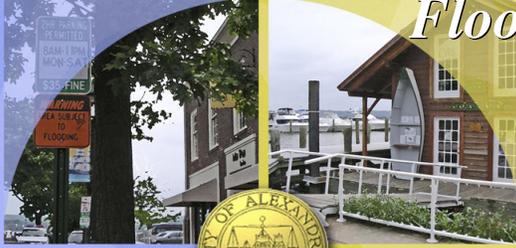


*Potomac River Waterfront  
Flood Mitigation  
Project*



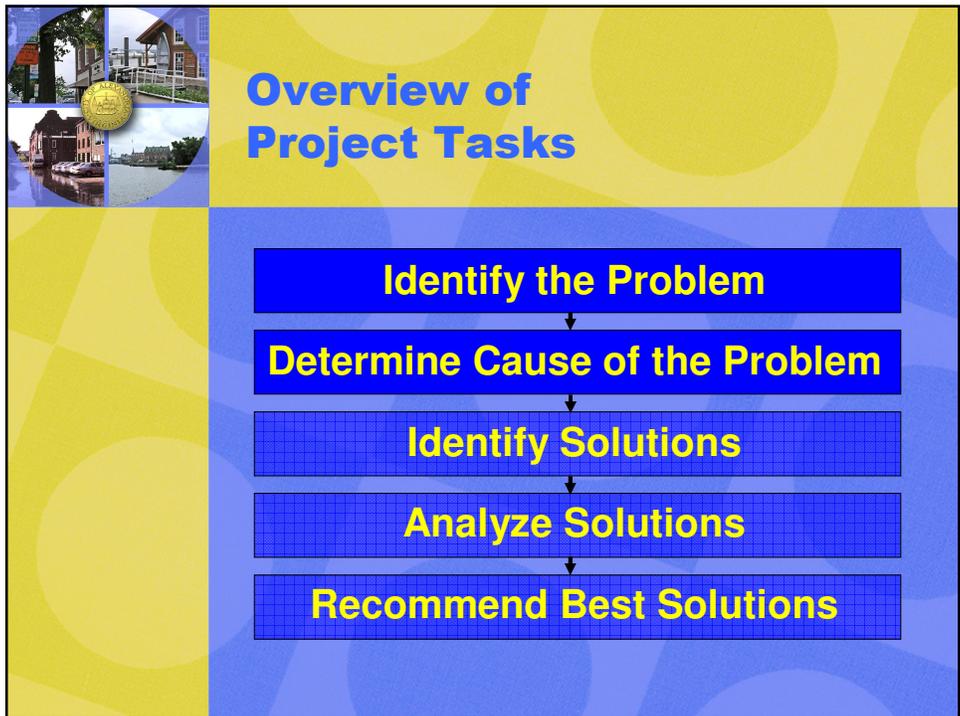
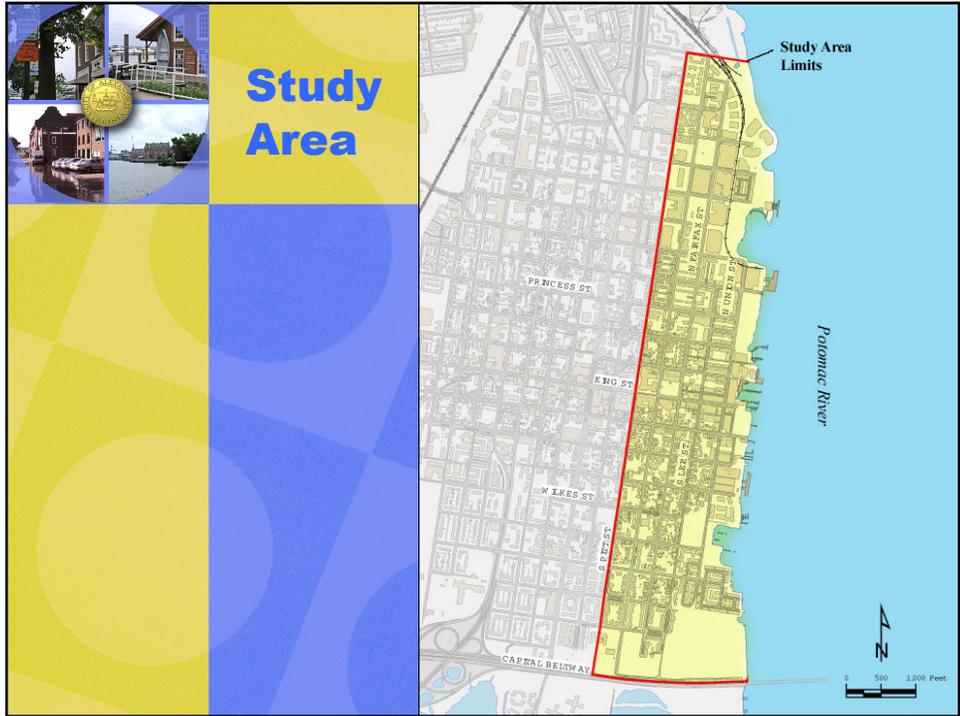
Update for  
Waterfront Committee

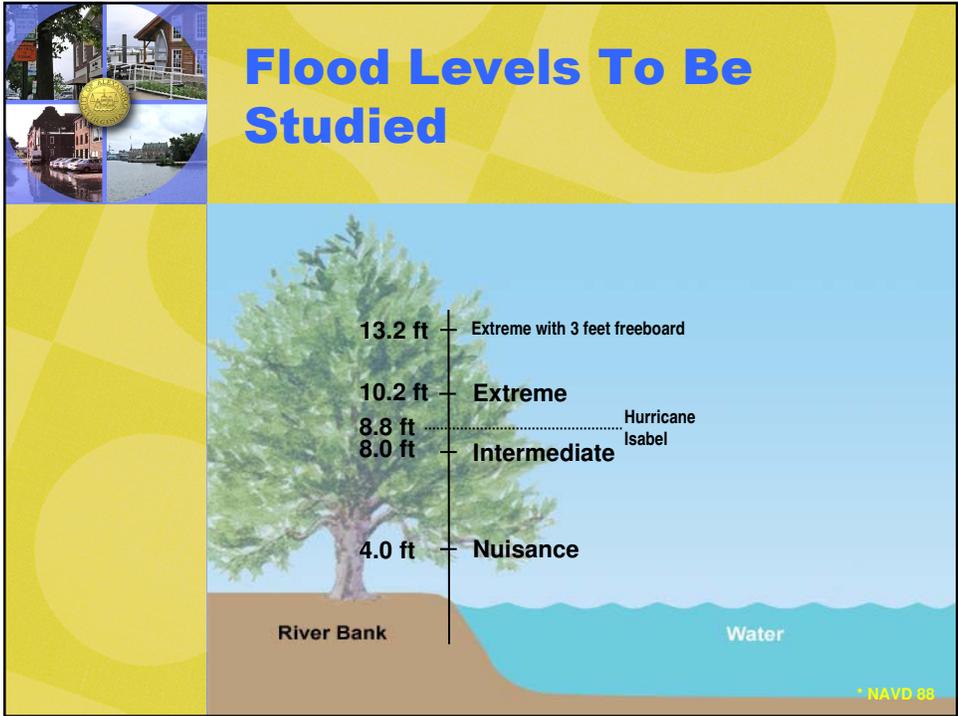
November 17, 2009



**Purpose of the Potomac  
River Waterfront Flood  
Mitigation Project:**

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





- 
- Potential Flood Mitigation Solutions - Initial Assessment**
- **Developed comprehensive list of solutions**
    - Identified 27 general solutions
    - Solutions solve nuisance flooding and/or up to extreme flooding
    - Conducted weighted ranking of solutions



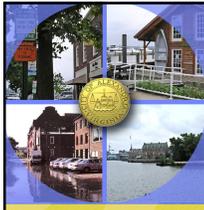
## Evaluation Criteria

- Aesthetics
- Cost Considerations
- Constructability
- Cost of Flood Insurance
- Cost to Property Owners
- City Liability
- Property Ownership
- General Environmental Impacts (wetlands, forested areas)
- Level of Protection for Extreme Flooding
- Level of Protection for Nuisance Flooding
- Extent of Flood Protection
- Long-Term and Maintenance Costs
- Reduces Flood Damages
- Reduces Flooding Extent
- Loss of Business Revenue
- Loss of Recreational Use
- Potomac River View Shed
- Historic/Archeological Resources
- Private Property Acquisition
- Regulatory Requirements
- State/Federal Funding
- Rep Loss Property Mitigated



## Flood Mitigation Solutions Selected for Detailed Evaluation

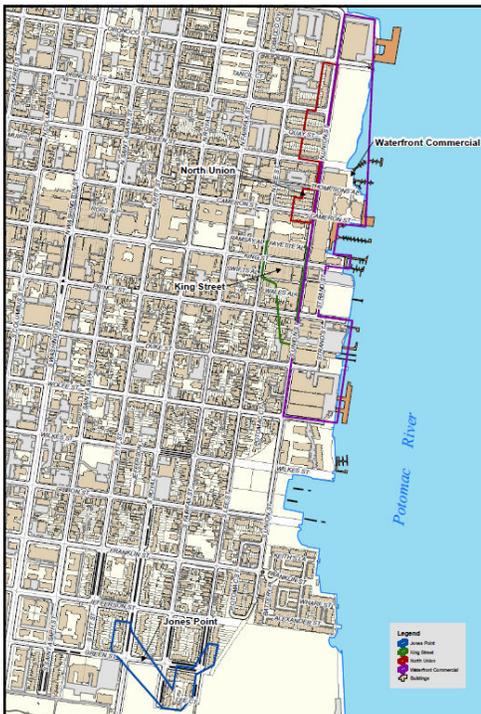
- **Selected 9 solutions to study further after general solution analysis**
  - Dry Floodproofing
  - Internal Relocation
  - Acquisition
  - Elevation
  - Floodwall
  - Walkway as a Floodwall
  - Increase Road and Inlet Elevation
  - Improve Floodplain Ordinance
  - Temporary Flood Barriers



# Benefit-Cost Analysis

Option	Estimated Cost	Total Benefit	Benefit-Cost Ratio
Floodwall	\$ 18,863,273	\$ 12,196,000	0.65
Elevated Walkway	\$ 6,072,000	\$ 14,745,000	2.43
Jones Point Berm	\$ 5,491,000	\$ 236,410	0.04
Improve Roadway Drainage	\$ 565,700	N/A	N/A
Acquire Properties -- Jones Point	\$ 11,280,000	\$ 198,000	0.02
Acquire Properties -- King St	\$ 90,872,000	\$ 4,230,000	0.05
Acquire Properties -- Waterfront Commercial	\$ 104,375,000	\$ 7,336,000	0.07
Acquire Properties -- North Union	\$ 19,860,000	\$ 610,000	0.03
Floodproofing -- Jones Point (17 structures)	\$ 238,000	\$ 231,000	1.0
Floodproofing -- King St Comm. (23 structures)	\$ 1,362,000	\$ 6,337,000	4.7
Floodproofing -- King St Res. (6 structures)	\$ 98,000	\$ 1,134,000	11.6
Floodproofing -- Waterfront Comm. (22 structures)	\$ 2,790,000	\$ 6,728,000	2.4
Floodproofing -- North Union (37 structures)	\$ 568,000	\$ 734,000	1.3

\*All Cost Estimates are preliminary.



# Consultant's Recommendations

## King Street

- Elevated Walkway
- Roadway Improvements

## Waterfront Commercial

- Elevated Walkway
- Floodproofing

## North Union

- Floodproofing

## Jones Point

- Floodproofing





## Elevated Walkway



Waterfront Park at Prince Street

Before



After



## Elevated Walkway



View from Parking Lot on Duke Street

Before



After

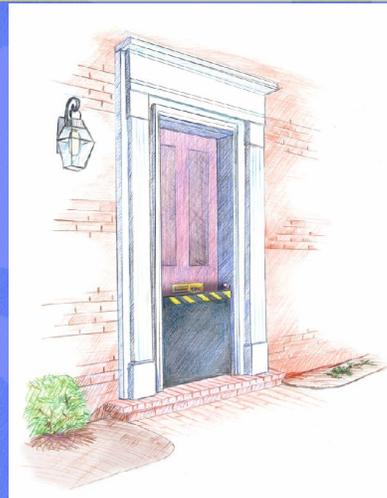
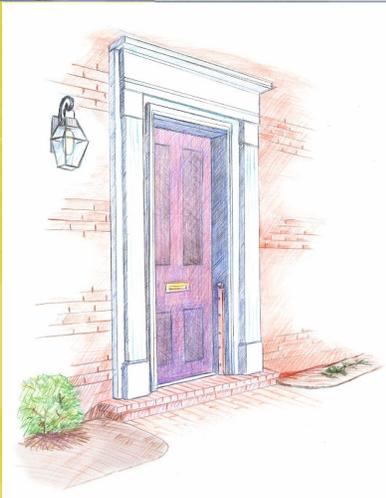


## Roadway Improvements

- Increase inlet and road elevations at King Street and The Strand
- Increase in elevation would be constrained by entrances to commercial buildings
- Similar to successful project at Prince Street and Strand intersection



## Floodproofing





## Floodproofing



## Recommended Non-Structural Measures

- Improve the City's Floodplain and Zoning Ordinance
- Elevation of Goods and Supplies
- Expand sandbagging and other temporary measures



## Next Steps

- City staff review underway
- Draft report to be released shortly
- Public meeting early-2010
- Consultant to complete report
- Concepts refined through waterfront planning process
- Begin implementation as appropriate



## Project Contact Information

City of Alexandria  
Craig Perl, PE at:  
[Craig.Perl@alexandriava.gov](mailto:Craig.Perl@alexandriava.gov)

URS Corporation  
Mary Roman, PE, CFM at:  
[Mary\\_Roman@URSCorp.com](mailto:Mary_Roman@URSCorp.com)