



Legislation Details (With Text)

File #: 18-7461 **Name:** Combines Sewer System Long Term Control Plan Update
Type: Written Report **Status:** Agenda Ready
File created: 3/8/2018 **In control:** City Council Legislative Meeting
On agenda: 4/10/2018 **Final action:**
Title: Consideration of the Combined Sewer System Long Term Control Plan Update.

Sponsors:

Indexes:

Code sections:

Attachments: 1. 18-7461_Attachment 1 - LTCPU Report-DRAFT, 2. 18-7461_Attachment 2_Memo from Ad Hoc CSS Stakeholders Group, 3. 18-7461_Attachment 3- Presentation

Date	Ver.	Action By	Action	Result
------	------	-----------	--------	--------

City of Alexandria, Virginia

MEMORANDUM

DATE: APRIL 4, 2018
TO: THE HONORABLE MAYOR AND MEMBERS OF CITY COUNCIL
FROM: MARK B. JINKS, CITY MANAGER /s/

DOCKET TITLE:

Consideration of the Combined Sewer System Long Term Control Plan Update.

ISSUE: Consideration of the Draft Long Term Control Plan Update for the Combined Sewer System.

RECOMMENDATION: That City Council take the following actions related to the Long Term Control Plan Update (LTCPU) for the Combined Sewer System:

1. Receive the Draft Long Term Control Plan Update for the Combined Sewer System, herein referred to as LTCPU;
2. Docket the draft LTCPU for Public Hearing on April 14, 2018;
3. Approve the LTCPU with the Unified Tunnel Option (also referred to as Option B+) at the April 24,

2018 Legislative Meeting, following the 30-day public comment period which ends on April 23, 2018;

4. Recognize the Ad Hoc Combined Sewer System Plan Stakeholder Group and thank them for their efforts in providing valuable input during the development of the plan update and their outreach to the civic groups they represented; and
5. Authorize the City Manager to make any appropriate technical or non-substantive changes and submit the Final LTCPU document to the Virginia Department of Environmental Quality.

BACKGROUND: The City of Alexandria has a Combined Sewer System (CSS) dating back to the early 1800s that consists of approximately 540 acres located only in Old Town, which comprises about 5% of the City's entire sanitary sewer system. At the time of its construction, this system was considered "state of the art", but now this system along with about 800 similar sanitary sewer systems in the United States needs to be substantially updated. During dry weather, sanitary wastewater collected in the CSS is conveyed to the Alexandria Renew Enterprises (AlexRenew) wastewater treatment facility. During many rain events, the capacity of the CSS may be exceeded and this excess flow, which is a mixture of sanitary sewage and stormwater, is discharged directly to Hunting Creek, Hooffs Run or Oronoco Bay through the City's four permitted combined sewer overflow (CSO) structures. Overflows from these outfalls have long been permitted by the Virginia Department of Environmental Quality (VDEQ) and the City has been operating under a DEQ-approved Long Term Control Plan since 1999. The City in 2016 submitted an update to its plan following two years of public meetings, hearings, and community engagement efforts.

However, in 2017, the Virginia General Assembly having become aware of the City's LTCPU plan timetable enacted a new unique State law that required Alexandria to substantially accelerate its plan by mandating that the City remediate all four of its combined sewer outfalls by July 1, 2025. The 2017 legislation also requires compliance with the Hunting Creek Total Maximum Daily Load (TMDL) or the EPA CSO Policy Presumption Approach, whichever is more stringent. The Hunting Creek TMDL applies to CSO Outfalls 002 (Hunting Creek), 003 (Hooffs Run) and 004 (Hooffs Run). The Presumption Approach applies to Outfall 001 (Oronoco Bay).

To update its plan, the City Manager established a central City Manager's Office staff lead for this project who then coordinated the development of a close partnership with AlexRenew Enterprises. In addition, the City Ad Hoc Combined Sewer System Plan Stakeholder Group was reconvened and met from Fall 2017 through Spring 2018 to review and recommend a LTCPU. This Draft Long Term Control Plan Update meets all of the requirements of the 2017 State legislation.

DISCUSSION: In developing the Long Term Control Plan Update, a range of technologies were developed and evaluated and a short list of CSO control strategies was further evaluated by the Stakeholder Group. The proposed plan calls for construction of a unified tunnel system (referred as Option B+, Unified Tunnel with Dual-Use Wet Weather Treatment in the LTCPU) that would intercept flows from all of the combined sewer outfalls and transport these flows to AlexRenew's Water Resources Recovery Facility (WRRF). Combined sewer flows would be fully treated at the WRRF until the capacity of the AlexRenew plant is reached. Once capacity is reached, a portion of the flows would receive wet weather treatment (primary treatment and disinfection) using existing infrastructure at the WRRF, while the remaining flows would be stored in the tunnel system. If the plan is approved, combined sewer overflows would only occur during extreme storm events when flows exceed the WRRF, wet weather treatment and the tunnel system capacity. This unified tunnel system:

1. Reduces the number of overflows to, on average, four or fewer overflows per year for each outfall

- as **compared to approximately 50 to 70 per year** with the current system;
2. Provides for system-wide **capture and treatment of 96% of all combined sewer flows**;
 3. Provides **resiliency** for future conditions including global climate change;
 4. Provides **flexibility** for AlexRenew to address future regulatory changes by preserving space on an otherwise space-constrained urban facility;
 5. **Leverages** existing infrastructure at AlexRenew;
 6. **Minimizes disruption to the community** and businesses by maximizing construction activity on the AlexRenew site;
 7. Meets the intent of the 2017 CSO Law; and
 8. **Has unanimous support of the Stakeholder Group**, staff and consultant teams from the City and AlexRenew.

The LTCPU was developed by City staff, AlexRenew staff, and consultants with input from the Ad Hoc Combined Sewer System Plan Stakeholder Group (Stakeholder Group). This 14-member Stakeholder Group was established by City Council with the charge to provide staff with advice on the overall strategy of the plan in order to meet regulatory requirements, while being cognizant of the costs and community impacts. The Stakeholder Group is developing a memorandum which will provide their recommendations to City Council, including the approval of the implementation of the tunnel system reflected in the proposed LTCPU. The Stakeholder Group is recommending consideration of the following:

- Construction of Unified Tunnel System (Option B+, Unified Tunnel with Dual-Use Wet Weather Treatment);
- Continued engagement with the community as the LTCPU proceeds with the design and construction phases of the project;
- Explore and pursue other sources of funding, including State grants, for implementing the LTCPU to lessen the burden on ratepayers and to investigate affordability programs for lower income residents;
- Explore the extension of CSO 001 outfall beyond Oronoco Bay to reduce impacts of CSOs in Oronoco Bay;
- Support of the concept of the City transferring the outfalls, associated control structures, and the State-issued discharge permit to AlexRenew; and
- Consideration of impacts to historical and archaeologic resources during LTCPU design and implementation.

Some members of the Stakeholder Group felt there should be a specific commitment in the LTCPU to the implementation of green infrastructure in the combined sewer area. Based on a thorough analysis of green infrastructure, and its cost as well as, performance effectiveness in meeting applicable standards for combined sewer discharges, and in recognition of a parallel state mandates with respect to stormwater, it is staff's recommendation that the:

- City utilize green infrastructure where appropriate within the CSO area over time as a tool for adaptation and resiliency;
- Green infrastructure continues to be implemented citywide as part of the existing stormwater management program, through its Capital Improvement Program;
- Staff evaluates the use of green infrastructure as part of the upcoming Chesapeake Bay Phase II TMDL Action Plan;
- Restoration of sites disturbed for the LTCPU implementation include implementation of green infrastructure to the extent practical; and
- Implementation of green infrastructure continues to be part of the private sector redevelopment process

throughout the City.

Along with the previous Stakeholder Meetings, which were attended by the public, the City will hold a public meeting on April 5, 2018, in order to inform and receive input from the broader community. The City and AlexRenew also routinely have met with VDEQ staff during the development of the LTCPU. The current draft LTCPU is also undergoing a 30-day public comment period and feedback on the plan is being solicited. The 30-day public comment period ends on April 23, 2018. Staff will provide Council with a summary of all input received prior to Council's proposed action on the LTCPU at its April 24, 2018 Legislative Meeting. Public comment received will also be included as an appendix with the final plan submitted to VDEQ.

The LTCPU was developed as a partnership between the City and AlexRenew which allowed for the leveraging of both the City's and AlexRenew's experience and abilities. AlexRenew has a proven track record of delivering complex infrastructure projects for more than 60 years. Since the LTCPU involves significant construction at AlexRenew and operations related to the treatment of combined sewer flows, the City and AlexRenew are proceeding with a CSO outfall transfer initiative. This would allow AlexRenew to own the proposed tunnel infrastructure and take ownership of the CSO outfalls and then construct the proposed unified tunnel and dual use wet weather treatment infrastructure. A draft outfall transfer agreement has been prepared separately for both City Council and AlexRenew's Board for consideration.

FISCAL IMPACT: The planning level capital cost (i.e., early, but not yet engineered cost estimates) for the LTCPU is estimated to be \$356 million. The cost estimates are preliminary based on conceptual level planning, and could possibly be as high as an additional 50%. It is anticipated that this infrastructure will be financed through AlexRenew through their sanitary sewer rates. It is estimated that the average household sanitary sewer bill will increase by approximately \$20 to \$30 per month over the implementation period compared to the current average sanitary sewer bill of approximately \$50 per month.

ATTACHMENTS:

Attachment 1 - Combined Sewer System Long Term Control Plan Update

(Complete technical information and background exhibits for attachment 1 are available on the Clean Waterways page of the City website, [here](#)

[http://ebsswebprd/GSLinkhttps://www.alexandriava.gov/uploadedFiles/tes/info/LTCPU%](http://ebsswebprd/GSLinkhttps://www.alexandriava.gov/uploadedFiles/tes/info/LTCPU%20Long%20Term%20Control%20Plan%20Update.pdf)

.)

Attachment 2 - Memo from Ad Hoc CSS Plan Stakeholder Group to the City Manager

Attachment 3 - Presentation

STAFF:

Emily A. Baker, Deputy City Manager

Yon Lambert, Director, Transportation and Environmental Services

William Skrabak, Deputy Director, Transportation and Environmental Services

Lalit Sharma, Division Chief, Transportation and Environmental Services

Erin Bevis-Carver, Civil Engineer IV, Transportation and Environmental Services