Combined Sewer System and the Long Term Control Plan Update
Summary of Questions, Comments, and Reponses
Phase 1 Meeting – February 5, 2015

The City of Alexandria hosted a Public Meeting on February 5, 2015 from 7:00 pm to 9:00 pm to discuss the City's Combined Sewer System, present potential CSO Control Strategies, present the City's evaluation criteria, and solicit feedback from the community. Below is a summary of the questions, comments and responses from the public meeting that were received orally.

#	Oral Question/Comment	City Response
1	Will the presentation be online?	Yes.
2	Besides Hunting Creek, will there be other Water Quality Benefits? In the Potomac River, Waterfront? Will it address CSO 001? It should.	The TMDL regulatory requirement is specifically for Hooffs Run and Hunting Creek. Hunting Creek is a tributary of the Potomac River. The TMDL regulatory requirement is specifically for CSOs 002, 003, and 004; however, the City is including CSO 001 in the comprehensive planning. Additionally, any future controls at CSOs 002, 003 and 004 cannot lead to additional overflows at CSO 001.
3	What amount of rain can cause an overflow?	It depends on the recent weather history. If there have been preceding storms and the ground is saturated, as little as 0.10" of rain will cause an overflow. If the preceding days have been dry, then the system can accommodate some additional rain without an overflow.
4	The original Long Term Control Plan report was completed in 1999; what has been done since 1999?	Since the original Long Term Control Plan for the City of Alexandria was established in 1999, select combined sewer overflow mitigation efforts have been implemented in the City's combined sewer system in accordance with EPA's Nine Minimum Controls. New structures that more effectively convey flow to the treatment plant have been installed. Maintenance and repairs have been performed to ensure that it is operating effectively, and portions of the combined sewer area been separated. The City's Area Reduction Plan, or "ARP", has been implemented for nearly 10 years helping to separate more than 13 acres from the combined sewer system. The ARP has required all redevelopment projects within the CSS to separate the combined sewers serving the property or to pay into a fund that will be used for City-led sewer separation projects. The City plans to complete the Payne and Fayette Sewer Separation project in 2015, which will separate 90 properties from the combined sewer system.

#	Oral Question/Comment	City Response
5	What is the Bacteria? E. Coli?	Yes, the bacteria is E. Coli. In addition to the City's combined sewer system, other sources of bacteria in Hunting Creek include: wildlife and pets from stormwater runoff. AlexRenew (the wastewater plant) contributes a small amount of bacteria, but only after it has been through a very high level of treatment.
6	What is the penalty for not meeting the regulatory requirements?	[The City intends to meet the requirements]; however, if they are not met, the City could face a Consent Order from EPA or ultimately significant financial penalties, as much as several thousand dollars per day.
7	Legally, when is the soonest you have to start reducing the amount of sewage into the water system?	We have permit requirements to remove 5 million gallons of stormwater (or bacteria equivalent) per year by the end of the current permit in 2018.
8	How is flow monitored and/or measured in the combined sewer system? How frequently?	The City uses a calibrated model to estimate flows in the combined sewer system. When the model was originally set up, the City completed extensive flow monitoring and bacteria sampling, and along with rainfall data, to develop and calibrate the model. In the previous permit (2007 – 2013), the City completed flow monitoring and bacteria sampling a single outfall each year, rotating through all the outfalls. In the current permit (2013-2018), the City collects and analyzes a sample during a rain event for a single outfall on a quarterly basis. The outfall to be sampled changes each year.
9	For 99% and 80% reduction, what measurements are employed? Are they continuous or automatic?	It is not continuous monitoring. The monitoring episodes were rotated over the years, which helped us develop a model that we currently use to model the CSO system. Future infrastructure improvements will be evaluated through additional monitoring once they are in place and by updating the model to account for the improvements.
10	As construction progresses, how does it affect monitoring?	There will be direct monitoring of any flows diverted to AlexRenew.
11	I'm confused by your terminology. Outfall Relocation is not a technology.	[We will further explain the Outfall Relocation strategy later in the presentation, see question 15]. The outfall relocation consists of storage to store most of the combined sewer flow, but also redirects the outfalls directly to the Potomac River.
12	How big is 17 acres? How many City blocks?	7 – 8 City blocks. This question was asked referring to sewer separation and approximately how much disturbance there would need to be at any given time in order to completely separate the system by 2035.

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13	Is the sewer system going to last? Are you expecting any failures?	Under the existing permit, we are required to maintain and operate the current system. There have been significant investments in evaluating the system. The technology to rehabilitate the pipes would be less disruptive than new sewer separation system.
14	Will there be a need to increase the capacity at the Wastewater Treatment Plant (AlexRenew)?	The City is working closely with AlexRenew on the CSO controls strategies. Since many of the strategies involve storing the flow during a wet weather event and then sending it to AlexRenew after the wet weather event when capacity is available, an increase of capacity at AlexRenew is not anticipated due to the combined sewer improvements.
15	Moving outfalls – would you store and treat or store and release the wastewater?	It would be a combination of both. The tunnel would end up being longer, and therefore store more flow and would presumably overflow less. The challenge there would be that building a bigger tunnel would mean more easement issues. But this method has been done before in Richmond, VA.
16	Could the cost of the separation be shared with other utilities? For example provide new power, cable, water line, etc., concurrent with the sewer separation.	Based on past experience, it is unlikely the private utilities would share in the cost of the sewer separation projects. It would also add complexity and extend the schedule.
17	What is the timeline for determining the cost?	The City will be developing the costs in the coming months. Along with the other evaluation criteria, the City is narrowing CSO Control Strategies to a short list of 2 or 3 project alternatives. These will be presented at Public Meeting in May or June of 2015.
18	Operation and Maintenance Costs, and Cost Avoidances should be included.	Concur.
19	Green Infrastructure has lots of benefits; I hope it gets a hard look.	Agree. Green Infrastructure will be evaluated.
20	How much improvement/reduction in stormwater could you achieve by requiring more permeable and new construction? Or is it a minor factor?	It's not a minor factor. Currently, new construction is going on in the city and we're analyzing this to see what benefits there are. We will have more information when we get to the shortlist of potential strategies. Based on current understanding, green infrastructure doesn't remove source of bacteria, just reduces the stormwater component, which helps reduce the volume of overflows. The bacteria source is still in the mix.

#	Oral Question/Comment	City Response
21	I am concerned about the timeline – I hope the City will not pass the buck.	In addition to the City's commitment to address this issue, the Long Term Control Plan Update will include an implementation plan (schedule). It is anticipated the Virginia Department of Quality (VDEQ) will include milestones in the City's discharge permits, renewed on a 5 year basis, to achieve these milestones.
22	Is the City considering bonds to fund the projects?	Yes, bonds will likely be part of the funding strategy.
23	Is the City looking at trash traps?	Potentially. For store and treat options, more flow will be sent to the Wastewater Treatment Plant, which will remove the floatable trash. As part of the nine minimum controls, the City already has a robust street sweeping program in the Combined Sewer Area. Additionally, bar screens have been installed on the Royal Street Outfall (CSO 002) to capture floatables before they enter the Hunting Creek embayment.
24	How are the combined sewer control team and the waterfront flood prevention measures team coordinating information and efforts? [Question also received in writing].	The City's Department of Transportation and Environmental Services, responsible for developing the Long Term Control Plan Update is coordinating with the City's Department of Project Implementation, who is responsible for initiatives under the Waterfront Plan including flood control measures through correspondence and meetings. It should be noted that the areas where the proposed flood protection is located is outside the combined sewer area.

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Below is a summary of the questions, comments and responses from the public meeting that were received in writing.

#	Written Question/Comment	City Response
1	The Friends of Dyke Marsh are on record that planning for complete elimination of sanitary sewage discharges into the Potomac River until 2035 is too long a timeframe. As the sewers project advances, can we expect to see at least some improvement in the amount of raw sewage Alexandria combined sewers regularly discharge into the River?	The current permit states that the Long Term Control Plan Update must demonstrate compliance with the Hunting Creek Bacteria Total Maximum Daily Load (TMDL) no later than 2035. However, the schedule for implementing future infrastructure improvements to mitigate the impact of combined sewer discharges is yet to be determined and a schedule will be proposed in the Long Term Control Plan Update with the recommended plan. The schedule will be based upon the complexity of the recommended plan. In addition, the City is required, as part of its current permit (between now and 2018), to implement a number of projects to improve water quality including: - Construct outfall improvements at CSO 003 (completed in 2014) and 004, which serve Hooffs Run - Remove a minimum of 60 sanitary sewer laterals from the combined sewer system by connecting them to a separate sanitary sewer for full treatment at the Alexandria Renew Enterprises wastewater treatment facility - Study and promote green infrastructure projects - Require water quality improvements (typically through sewer separation) for areas that redevelop in the combined sewer area
2	The Friends group is also concerned about trash, the solid and floatable materials that are washed into the Potomac from our storm sewers, much of what ends up landing in Dyke Marsh. What kind of entrapment and baffling devices are planned to reduce or remedy that problem?	The City does have a number of programs aimed at reducing solids and floatables from the waterways, including a catch basin and street sweeping program. A number of the combined sewer strategies being evaluated also have the benefit of reducing solids and floatables, and this will be considered as part of the alternatives analysis.

#	Written Question/Comment	City Response
3	In the document released last month entitled "Combined Sewer System Long Term Control Plan Update", the City's goal is stated to be eliminating between 80% and 99% of the combined sewer overflow being discharged from Hunting Creek. This is a 20% range. Why so large?	The range represents different levels of control from different combined sewer outfalls that, combined with reductions in bacteria from other sources (wildlife, pets, etc.) will result in achievement of the water quality goals for Hunting Creek. Specifically, the Hunting Creek Bacteria TMDL calls for: - 80% reduction in bacteria discharged from CSO 002 (Hunting Creek) - 99% reduction in bacteria discharged from CSO 003 (Hooffs Run) - 99% reduction in bacteria discharged from CSO 004 (Hooffs Run)
4	A representative of Alexandria Renew has told our Friends group that the facility returns water to the Potomac that is 100% pure. Should that not be the goal for the City has well?	The Alexandria Renew facility is a state of the art wastewater treatment facility that provides a very high level of treatment before discharge. Even if City were to eliminate its combined sewer system, there are a number of pollutants in stormwater runoff and discharges including bacteria (pets and wildlife), nutrients, sediments and oil/grease. Stormwater discharges are not treated at a facility like Alexandria Renew. Under the Virginia Stormwater Management Program permit regulations, the City has developed appropriate and effective best management practices to control stormwater pollution to the maximum extent practicable. The City is also developing an action plan that will detail how the City will meet the Chesapeake Bay regulations for reducing total nitrogen, phosphorous a sediment from stormwater runoff.

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5	The price tag given in the January document on the improvements ranges from $150 million to $300 million. That seems to be an unusually wide gap even for planning purposes. Why such a range?	The reason for the wide range is because the City is evaluating a number of different combined sewer control strategies, including storage tunnels, storage tanks, sewer separation, green infrastructure, disinfection and storage/outfall relocation, along with a combination of strategies. Once the evaluation is completed and a short list of alternatives is developed for further review, the planning level estimate of cost will be refined further and presented. This short list is anticipated to be completed by May-June 2015. This refinement will continue to take place and cost estimates updated until a recommended plan is finalized and submitted as part of the Long Term Control Plan Update.
6	Please relate the cost of the sewer improvements vis a vis the level of water "purity" to be achieved. How much in relative terms does it cost to reach 99% or 100% as against 80% purity. Have you done cost-benefit studies? If so, what do they tell you?	As stated in the EPA's Combined Sewer Control Policy, long term control plans for combined sewer systems "should include an analysis to determine where the increment of pollution reduction achieved in the receiving water diminishes compared to the increased costs. This analysis, often known as knee of the curve, should be among the considerations used to help guide the selection of controls." The Long Term Control Plan Update will include a cost-benefit analysis and will include costs relative to different levels of combined sewer overflow control.
7	When will the first "annual report" required by the state permit be completed and available on the City's website? What timeframe will it cover?	The Combined Sewer System (CSS) Annual Report has been a permit requirement over multiple permit cycles and has been submitted to the state over the past 19 years. The CSS Annual Report is submitted to the Virginia Department of Environmental Quality (VDEQ) by March 31st of each year and includes a summary of operation and maintenance activities in the CSS, monitoring and modeling results, and addresses other permit requirements. The Annual Report for calendar year 2013 is on the City's website at alexandriava.gov/sewers. Once VDEQ approves the Annual Report for calendar year 2014, it will be posted on the City's website.