

ENVIRONMENT AND ENERGY CONSERVATION COMMISSION
c/o Department of Environmental Services
2100 Clarendon Blvd., Suite 705
Arlington, VA 22201

June 20, 2018

The Honorable Katie Cristol, Chair
Arlington County Board
2100 Clarendon Blvd.
Arlington, VA 22201

RE: Solids Master Plan

Dear Chair Cristol:

The Environment and Energy Conservation Commission (E2C2) is pleased to submit these comments on Arlington County's Solids Master Plan (Plan). The Plan is intended to provide for the modernization of facilities at the Water Pollution Control Plant (Plant) for the treatment of solids generated during the waste water reclamation process. The facilities recommended by the Plan will replace and upgrade aging equipment, improve waste management, promote energy reduction, and enhance resource recovery.

E2C2 expresses its appreciation to the Plant staff for establishing a robust and open process for communicating with the public. Beginning in late 2015 and continuing until March 2018, E2C2 and a host of other parties participated in the County's External Communications Stakeholder Group. The Stakeholder Group was established to ensure that nearby residents, interested Civic Associations, the Civic Federation, Arlingtonians for a Clean Environment (now EcoAction Arlington) and selected Commissions were informed of the Plan's goals, the methodology for evaluating competing technologies, and tentative staff recommendations. During the course of their deliberations, members of the Stakeholder Group raised a number of questions and concerns about environmental, social, and financial issues. County staff were invariably courteous, informative, and open in answering Stakeholder Group questions and addressing concerns.

As discussed more fully below, E2C2 supports the staff's recommendation that the design and implementation of a modern solids treatment system should, where possible (1) reduce the energy and greenhouse gas footprint of the plant, (2) generate a Class A biosolids product that is suitable for widespread beneficial use, and (3) minimize direct impacts on the community, in particular, the Plant's closest neighbors. **E2C2 believes that the approach recommended in the Plan — thermal hydrolysis pretreatment (THP) with anaerobic digestion — will best achieve these objectives. However, we also draw attention to air quality impacts and regional solids management considerations that should remain priority issues as planning efforts continue.**

Discussion: As part of its evaluation of potential solids management technologies, County staff developed a methodology that considered economic, operational, environmental, and social factors. E2C2 provided interim comments on the environmental factors and strongly supported the selection of an alternative with resource recovery potential as well as energy savings. E2C2 sought to ensure that the chosen alternative would further the objectives of Arlington's Community Energy Plan and, if possible, also promote the generation of biosolids that could be beneficially reused.

The recommended alternative, THP with anaerobic digestion, received the highest score for environmental factors among all the alternatives examined. If implemented as proposed, the process will create a Class A biosolids product that can be distributed widely to the general public, other County departments, and commercial entities. The Class B biosolids product currently being produced by the Plant — which would continue to be produced by some of the other treatment technologies considered — is not treated as fully for pathogen reduction and thus is more strictly controlled by regulators. Many modern solids treatment facilities, including plants located in Alexandria, the District of Columbia, and Prince George’s County, currently generate Class A biosolids because of their greater flexibility in sale and ultimate use, and reduced risk of future regulatory restrictions.

The recommended alternative will also generate substantial quantities of biogas for potential reuse. County staff have identified a number of potential reuse opportunities, including on-site combustion for heat and power; local use of cleaned biogas as compressed natural gas fuel for Arlington Transit (ART) buses; or pipeline injection of biomethane produced following further cleaning of the biogas. Any or all of these uses of biogas would help to further the sustainability goals set forth in Arlington’s Community Energy Plan.

Two issues were of particular interest to the Stakeholder Group and merit some additional comment below:

1. Air emissions: One important element of the recommended alternative is the beneficial use of biogas. Civic and neighborhood groups, in particular, raised concerns that on-site treatment/storage of biogas may contribute to increased air pollution. Residential neighborhoods about the Plant and neighbors expressed concerns about potential increase in nuisance gas and odors. The County noted that all of the proposed new technologies would require a waste gas burner (flare) to control excess biogas produced by the digestion process and that an increase in air emissions was likely.

In response to Stakeholder Group concerns and to ensure compliance with its federal and state air permits, the County conducted an air dispersion modeling study to evaluate the air quality impacts under the preferred alternative. The study confirmed that biogas generation and use under some scenarios likely would increase air pollutants such as NO_x, carbon monoxide, sulfur dioxide and particulates. Dispersion modeling with currently available pollution control equipment, however, projected that biogas generation would not significantly impair the air quality in the vicinity of the Plant and would be fully protective of the health of sensitive populations bordering the Plant.

Moreover, although modeling did predict an overall increase in point source air pollutants (depending on the reuse scenario chosen), staff also indicated that the recommended new technology would further the goals of the Community Energy Plan. All approaches (except for lime stabilization) would result in many fewer truck trips to haul biosolids, because the quantity of biosolids following advanced treatment would be considerably less than currently generated. Accordingly, the new technology will result in significantly lower transportation-related air emissions. In addition, the generation and reuse of biogas would reduce significantly the quantity of fossil fuels that otherwise would be purchased and consumed to power the plant, or to fuel Arlington’s buses. For all of these reasons, the new solids treatment technologies proposed to date will assist the County in achieving the ambitious sustainability and greenhouse gas reduction goals of the Community Energy Plan.

While the air dispersion modeling study did not directly address ozone levels, the Washington Metropolitan area is currently a non-attainment area for ozone standard with an attainment deadline of 2021. E2C2 is concerned that many of the proposed biogas reuse scenarios result in projected increases in NO_x, an ozone precursor, and may hinder progress toward achieving attainment status.

Despite the important sustainability goals promoted by the recommended approach, E2C2 believes that, in light of the projected increase in some priority pollutants, the proximity of residential neighborhoods, and the preliminary nature of the planning, the issue of air pollution will require additional attention as the Plan moves into the implementation stage. If the County decides to move forward with the recommended technology, the County should — as a part of its preliminary design — develop a more detailed biogas utilization study including a careful review of potential air emissions and control technologies. We understand, from staff, that such a review will in fact occur during the design stage.

2. Regional Solids Management: Members of the Stakeholders Group raised, at various times during Group deliberations, the potential that the County might explore a regional solution to solids management. Under a regional approach, untreated solids would be transported from the Plant to D.C. Water or Fairfax County or another potential regional partner for final treatment. Members pointed out that use of a regional facility could save County taxpayers tens of millions of dollars in capital costs, promote area-wide efficiencies of scale, and avoid the significant operational challenges presented when changing solids processing in an operating facility.

Off-site regional solutions were not evaluated as part of the formal decision-making process that yielded the top-ranked alternatives and no discussion or exploration of this issue occurred during Stakeholder Group meetings. Staff have advised the Stakeholder Group, however, that a regional partnership remains an option for the County. Both D.C. Water (Blue Plains Advanced Wastewater Treatment Plant) and Fairfax County had, at one time, indicated that they possessed excess solids treatment capacity and were positioned to accept Arlington's partially de-watered solids. Staff have advised us that subsequent discussions have been less fruitful, however, and that logistical and capacity issues remain obstacles.

As we understand the staff's current position, no regional opportunity has yet emerged but the potential for partnerships will be revisited during the next phase of the project. E2C2 takes no position on whether a regional solution is feasible or sensible for Arlington County. It does continue to believe — as the County apparently does — that the regional approach should be subject to the kind of careful and detailed study that has characterized its examination of on-site alternative technologies.

Conclusion: The Commission supports the County staff's recommendation for upgrading its solids management process by employing THP with anaerobic digestion. E2C2 also supports the County's plan to continue looking into the feasibility of a regional approach to solids management.

Thank you for giving us the opportunity to provide comments. We look forward to working with you as the Master Plan is implemented over the next decade.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Michael Mesmer', with a stylized flourish extending to the right.

Michael Mesmer, Chair
Environment and Energy Conservation Commission