



Waterfront Flood Mitigation

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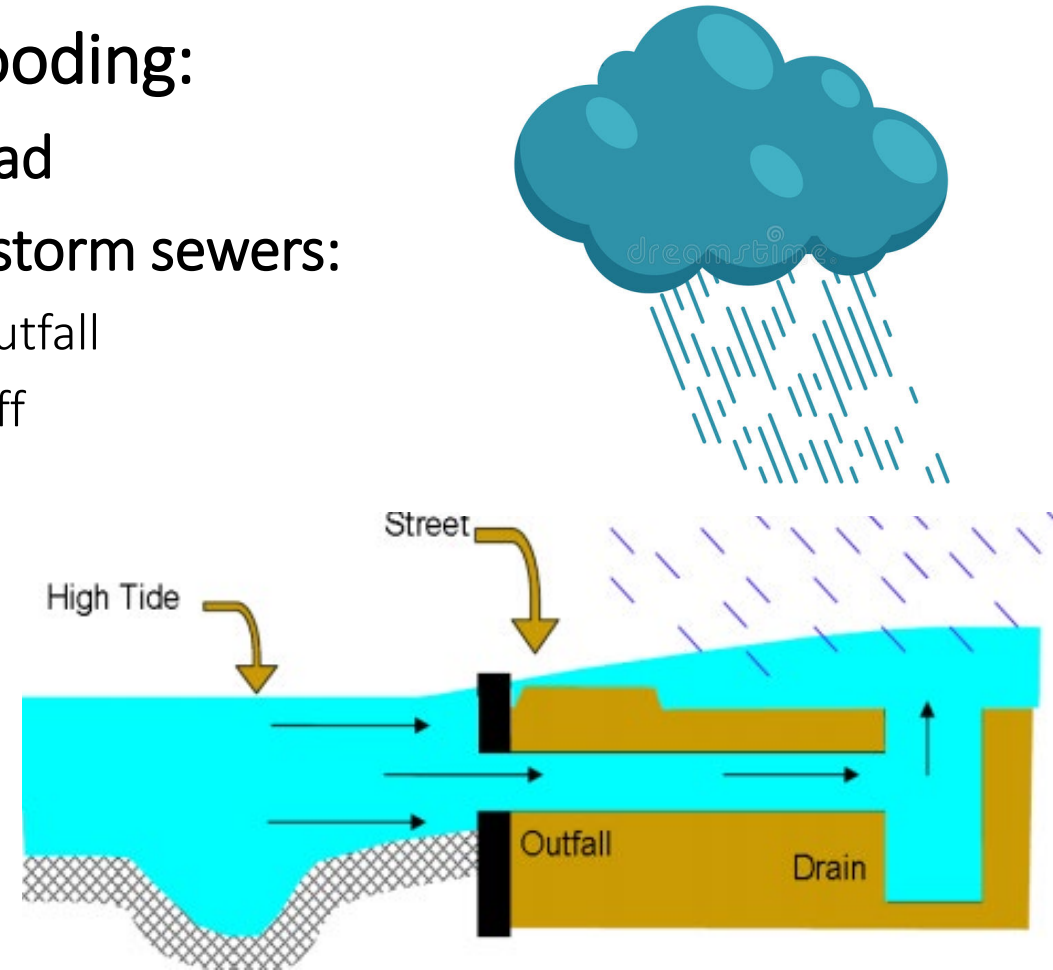


VISION FOR THE WATERFRONT

- **Address nuisance flooding**
 - Significantly reduce frequency of flood impacts from Potomac River
 - Mitigate storm sewer capacity issues
 - Mitigate high tide backing-up water onto streets
- **Ensure public access to the entire Waterfront**
 - Create continuous pedestrian access along the entire Waterfront
 - Create engaging outdoor public amenities and event space

CHALLENGES WITH EXISTING CONDITIONS AND INFRASTRUCTURE

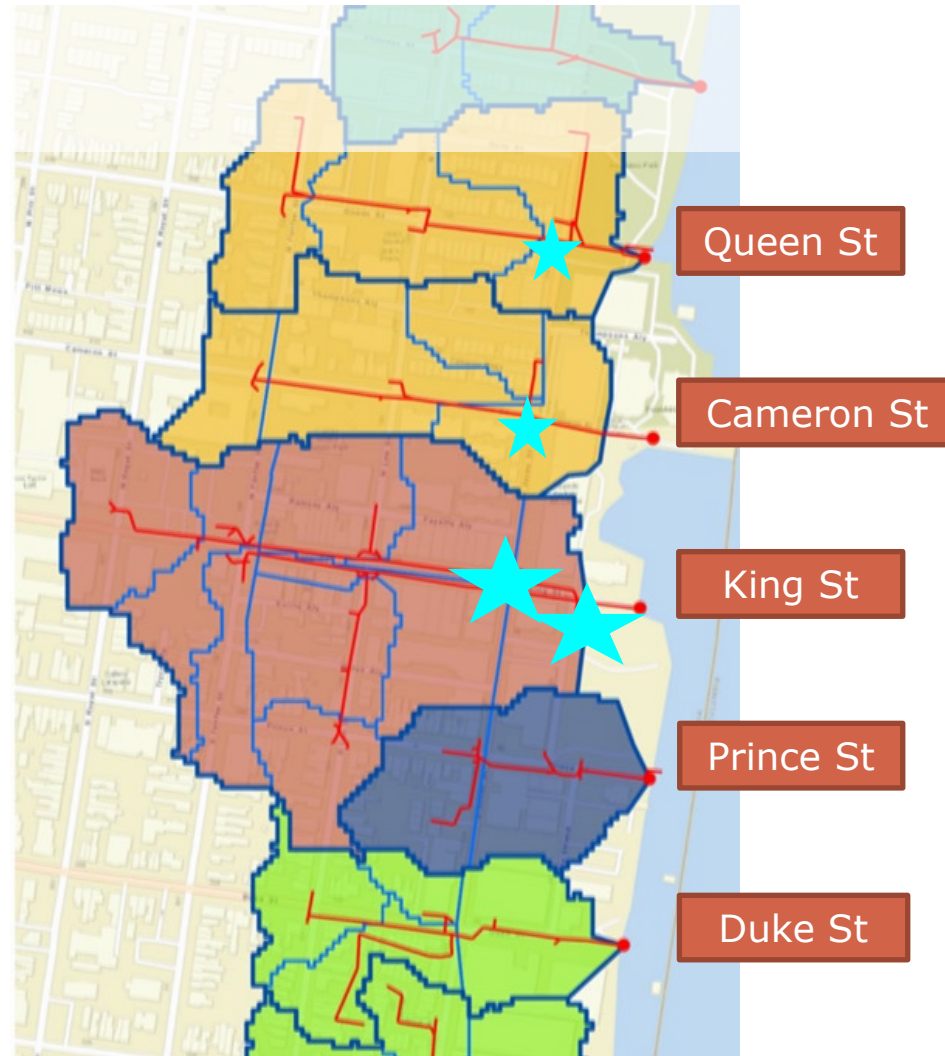
- Must overcome three sources of flooding:
 - Potomac River overtopping the bulkhead
 - Capacity issues and backup in existing storm sewers:
 - High-tide events preventing stormwater outfall
 - Undersized pipes for current rates of runoff
 - Sunny day flooding
 - Direct rainfall and stormwater runoff



CHALLENGES TO OVERCOME – THREE SOURCES OF FLOODING

IN DEPTH MODELING SHOWS THE GREATEST CHALLENGE WITH RUNOFF OCCURS AROUND KING STREET.

 Areas of most severe ponding





NEW APPROACHES AND OPPORTUNITIES

- Concepts developed a decade ago and **rely entirely on grey infrastructure.**
- **Best practices in resiliency have changed**, from philosophy of “**evacuating**” to “**embracing**” the water.
 - Water as an asset and amenity – not just a liability
 - Intercept, retain, then drain
 - Resiliency
- **Current approach is very costly**

NEW APPROACHES AND OPPORTUNITIES – MULTIPLE STRATEGIES

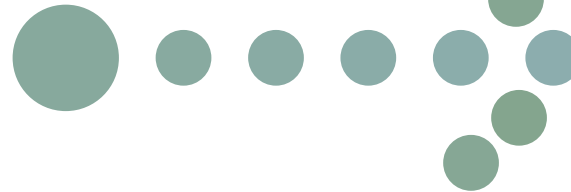
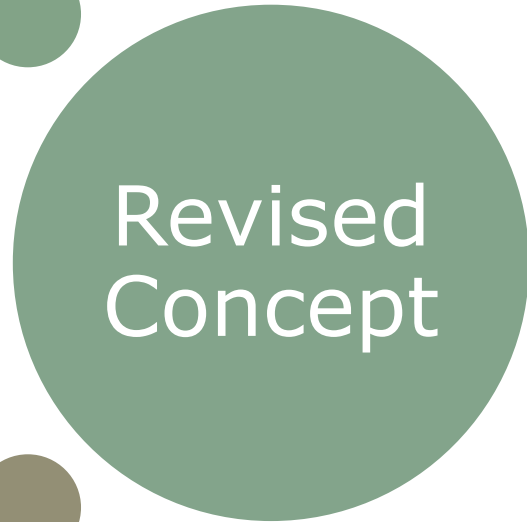
Innovative/Green
Solutions



Value Engineering



Project Phasing



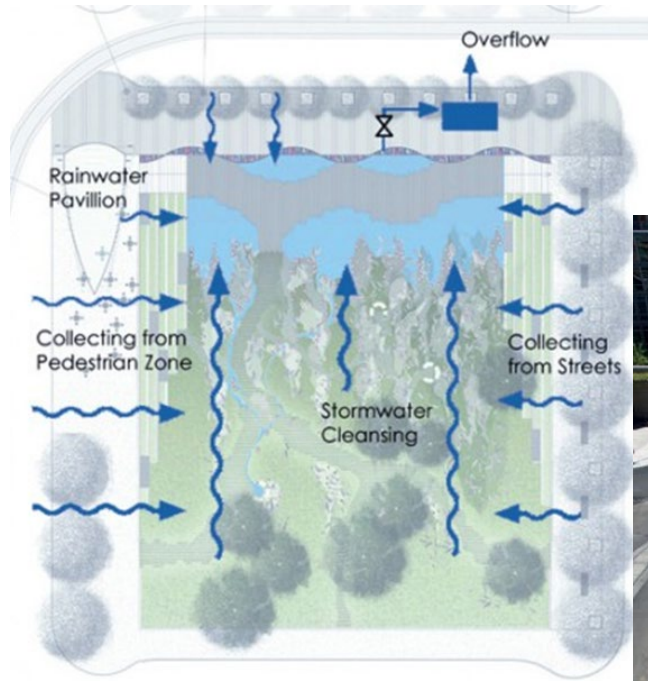
Further
Engineering
Analysis &
Community
Engagement

REIMAGINED LANDSCAPE INFRASTRUCTURE AS PUBLIC AMENITY



Cloudburst Park

REIMAGINED LANDSCAPE INFRASTRUCTURE AS PUBLIC AMENITY



Tanner Springs Park in Portland Oregon

Photos sourced: <https://www.urbangreenbluegrids.com/projects/tanner-springs-park-portland-oregon-us/>
<https://ramboll.com/projects/germany/tanner-springs-park>

INNOVATIVE/GREEN SOLUTIONS



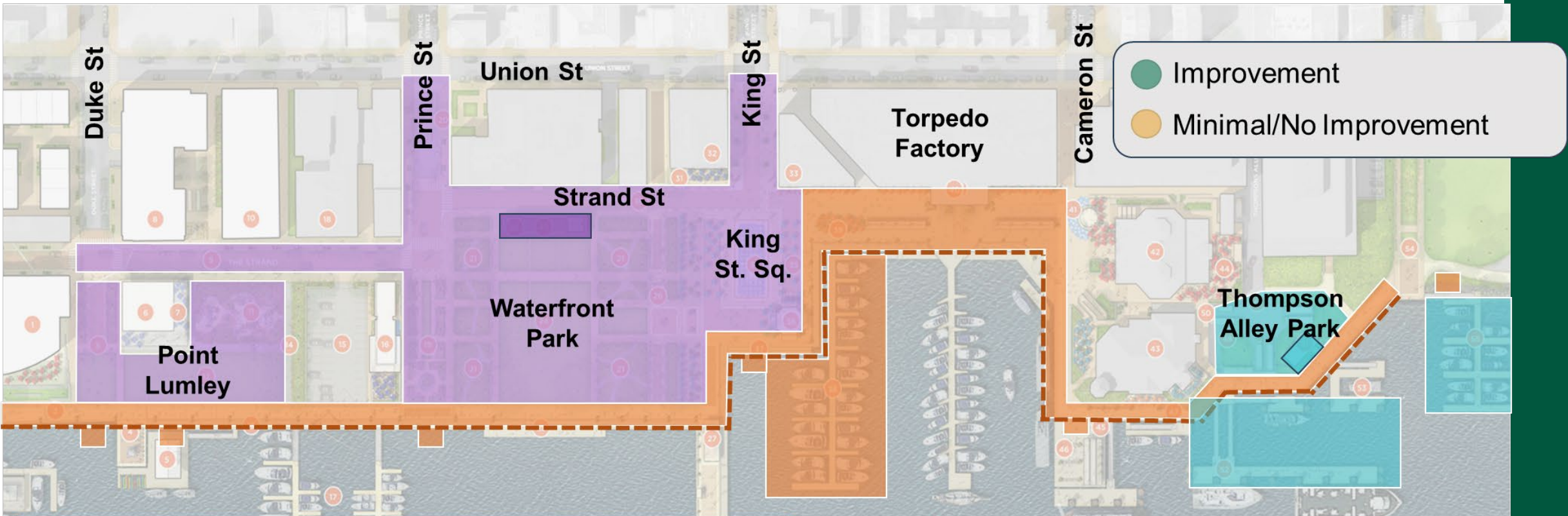
Combination of Permeable Pavements & Underground Storage



PROJECT PHASING – BASELINE PROJECT



PROJECT PHASING – MULTIPLE SCENARIOS UNDER INVESTIGATION

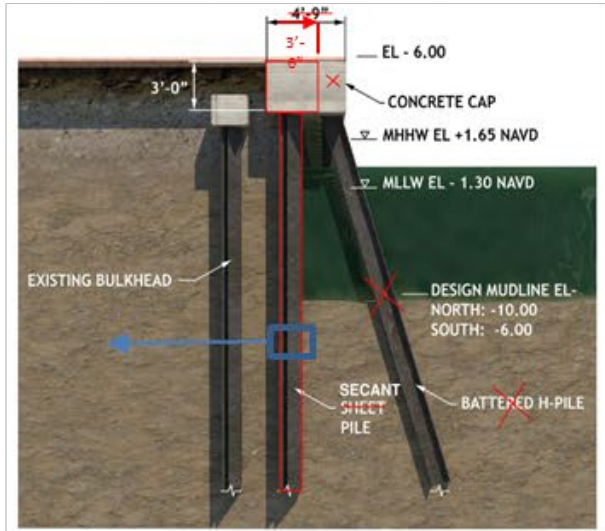


Phase 1 (~\$100 million)		
River flooding	2-30 events per year eliminated	●
SD backups	Up to 60 events per year eliminated	●
Rain events	Depends on intensity	●
Amenities	Promenade as intended + one new pier	●

- Phase 1 (2022 – 2025)
- Phase 2 (2025 – 2028)
- Phase 3 (2028 – 2030)

- IMPROVED BULKHEAD & COMMERCIAL PIER
- CONTINUOUS WATERFRONT PROMENADE
- PRESERVE SPECIMEN ASH TREE
- IMPROVED THOMPSONS ALLEY SERVICE COURT
- PEDESTRIAN BRIDGE & CHARHOUSE TERRACE
- PUMP HOUSE AND RESTROOMS
- COMMERCIAL PIER
- FIRE BOAT PIER
- QUEEN STREET GARDENS
- PIER

VALUE ENGINEERING



Revisit Bulkhead

Reuse/repair existing bulkhead; structural requirements for support elements



Optimize & Downsize

Stormwater sewer system and pump Stations



Reduce Scope

Planned parks, landscape materials, and amenities

NEXT STEPS

- Target Resiliency and Best Practices for stormwater management
- Value engineering solutions
- Civic Engagement –Balance priorities and cost-benefits
 - Waterfront Commission – Subcommittee Formation
 - Beth Gross, Chair, Founders Park Community Association
 - Nathan Macek, Planning Commission
 - Trae Lamond, Old Town Professional & Business Association
 - Mark Ludlow, Alexandria Archaeological Commission
 - Gina Baum, Parks & Recreation Commission
- Phasing to meet City funding goals
- Reduce costs
- Addressing nuisance flooding
- Early impact solutions



POTENTIAL EARLY IMPACT SOLUTIONS



CheckMate® UltraFlex™ Inline
Check Valve





PROPOSED CIP BUDGET – NO OVERALL CHANGE - \$102M

FY21 Funding deferred due to revenue impacts from COVID-19.

Based on project schedule and cash flow model, recommend deferring most of the \$102M FY22 funding into FY23 and FY24:

FY22 - \$22M

- Owner-Advisor Support / Design Oversight
- Planning and Procurement
- Design Services
- Rapid Deployment Control Measures / Possible Construction of Backflow Prevention Solutions

FY23 - \$36.8M

- Design Services
- Construction Services
- Oversight and Project Administration

FY24 - \$43.2M

- Design Services
- Construction Services
- Oversight and Project Administration

\$102M Total (Consistent with FY21 approved CIP – not a cost estimate)



ANTICIPATED PROCESS SCHEDULE*

1. Additional Investigations and Modeling / Cost-Benefit Analysis
2. Public Input – Scope of work aligned to priorities
3. PDB RFP development: present – Early-2022
 - Cost validation
 - Criteria development to qualify PDB
 - Industry outreach
 - Updates to Council and Waterfront Commission
4. PDB procurement: Late 2021 – Early 2022
5. PDB phase 1 (design): Late 2022-2023
6. Negotiate GMP: Late 2023-2024
7. PDB phase 2 (construction): Begin late 2023-early 2024
8. Site Construction: mid-2024 through mid 2027

*Subject to change to accommodate community feedback and civic engagement or changes to CIP funding schedule