



March 10, 2021

Honorable Mayor Justin Wilson and City Council Members
Alexandria City Hall
301 King Street
Alexandria, VA 22314

Subject: Taylor Run Stream Restoration and Natural Channel Design

On behalf of the Environmental Policy Commission (EPC), we are writing to express our opposition to the proposed usage of Natural Channel Design (NCD) for the Taylor Run Stream Restoration Project. The EPC does not believe the potential risk of not obtaining full compliance with its MS4 permit requirements by 2028 is outweighed by the costs of this project, its ecological damage and the likelihood that much of the pollution credits may not last beyond five years. We are concerned that many questions about the current approach as well as the exploration of better alternatives remain unanswered or unassessed.

Briefly, the Taylor Run Stream Restoration project “involves the restoration of approximately 1,900 linear feet of stream near the Chinquapin Recreation Center and along the walking path in Chinquapin Park and Forest Park.”¹ Erosion, downcutting, and widening along the streambed threatens the stability of infrastructure (i.e., two sanitary sewer crossings and five storm sewer outfalls) located on the property.² Additional documentation about the stream restoration is available on the City’s website.³

The EPC’s reasons for opposition are similar to what many Alexandria residents have also stated: That the proposed restoration method will degrade – not improve – the physical, chemical, and biological features of the stream and the adjacent natural resources (e.g., forested area, acidic seep and other wetlands). These concerns have been expressed in public meetings, community comments, and presentations to the EPC and other written documents.⁴ These concerns, which are shared by **all** members of the EPC, can be categorized into three main areas: 1) the overall benefit to the community now and in the future, 2) the project’s main objectives, and 3) the selected restoration method (i.e., Natural Channel Design). Because these issues are multifaceted, we highlight what we believe are the most contentious topics below.

1. **Sustainability:** There are concerns around the sustainability of the engineered stream under increasingly severe storm conditions resulting in a larger volume of stormwater runoff and area flooding. The selected restoration design (i.e., NCD) is designed to sustain a 10-year storm event, meanwhile, the City’s own T&ES leadership reports that Alexandria

¹ Information about the Taylor Run Restoration project is available at <https://www.alexandriava.gov/tes/stormwater/info/default.aspx?id=117629>.

² [Phase III Stream Assessment](#): Stream Restoration and Outfall Stabilization Feasibility Study (Feb 2019)

³ <https://www.alexandriava.gov/tes/stormwater/info/default.aspx?id=117629#StreamRestorationDetails>

⁴ TaylorRunResponse12042020.pdf ([link](#))

is experiencing multiple 100-year storm events annually.⁵ If the proposed construction fails, neighborhoods/residents may be negatively impacted, especially given the wastewater infrastructure nearby, and the City will have to explain to citizens why this method was chosen when multiple examples of failed similar NCD exist within the National Capital Region.⁶ The City does not appear to have investigated and evaluated other less invasive alternatives to protect the sanitary sewer line. Also, a failure would result in the loss of pollution credits for Taylor Run during the next five year cycle. The City would then be required to either repeat the process and its cost or find other ways to earn pollution credits.

2. **“Pollution Diet”:** The City claims that the stream restoration will reduce pollution (i.e., total phosphorus (TP), total nitrogen (TN), and total suspended sediment (TSS)) to the Chesapeake Bay. However, it is unclear if the Taylor Run stream is a significant pollution source since no pollution data has been collected by City staff from the site. Instead, the City has chosen to use the BANCS method to estimate phosphorus pollution reduction. There is concern that these phosphorus estimates are inflated because the model is not validated using site-specific data. If the phosphorous reduction levels are inflated, then the City should not be taking credit for them and instead direct its resources towards identifying and reducing phosphorous and other nutrient pollutants (i.e., TN and TSS) in a more legitimate and impactful area. Also, since the City is already ahead of its required goal to reduce pollution in the Bay (at 67% or above for all 3 types of pollution listed above vs. the state requirement of 40% by 2023), the City has the time to explore other methods to reduce pollution and meet its TMDL requirements.⁷ Lastly, much of the Taylor Run pollution credits may only last five years. This is due to the fact that credits last 5 years and then require reapplication. Given that DEQ has recently changed its methodology to assess pollution levels requiring site specific data, when the City reapplies for credits in five years and the pollution levels are much less as suggested, it is likely the amount of credits accepted by DEQ will be less.⁸
3. **Selected Restoration Method:** The selected method of restoration is the Natural Channel Design (NCD). This method creates an engineered stream system, and the result may not reflect a natural system with functional biological uplift for many years, if ever.⁹ This approach will alter the current landscape by adding 8-10 feet of fill to raise the stream bed and reduce the slope of the stream bank. There is also considerable concern that these landscape changes will alter the site’s hydrology and threaten rare ecotones (i.e., acidic seep wetland and species located in the adjacent area). Furthermore, this method will negatively impact the current biodiversity in and around the streambed. Preserving the natural flora and fauna – from the soil microorganisms to the macroorganisms – should be a stated, prioritized objective, as biodiversity loss is one of the top global environmental crises of our time, along with climate change.¹⁰ Ongoing research is trying to resolve the mixed evidence on whether NCD projects enhance or adversely impact biodiversity.¹¹

⁵ William Skrabak, T&ES Deputy Director of Infrastructure and Environmental Quality report on flooding at the 12/14/20 virtual meeting of the EPC: https://www.alexandriava.gov/uploadedFiles/tes/oeq/info/Minutes_12-14-20-Draft.pdf

⁶ Alexandria’s own Strawberry Run done in 2010 and Donaldson Run in Arlington.

⁷ Phase 2 Chesapeake Bay Total Maximum Daily Load (TMDL) Action Plan for 40% Compliance dated 8/24/2019

⁸ https://chesapeakestormwater.net/wp-content/uploads/dlm_uploads/2020/03/PROTOCOL-1-MEMO_WQGIT-Approved_revised-2.27.20_clean_w-appendices.pdf

⁹ See <https://stream-mechanics.com/stream-functions-pyramid-framework/>

¹⁰ <https://www.un.org/sustainabledevelopment/blog/2019/05/nature-decline-unprecedented-report/>

¹¹ https://www.bayjournal.com/news/pollution/stream-restoration-techniques-draw-pushback/article_ffc96960-0895-11eb-b36f-efa466158524.html

Lastly, given the soon-to-be-implemented changes outlined by the state DEQ referenced above, it appears NCD may no longer be approved as designed if it came before them today for the reasons outlined above, thus also leading to the reduction of pollution credits during the next five year cycle.¹²

The City has done a good job engaging with the community through numerous public outreach events, and we applaud the time and dedication of T&ES staff in meeting with community, the EPC and civic groups and making efforts to try to resolve concerns. However, we do not believe the City has adequately addressed the cost and benefits over the long run of this project.

For all these reasons, the EPC does not support the NCD for the Taylor Run Stream Restoration project in its current approach. We believe the City needs to step back and address unanswered questions before proceeding with a project that would irreversibly impact Chinguapin Park for several decades at least. The City should demonstrate a good faith effort to explore all possible alternatives with better long lasting results with the EPC and the community before the City selects a contractor and moves forward with its plan. The City may need to forego the current grant funding unless it can be applied to alternative actions that are less ecologically destructive and technically questionable while the City determines the best path forward for addressing the stream channel.

As others have suggested, we ask the City to revise the scope of the proposed restoration project and recommend the following actions: (1) protect the City's infrastructure, including addressing the exposed sewer line and the potential threat to water quality if damaged by the least ecologically destructive method; (2) address streambank erosion at Taylor Run by mitigating upstream stormwater runoff and flooding issues and/or using other less ecologically destructive methods; (3) allow time to learn from more ongoing studies of NCD projects and reviews of completed urban stream restoration projects in Bay communities before starting any in Alexandria;¹³ (4) address whether this section of stream is contributing enough pollution of TN, TP, and TSS to the Potomac River and the Chesapeake Bay (including taking onsite samples) to justify the costs of this project, and (5) explore other, better alternatives to reach the City's required 100% pollution credits due in 2028.

The EPC looks forward to exploring with City staff solutions to meet Alexandria's remaining TMDL requirements, reduce erosion along its urban streams, identify alternative restoration methods, and preserve and protect the rare biodiversity found in our remaining prized open spaces. We have scheduled a meeting with City staff on March 15th to explore multiple very promising alternative suggestions including obtaining credits from permit holders who hold extra credits, earning credits from present and future school rebuilding projects (Minnie Howard campus and others), adding anticipating credits from the redevelopment of Landmark Mall, as well as tree planting or obtaining pollution credits on the open market.

We thank you for your time and consideration.

Sincerely,

Kathie Hoekstra

Kathie Hoekstra
Chair of Alexandria's Environmental Policy Commission

¹² See footnote 8 above

¹³ See footnote 6 above