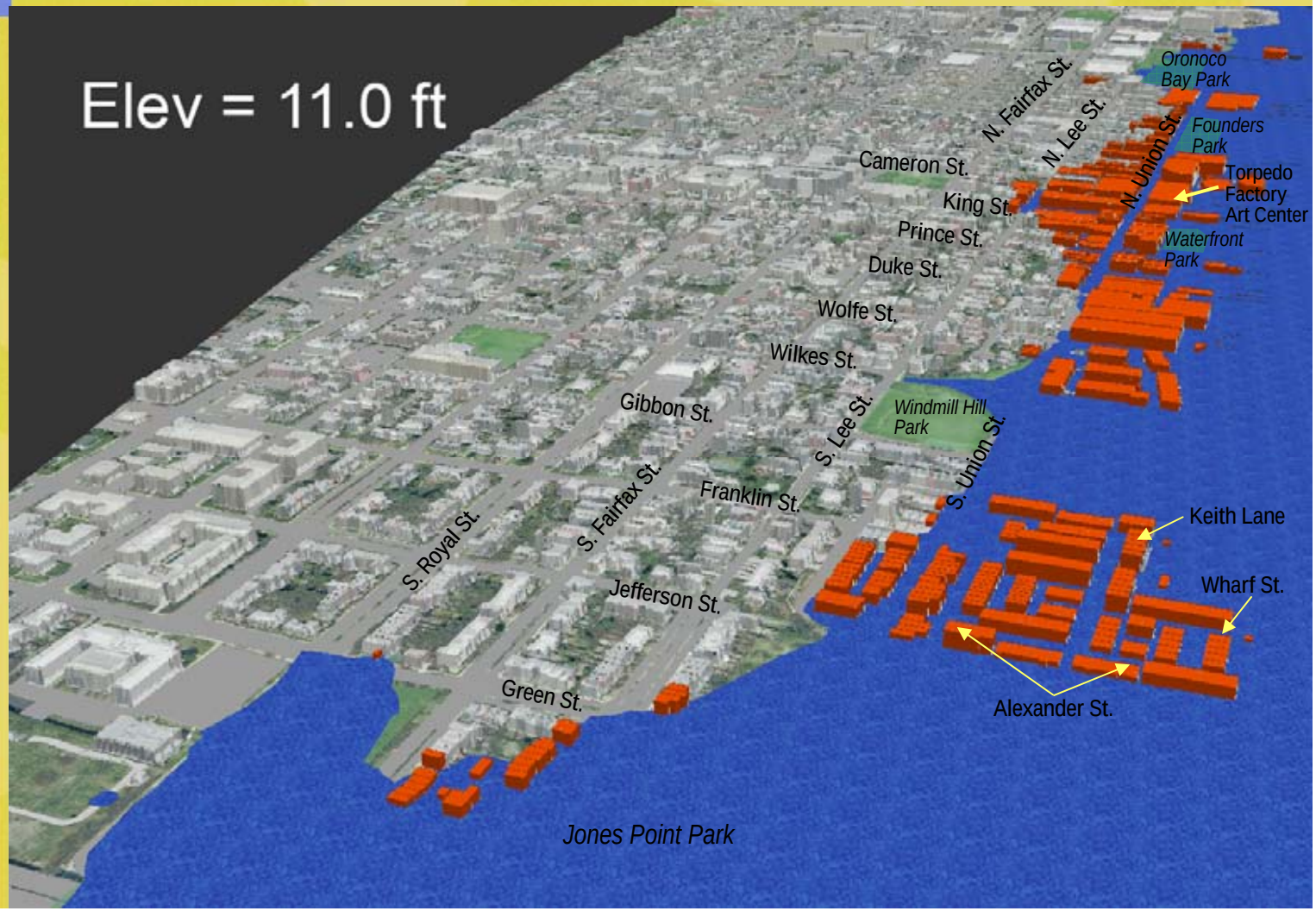

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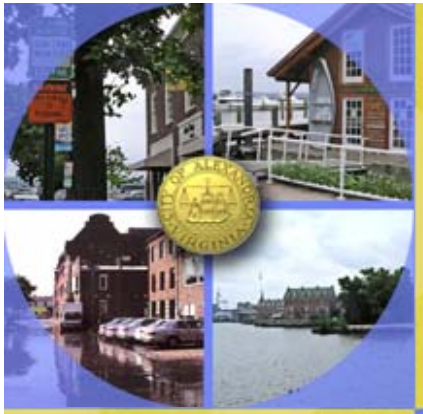
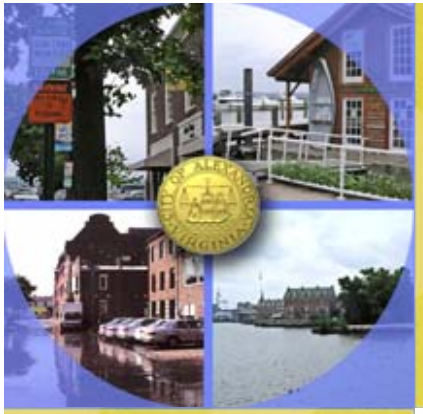
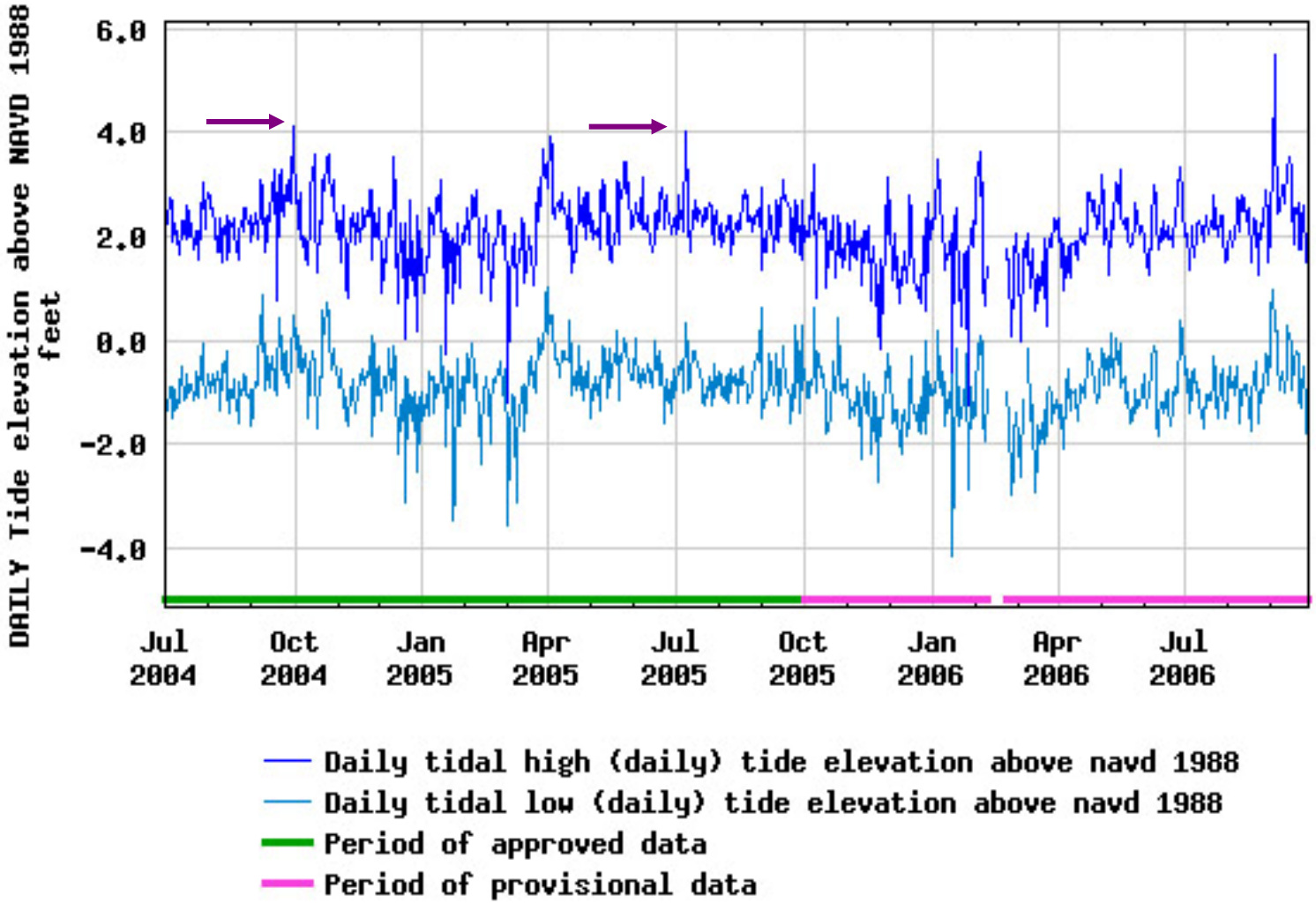


Flood Levels To Be Studied

- **Nuisance**
- **Intermediate**
- **Extreme**



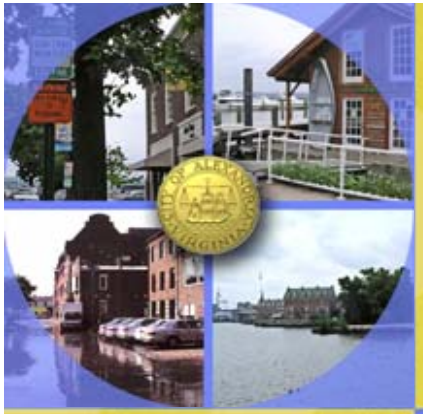
Basis for Nuisance Flood Elevation – 4.0 feet



Example Flooding

June 2006 – 3.3 feet

Nuisance Flooding
4.0 feet
(for reference)



Basis for Flood Study Elevation

- **Intermediate – 8.0 feet***
  - **Based on 1 percent annual chance (i.e., 100-year) riverine elevation predicted for Potomac River**
- **Extreme – 10.2 feet***
  - **Based on 100-year FEMA elevation (tidal)**
  - **FEMA requires 3 feet freeboard to remove protected area from Flood Insurance Maps**

*** NAVD 88**

Example Flooding

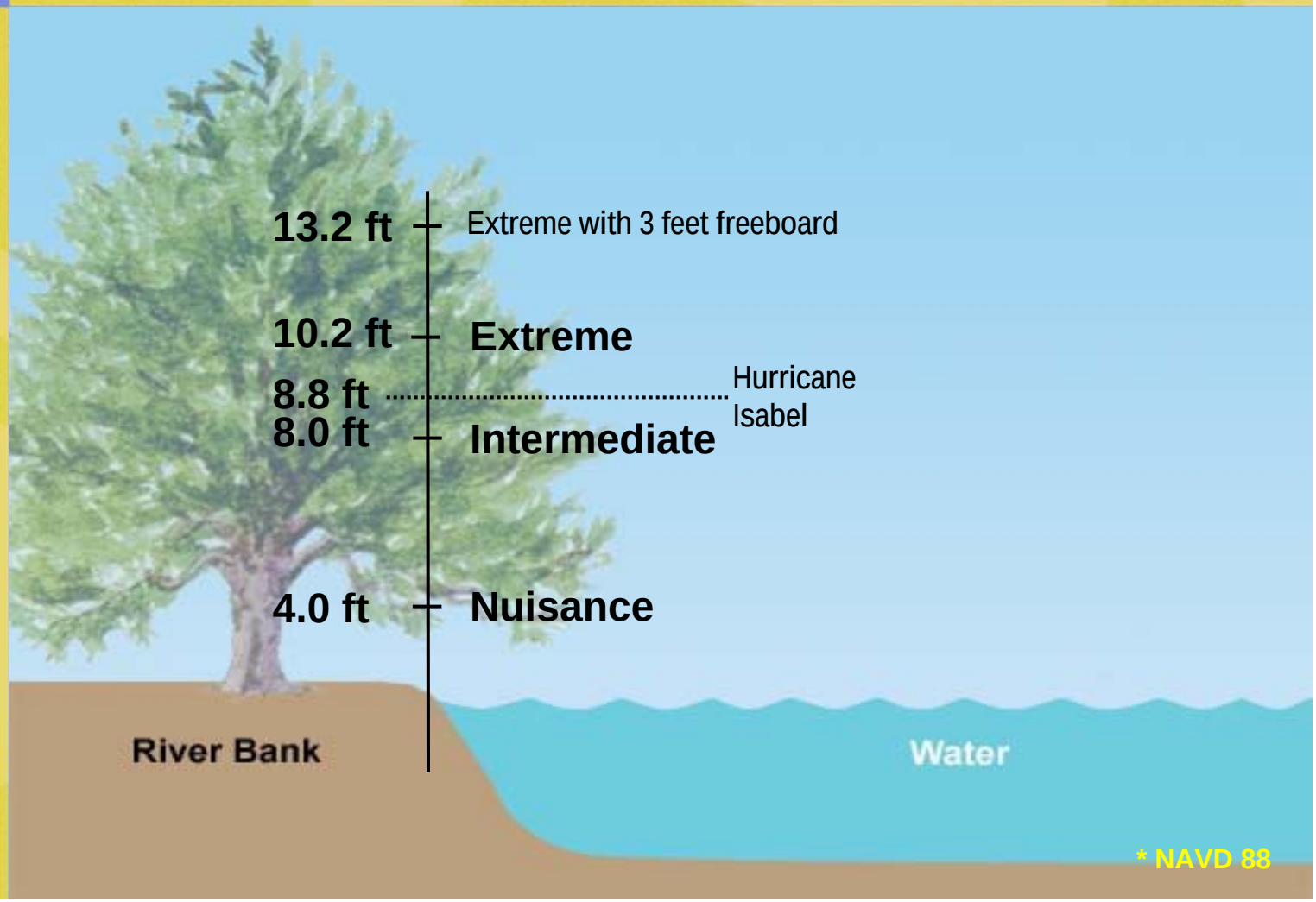
Hurricane Isabel – 8.8 feet

Intermediate
8.0 feet

Extreme
10.2 feet

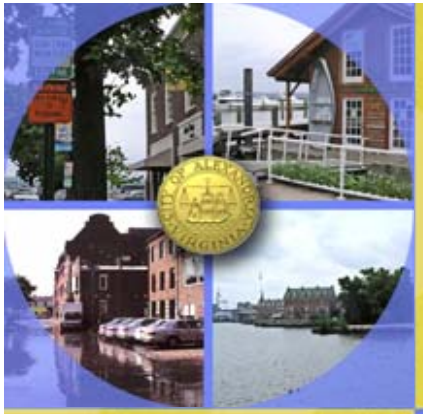
(for reference)

Flood Levels To Be Studied



* NAVD 88

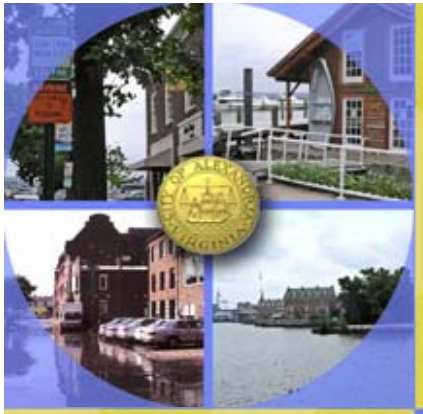
Building Elevation



Studies To Date

- Typically based on contour information for Lowest Adjacent Elevation
- Available survey information
  - City provided
  - Elevation Certificates for Flood Insurance
  - FEMA Letter of Map Amendments
  - Design drawings
- URS Survey (next task)

Nuisance Flooding (Elev. = 4 feet)

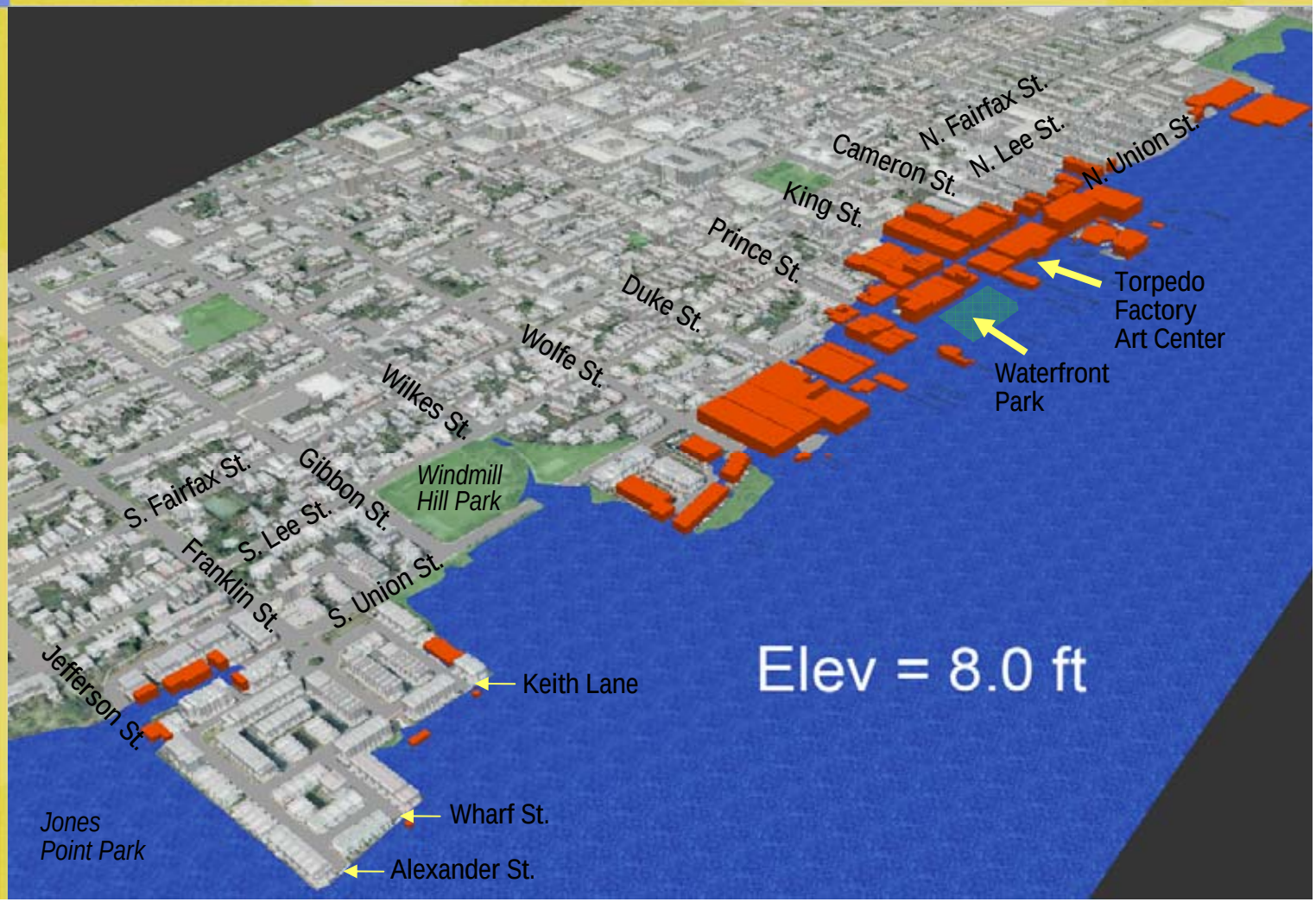


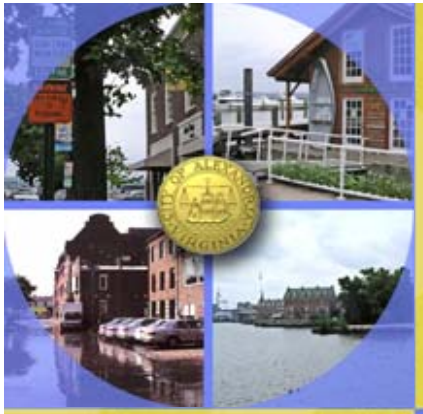
Nuisance Flooding (Elev. = 4 feet)*

- **Less than 50 buildings**
- **Many have lowest point of entry higher than 4 feet**
- **Most commercial**
- **Most located around King Street**
- **Primary issue – disruptions to businesses**

*** based on Lowest Adjacent Elevation**

Intermediate Flooding (Elev. = 8 feet)



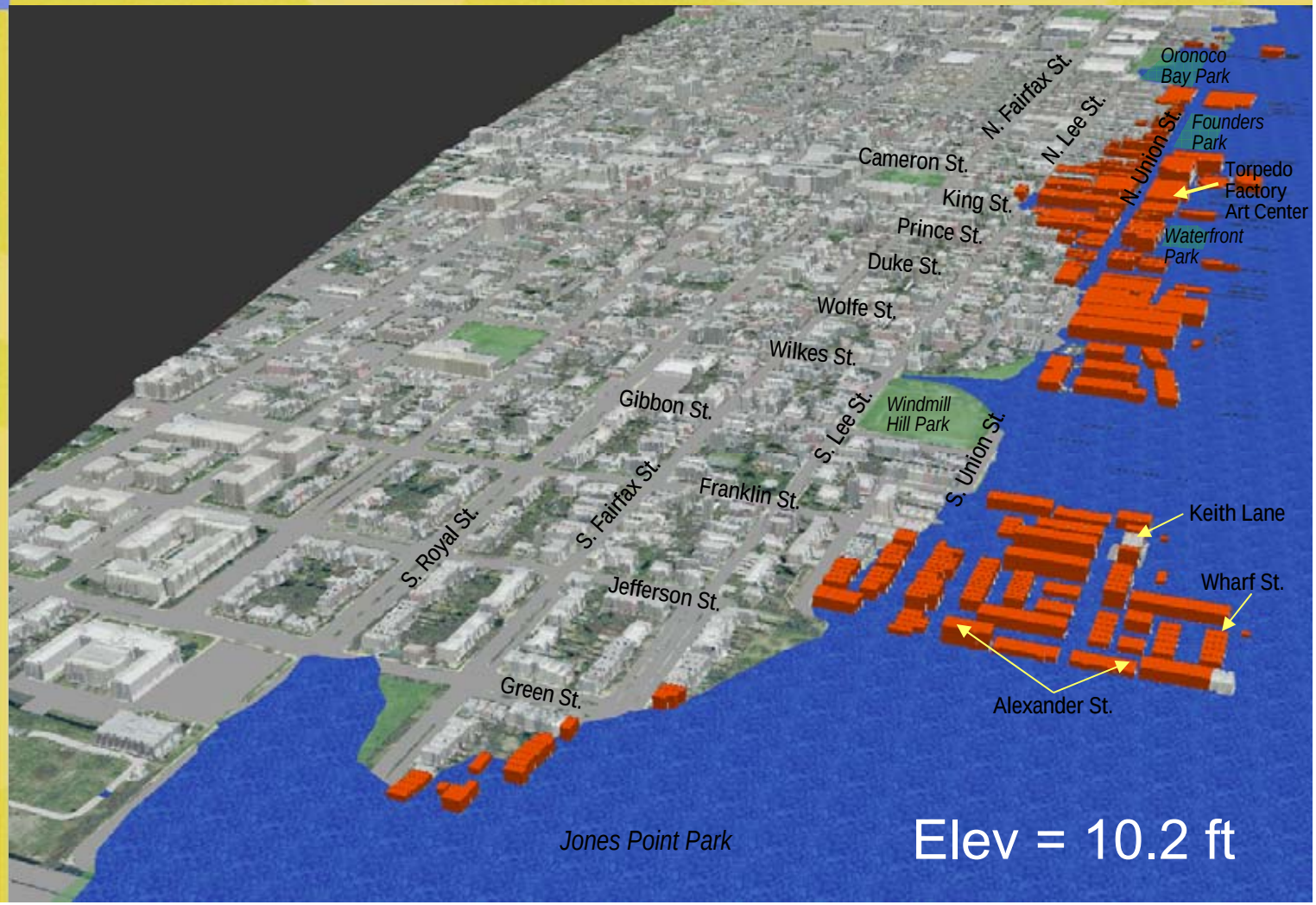


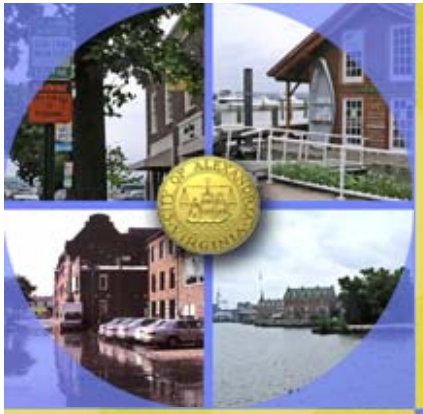
Intermediate Flooding (Elev. = 8 feet)*

- **More than 100 buildings**
- **Approx. half commercial & half residential**
- **Expanded geographical area**

*** based on Lowest Adjacent Elevation**

Extreme Flooding (Elev. = 10.2 feet)

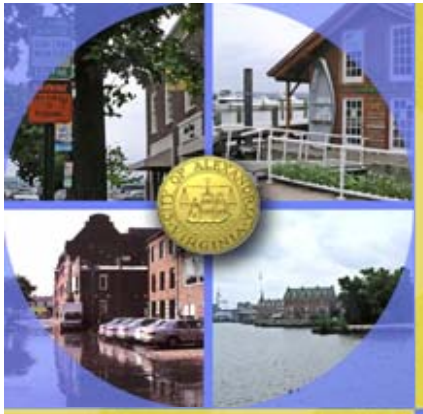




Extreme Flooding (Elev. = 10.2 feet)*

- **More than 300 buildings**
- **Mostly residential**
- **Large geographic area**
- **Primary issue - high depth of flooding**

*** based on Lowest Adjacent Elevation**



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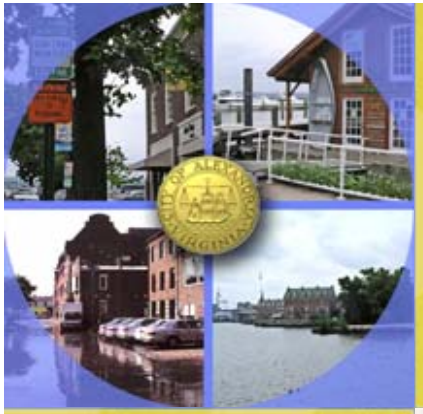
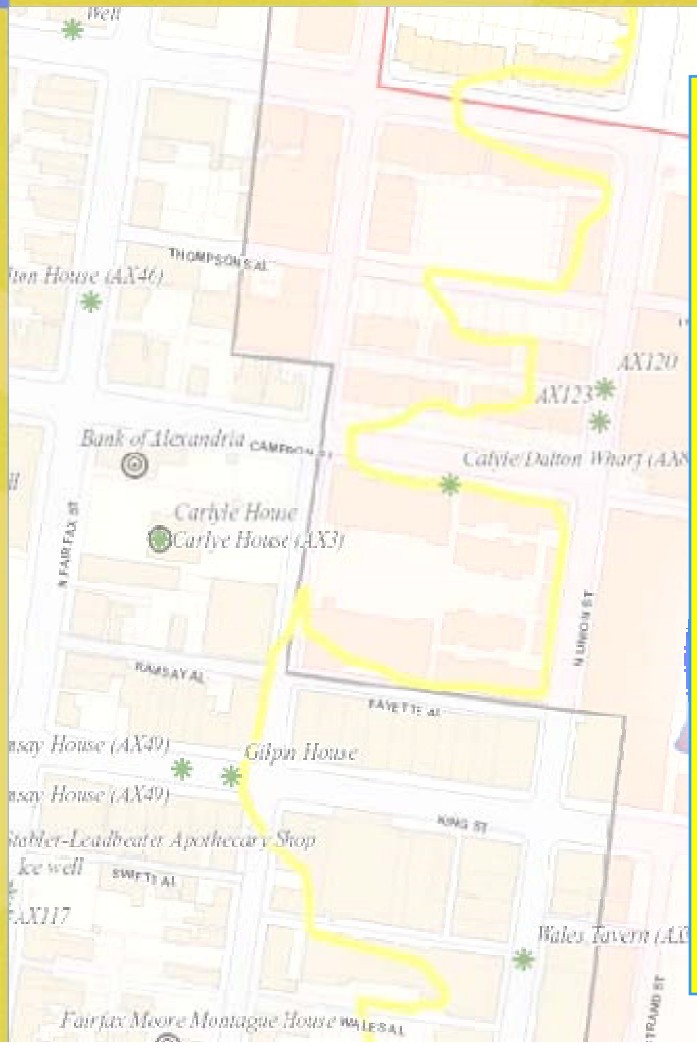
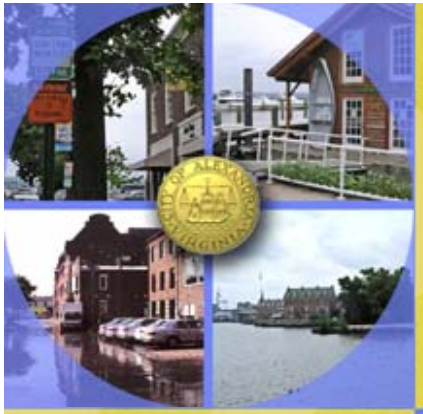


Historic/Archaeological Assessment

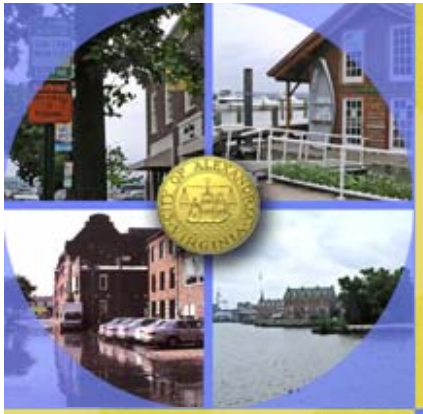


- Archaeological Resource
- Historic Easement Property
- Historic Site
- NRHP-Listed Resources
- NRHP-Listed Resources and Archaeological Resource
- National Historic Landmark
- State Registered
- 10.2 Foot Flood Elevation
- Cemetery
- National Historic Landmark District
- National Register District (100-21)
- Old & Historic Alexandria District (Local)



Interviews Through September

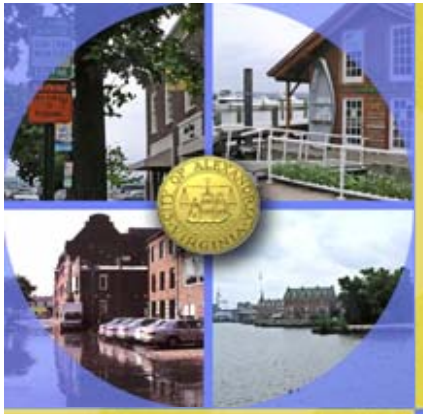
- City staff
- Businesses, residents
  - Approx. 40 contacted
  - Approx. 20 responses



Key Results of Interviews

Businesses main concerns:

- **Media overestimating flooding**
- **Delays in returned electricity to area**
- **Road closures**



Overview of Project Tasks

Identify the Problem

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Determine Cause of the Problem

↓

Identify Solutions

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Analyze Solutions

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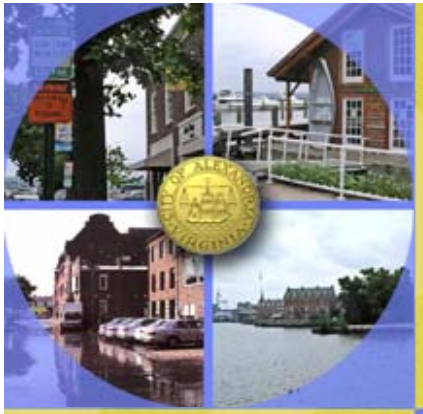
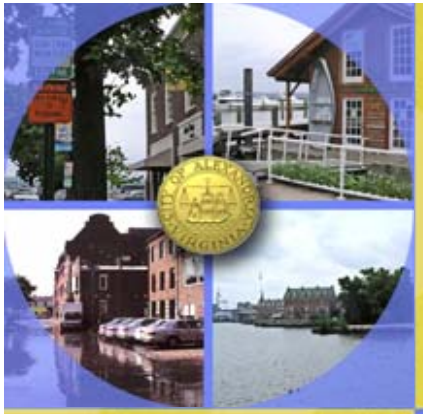
Recommend Best Solutions



Potential Solutions*

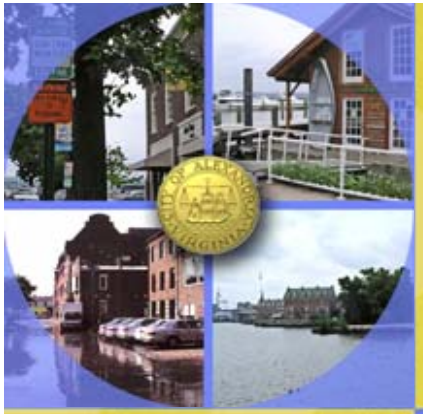
- **Prevention**
- **Property Protection**
- **Natural Resource Protection**
- **Structural Projects**
- **Emergency Services**
- **Public Education and Awareness**

***Per Northern VA Regional Hazard Mitigation Plan, March 2006**



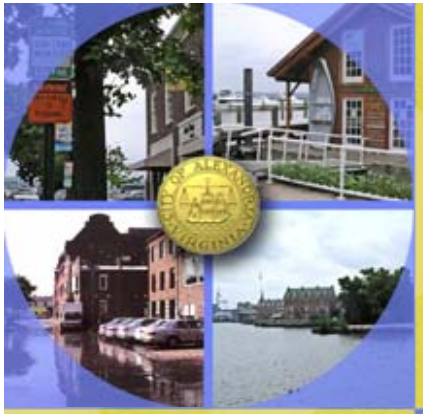
Potential Solutions

- **Prevention**
  - **Sewer backup protection program**
- **Property Protection**
  - **Floodproof**
  - **Acquire buildings**
  - **Elevate buildings**



Potential Solutions

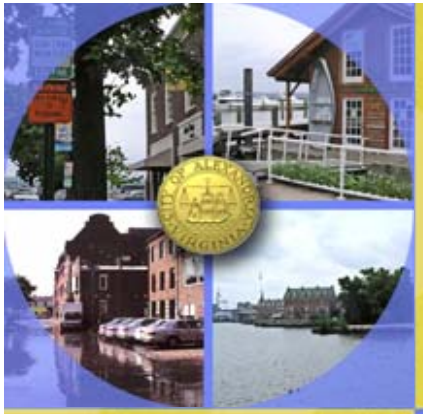
- **Structural Projects**
  - **Flood barriers**
  - **Storm drain improvements**
- **Emergency Services**
  - **Warning systems**
  - **Emergency response & recovery**
  - **Temporary measures**
- **Public Education and Awareness**
- **Others**



Potential Solutions

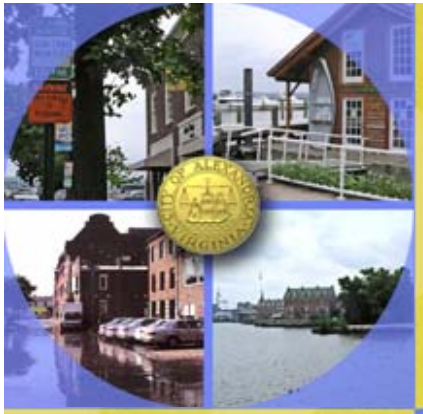
Analysis of solutions will include:

- **Engineering feasibility**
- **Environmental/cultural assessment**
- **Benefit/cost analysis**



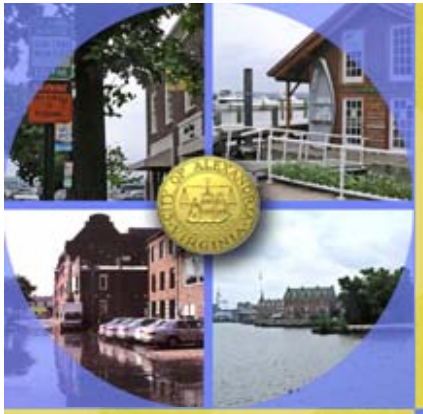
Key Considerations for Flood Solutions

- **Solve flooding problems**
- **Minimize/avoid aesthetic impacts**
- **Minimize environmental impacts**
- **Effective use of City funds**
- **Historic/archaeological resources considered**
- **Business losses considered**



Role of the Advisory Group

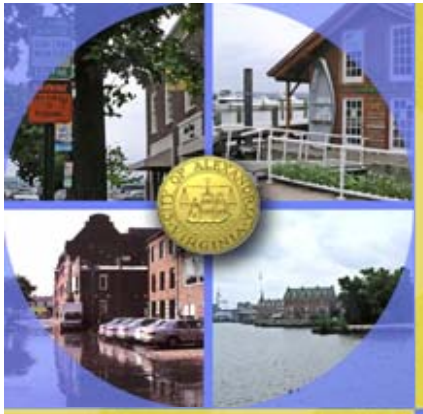
- **Identify known problem areas**
- **Share knowledge of past floods and their impacts on businesses and residences**
- **Provide information on business assets**
- **Provide suggestions and feedback on identified solutions**
- **Build community support for implementing the recommended solutions**



Preliminary Project Timeline

Action	Date
Submit of Initial Assessment Report	Winter 2006/2007
Identify potential improvement measures and develop initial screening criteria	Late Winter 2007
*Advisory Meeting (No. 2)	Early Spring 2007 *
Submit of initial screening of alternatives	Late Spring 2007
Public Meeting	Early Summer 2007 *
Submit Final Report (draft)	Fall 2007
*Advisory Group/Public Meeting (No. 3)	Fall 2007 *
Selected projects included in Capital Improvement Program request for City Council consideration	FY 2009

***Meetings**



Comments and Questions