Fall 2020 Capital Improvement Program (CIP) Worksessions

Capital Improvement Project Updates

November 16, 2020
## Agenda

<table>
<thead>
<tr>
<th>Item</th>
<th>Duration</th>
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<tbody>
<tr>
<td>Public Comment Period</td>
<td>15 mins</td>
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<tr>
<td>Interdepartmental Flood Strike Team Update</td>
<td>45 mins</td>
</tr>
<tr>
<td>Waterfront Flood Mitigation Project Update</td>
<td>30 mins</td>
</tr>
<tr>
<td>IT Infrastructure Project Update</td>
<td>30 mins</td>
</tr>
<tr>
<td>Public Comment Period</td>
<td>continued</td>
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Flood Program Update

Yon Lambert
Department of Transportation and Environmental Services, Director
CITY MANAGER APPOINTMENTS FROM NINE DEPARTMENTS

- Data Collection
- Enhanced Communications
- Legislative Advocacy
- Project Acceleration & Reprioritization
- Expanded Early Warning Programs
- Community Engagement & Technical Assistance

FLOOD RESPONSE STRIKE TEAM
PRINCIPLES TO ADDRESS HIGH-RISK FLOODING AREAS

Balance of Urgency & Affordability

Holistic & Systems-Based Solutions (Capacity)

Reflect Shared Public-Private Approach

State of Good Repair (Maint.)

Regulatory Compliance (Quality)

Equity

Apply CIP Project Process

Design Approach Ongoing/Building Resiliency
**SWU Fee Increase Scenario:**
**Council Guidance to be Aggressive & Accelerate Project Delivery**

<table>
<thead>
<tr>
<th>Flood Mitigation Element</th>
<th>Increase Scenario</th>
</tr>
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<tbody>
<tr>
<td>Capacity Projects (≈9, including funds for Hooffs Run Culvert)</td>
<td>Increase to ≈$110 million/10 years (≈400%)</td>
</tr>
<tr>
<td>Spot Projects (currently 3-5/year)</td>
<td>Increase by ≈$2 million (+3-6 projects/year)</td>
</tr>
<tr>
<td>Channel Maintenance</td>
<td>Increase by ≈$500,000 annually</td>
</tr>
<tr>
<td>State of Good Repair</td>
<td>Increase by ≈$1 million annually</td>
</tr>
<tr>
<td>Technical Assistance &amp; Public-Private Partnership Grants</td>
<td>New $300,000 to $500,000 annually</td>
</tr>
<tr>
<td>Staffing Capacity</td>
<td>≈10 new (engineers, planners, operators)</td>
</tr>
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*Increase in FY2022 + steady increases over 10 years*
INCREASE SCENARIO: SPENDING DIFFERENCE WITH INCREASE IN FY 2022 (+STEADY 3% ONGOING)

Change in 10-year Plan from Baseline

Note: Current Fee generates ~$8.5m revenue annually
SWU Fee Rate Increase Impacts in FY2022

### Residential Property Impacts

<table>
<thead>
<tr>
<th>Residential Properties</th>
<th>Current Fee</th>
<th>Fee Increase</th>
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</thead>
<tbody>
<tr>
<td>Typical Single-Family</td>
<td>$140</td>
<td>$280</td>
</tr>
<tr>
<td>Large Single-Family</td>
<td>$234</td>
<td>$468</td>
</tr>
<tr>
<td>Townhome</td>
<td>$59</td>
<td>$118</td>
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<tr>
<td>Condominium</td>
<td>$39</td>
<td>$78</td>
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### Non-Residential Property Impacts

<table>
<thead>
<tr>
<th>Non-Residential Properties</th>
<th>Current Fee Range*</th>
<th>Fee Increase (Range)</th>
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<tbody>
<tr>
<td>Apartment Building</td>
<td>$7,000 to $65,000</td>
<td>$14,000 to $131,000</td>
</tr>
<tr>
<td>Retail Building</td>
<td>$3,000 to $6,000</td>
<td>$6,000 to $12,000</td>
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<tr>
<td>Church</td>
<td>$1,300 to $15,000</td>
<td>$2,600 to $30,000</td>
</tr>
<tr>
<td>Non-Profit Organization</td>
<td>$300 to $12,000</td>
<td>$600 to $24,000</td>
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</table>

*calculated by impervious area
SANITARY SEWER FEE-FUNDED EFFORTS TO REDUCE INFILTRATION & INFLOW AND BASEMENT BACK-UPS

Asset Renewal Program (I&I)
- $33 million programmed over 10 years
- Inspections start January; rehabilitation in late 2021/early 2022
- Start in areas where sewer back-ups have occurred (Four Mile Run and Commonwealth sewer sheds)

Combined Sewer System Rehab
- Separation of sanitary sewers from combined sewers in areas of sewer back-ups
- Potential project list ready in December
- Initial design 2021, construction in 2022
**Legal / Legislative Actions**

### Public-Private Grant Program

- ✓ Sufficient authority to proceed with pilot
- ✓ Program parameters/principles:
  - ~$5,000 cap, 50% match (with some equity considerations)
  - Retroactive to July 2019
  - Proof of damage to principal structure

### Legislative Package

- ✓ Seeking additional State authority via the City’s legislative agenda
  - Subcommittee
  - Enabling legislation
**Updated Communication & Early Warning Tools**

**Communication**
- Update Alex311 to make it more user friendly for flood issues
- Develop a one-stop shop landing page for flooding
- Hold community/neighborhood meetings
- Provide technical support

**Early Warning**
- Expand/update rain and stream gauge network
- Expand ‘warning signs’ and ‘early warning’ system
- Explore real-time stream gauge dashboard
FLOOD-READY ALEXANDRIA

Flood-Ready Alexandria is an initiative to address flooding in our community. Minimizing flooding is a shared public-private responsibility, and the City is committed to working with residents and businesses to mitigate the impacts of flooding and build community resiliency.

Page updated on November 10, 2020 at 10:00 AM

Flooding in Alexandria
The City has a long history of flooding, including coastal flooding and flash flooding. Recently, the City has experienced more frequent and severe flash flood events. This section provides information on the history of flooding in Alexandria.

- Background & History
- Flood Reports in Alexandria
- FEMA 100-Year Floodplain
- Sign Up For Alerts

What the City is Doing
The City is responsible for serving 165,000 residents over 15 square miles and has a multi-pronged effort to mitigate flooding in the community.

- Policies
- Programs
- Projects
- Maintenance
- Community Outreach & Technical Assistance
- Early Warning & Emergency Response

What You Can Do
Mitigating the impacts of flooding in our community is a shared responsibility between government, residents, and businesses. Learn more about what you can do to prevent and/or mitigate flooding on your property.

- Assess Your Flooding Situation
- Purchase Flood Insurance
- Flood-Proof Your Property
- Prevent Sewer Backups
- Report Issues to Alex311
- Be Prepared

Additional Resources
There is a wealth of information available across the City website related to flooding and water quantity. Please refer to these additional resources as needed.

- Glossary
- Frequently Asked Questions – FAQs
- Stream Gauges
- SewerViewer
UPDATE ON THE HOOFFS RUN CULVERT

➢ Project start November 16
➢ Duration 4-6 months
➢ W Walnut to Duke Street
➢ Advance notice and ongoing community outreach
Next Steps

- Consider SWU fee changes in January 2021

- Implement immediate recommendations (using FY 2021 funds):
  - Early warning & Communications
  - State of good repair
  - Spot improvements

- Consider Phase 2 tasks
  - Federal legislation
  - Review of regulations and policies
  - Design standard
Waterfront Flood Mitigation

Terry Suehr, PE, PMP, DBIA
Department of Project Implementation, Director
VISION FOR THE WATERFRONT

• Waterfront Small Area Plan – Council adopted January 21, 2012
• Core Area Phasing and Implementation – Council adopted January 25, 2015
  • Primary Goals:
    • 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 four 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
• Climate Change - More intense storms
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.
  • Intercept, retain, then drain
  • Resiliency
  • Water as an asset and amenity – not just a liability

• Previously planned approach is very costly
Detailed Analysis of Challenges and Opportunities

In depth modeling shows the greatest challenge with runoff occurs around King Street

Areas of most severe ponding

Queen St, Cameron St, King St, Prince St, Duke St
NEW APPROACHES AND OPPORTUNITIES – MULTIPLE STRATEGIES

Innovative/Green Solutions

Value Engineering

Project Phasing

Revised Concept

Further Engineering & Cost-Benefit Analysis & Additional Community Engagement
REIMAGINED LANDSCAPE INFRASTRUCTURE AS PUBLIC AMENITY

“Cloudburst” Features
Reimagined Landscape Infrastructure as Public Amenity

Tanner Springs Park in Portland Oregon
https://ramboll.com/projects/germany/tanner-springs-park
INNOVATIVE/GREEN SOLUTIONS

Combination of Permeable Pavements & Underground Storage may provide some relief from sewer capacity issues and/or reduce size of pump stations.
Out of the box thinking – Flood proofing, raising buildings during restoration or redevelopment
PROJECT PHASING – BASELINE PROJECT – 2014 OLIN PLAN
PROJECT PHASING – MULTIPLE SCENARIOS UNDER REVIEW

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

Improvement
Minimal/No Improvement
Value Engineering

Revisit Bulkhead
Reuse/repair existing bulkhead; structural requirements for support elements

Optimize & Downsize
Stormwater sewer system and pump Stations

Rethink Scope
Planned parks, landscape materials, and amenities
**Next Steps**

- Waterfront Commission – Subcommittee Formation (underway)
  - Balance priorities and cost-benefits
- Target Resiliency and Best Practices for stormwater management
- Value engineering solutions
- Phasing to meet City funding ability
- Reduce costs
- Addressing nuisance flooding
- Early impact solutions
POTENTIAL EARLY IMPACT SOLUTIONS

CheckMate® UltraFlex™ Inline Check Valve
### Proposed CIP Budget – no overall change

**Approved Waterfront FY22 Budget is $102M**

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<thead>
<tr>
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<th>Current Budget</th>
<th>Proposed Budget</th>
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<td>FY22</td>
<td>$102.0M</td>
<td>$22.0M</td>
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<tr>
<td></td>
<td></td>
<td>• Owner-Advisor Support / Design Oversight</td>
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<tr>
<td></td>
<td></td>
<td>• Planning and Procurement</td>
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<tr>
<td></td>
<td></td>
<td>• Rapid Deployment Control Measures</td>
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<tr>
<td></td>
<td></td>
<td>• Design Services</td>
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<tr>
<td>FY23</td>
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<td>$36.8M</td>
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<td></td>
<td>• Construction Services</td>
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<tr>
<td></td>
<td></td>
<td>• Oversight and Project Administration</td>
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<tr>
<td>FY24</td>
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<td>• Construction Services</td>
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<td></td>
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<td>• Oversight and Project Administration</td>
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<tr>
<td>Total</td>
<td>$102M</td>
<td>$102M</td>
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ANTICIPATED PROCESS SCHEDULE*

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

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

Vanetta Pledger
Chief Information Officer/Director
DISCUSSION AREAS

• Modernization and State of Good Repair
  • Alexandria Justice Information System (AJIS)
  • Cybersecurity
  • Municipal Fiber
  • Digital Government Services
MODERNIZATION GOALS

Infrastructure Investments

Cybersecurity

Digital Government Services
MODERNIZATION
Replacing legacy systems allows the City to stay current with the vendors’ lifecycle and reduces risks

Maintenance Costs

- High
- Low

Enterprise Applications & Infrastructure

- Vendor Supported
- Stable
- At Risk

- Enterprise Resource Planning
- APEX
- Computerized Maintenance Management System
- Time and Attendance
- Recreation Database
- Custom Applications
- Legacy Infrastructure
- Courts
ALEXANDRIA JUSTICE INFORMATION SYSTEM (AJIS)

- Commonwealth of Virginia Court Case Management System
  - Signed Memo of Understanding
  - Initiated data conversion analysis

- Third-party Vendor Engagement for RFP Development
  - Request For Proposal development - Underway
Alexandria Justice Information System (AJIS)

- Procurement:
  - Jail Management System
  - Commonwealth Attorney System
  - Warrant Management System
  - Data Exchange Hub

- Estimated cost of systems investment and implementation $12M-$14M

- Estimated 2-3 years replacement process following vendor(s) selection
CYBERSECURITY INVESTMENTS

- 2-Factor Authentication
- Cybersecurity Training
- Security Event Management
- Vulnerability Management
## Cybersecurity Framework

<table>
<thead>
<tr>
<th>Capability</th>
<th>Description</th>
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<tbody>
<tr>
<td>Identify</td>
<td>Develop the organizational understanding to manage cybersecurity risk to systems, assets, data, and capabilities. (e.g. Two-factor authentication)</td>
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<tr>
<td>Protect</td>
<td>Develop and implement safeguards to ensure protection of the City’s assets. (e.g. Continuously phishing staff)</td>
</tr>
<tr>
<td>Detect</td>
<td>Utilize tools and develop methods to identify the occurrence of a cybersecurity event. (e.g. Vulnerabilities, event logging and altering)</td>
</tr>
<tr>
<td>Respond</td>
<td>Establish protocols to rapidly address detected cybersecurity events. (e.g. Automated notifications of suspicious activity or quarantine)</td>
</tr>
<tr>
<td>Recover</td>
<td>Develop and maintain plans for resilience and to restore any capabilities or services that were impaired due to a cybersecurity event. (e.g. Cloud)</td>
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</table>
PROPOSED MUNICIPAL FIBER DESIGN
MUNICIPAL FIBER CURRENT STATUS

• City’s Municipal Network Project will connect approximately 90 City facilities including schools and libraries. The network will include 40 miles of 2-2" conduits.

• Work completed to date:
  • Issued Invitation to Bid (ITB) Nov 8, 2019
  • Cancelled ITB Feb 19, 2020
  • Industry Analysis
    • Extend construction timeline from 2 years to 4 years
    • Define conduit location variances

• Next steps:
  • ITB Issuance and refine construction budget
Digital Government Services

Remote workforce
Cybersecurity

Virtual contact centers
Collaboration
DIGITAL GOVERNMENT SERVICES – COVID-19 RESPONSE

- Housing Rental Assistance
- Connectivity for remote 911 dispatching
- Virtual Public Engagement
- Extended Wireless Access for Schools and Community
FALL WORKSESSIONS AGENDA

• Thursday, October 29, 2020
  • CIP Overview
  • Project Updates – Public Facilities

• Monday, November 16, 2020
  • Flood Strike Team Progress Update
  • Project Updates – Waterfront Flood Mitigation
  • Project Updates – IT Infrastructure

• Tuesday, November 17, 2020
  • Joint City Council & School Board Worksession on School Capital Program
Questions/Discussion