

Town of Vienna Environmental Professional Services

Northside Property Yard Stormwater Design Improvements Conceptual Report

March 23, 2016

Submitted by David Bulova
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Scope of Work

OVERVIEW

Amec Foster Wheeler Environment & Infrastructure (Amec Foster Wheeler) has been requested by the Town of Vienna (Town) to assist with the development of conceptual stormwater control and general pollution prevention improvements at the Northside Property Yard (facility or site). The scope of work included below will result in a plan for potential improvements to the site, which can then be shared with interested parties by the Town to facilitate feedback and discussion.

The Northside Property Yard is located at 600 Mill Street, NE and is adjacent to Northside Park. The site is approximately 9.24 acres in size and is covered predominantly with impervious surfaces (i.e. buildings, sheds, and pavement). The facility contains office buildings, a salt storage building, an indoor vehicle and equipment wash facility, parking areas for employees and maintenance vehicles, equipment and material stockpile areas, and a fueling island.

The project involves the development of a schematic conceptual design and associated report for five areas/activities at the site:

- Salt loading and unloading activities that occur in front of the existing salt dome;
- Existing deicer/anti-icer stored in three 3,000 gallon above ground storage tanks without secondary containment;
- Uncontrolled runoff from the existing material stockpile area on the southern portion of the site;
- Equipment and parts storage lacking overhead cover or other protection from precipitation; and,

- The potential to increase or introduce a vegetated buffer between the site and Piney Branch, primarily on the southern portion of the site.

For each area, Amec Foster Wheeler will identify alternative stormwater control and/or pollution prevention measures that have the potential to reduce contaminant loading to stormwater runoff due to exposed materials and equipment storage, salinity from the salt storage areas, and other contaminants normally associated with maintenance yards/high risk sites. Identified measures will be recommended based on their effectiveness in reducing concentrations of these contaminants. Amec Foster Wheeler will take into consideration Phase II and Phase III expansion plans for the site as noted on the *Northside Public Works Facility Construction Plans*, developed by TRI-TEK Engineering, dated March 21, 2000.

SCOPE OF WORK

Task 1: Kick-Off Meeting and Data Collection

A kickoff meeting will be conducted at the Town office to discuss the project schedule and work plan promptly following written notice-to-proceed. Prior to the meeting, Amec Foster Wheeler will make a request for information from the Town to be used in Task 2. Any requested information that is not provided at the meeting will be provided following the meeting as soon as practical.

Data to be provided by the Town may include, but is not limited to:

- Any available existing topography
- Existing utility information (storm sewer, etc.)
- Existing hydrologic and hydraulic data
- Soil and geological data (existing geotechnical data)
- Zoning, property and right of way maps including easement plats
- Stormwater controls (existing inventory and planned)
- Water quality data
- Aboveground storage tank (AST) information (dimensions, capacity, weight (full and empty), potential anchorage points)
- Containment wall requirements
- Existing storage shed information, dimensions, etc.

Amec Foster Wheeler will also collect available information from the Town, Fairfax County, and the Virginia Department of Environmental Quality (DEQ) on watershed conditions upstream and downstream of the site.

Proposed Phase II and Phase III plans for expansion of the facility will be discussed. This discussion will focus on aspects of the plans that the Town may wish to deviate from, and how the measures being prescribed as part of this scope of work should be incorporated.

Task 2: Site Assessment

Amec Foster Wheeler will conduct a hydrologic (Rational Method) analysis of existing conditions to establish a basis for evaluating alternative stormwater control concepts and to identify potential deficiencies in the outfall conveyance system. The analysis will be provided to the Town for review electronically. Amec Foster Wheeler will finalize the analysis based on the Town's comments.

Amec Foster Wheeler will then perform an initial desktop site assessment utilizing the hydrologic analysis and information collected in Task 1. The assessment will focus on the following potential improvements in the previously identified five areas/activities:

- Repair of the apron and improved drainage in front of the existing salt dome to provide containment for salt contaminated runoff to prevent it from entering the drainage system and adjacent stream.
- Constructing a concrete secondary containment structure for three existing ASTs currently containing magnesium chloride. The structure should be large enough to include an additional AST, similar in size to the existing ASTs, as well as salt brine making equipment. Options may include relocation of the ASTs.
- Installation of a covered outdoor storage area in the southern portion of the site to house parts and equipment.
- Installation of a stormwater quality control facility in the vicinity of the material storage area to contain and treat runoff from the area prior to discharge to Piney Branch.
- Installation/enhancement of a vegetated buffer area at the southern portion of the property adjacent to Piney Branch to provide a setback from the stream and an added water quality benefit.

Once the desk top assessment is complete, Amec Foster Wheeler will schedule a site visit with the Town. During the site visit, the Town will provide feedback to Amec Foster Wheeler on the desktop assessment and Amec Foster Wheeler will gather additional information about site-specific constraints and limitations for use in the development of the conceptual schematic design in Task 3.

Task 3: Draft Conceptual Schematic Design

Amec Foster Wheeler will develop schematic conceptual designs for the five areas of improvement listed in Task 2. Schematic drawings (24 x 36) will show 1"=30' scale plan view sketches and typical cross-sections and details. Applicable details from the TRI-TEK Engineering plans for the facility will be digitized and included as needed. Amec

Foster Wheeler will also develop planning level cost estimates and assess the pollutant reduction likely to be achieved through implementation of controls or best management practices. Pollutant reductions will be described qualitatively, as applicable.

A meeting will be conducted to review the draft designs with the Town. During the meeting, Amec Foster Wheeler and Town staff will discuss the concepts and changes, if necessary.

Task 4: Conceptual Schematic Design Report with Recommendations

Based on the meeting in Task 3, Amec Foster Wheeler will make changes to the draft schematic conceptual designs and assemble a Northside Property Yard Stormwater Design Improvements Conceptual Report. The report will describe the project methodology and contain recommendations, results, backup data, analyses, and drawings. The draft report will be submitted to the Town electronically for review. The Town will be responsible for submitting consolidated comments back to Amec Foster Wheeler. Amec Foster Wheeler will then make changes and submit a final report to the Town. Three hard copies and one electronic copy (PDF) of the final report will be submitted to the Town.

ASSUMPTIONS

The following assumptions are represented in this scope of work:

- Existing conditions/best available GIS data will be used for the schematic design, report, and hydrologic analyses.
- All soil data (depth to water table, bearing strength of soil, percolation, etc.) will be based on the best available information currently available at this time. If the design is to proceed to 30%, Amec Foster Wheeler recommends full topographic survey of site conditions, existing utility locations, soils borings and a geotechnical analysis.
- The proposed schedule assumes that Amec Foster Wheeler will have access to the project site and that any coordination necessary to obtain permission to access the site will be handled by the Town prior to commencing field activities.
- Amec Foster Wheeler anticipates that the project will be completed in approximately five months from notice-to-proceed.

COST

Amec Foster Wheeler will provide the above-detailed scope of work on a lump sum basis of \$39,257.

Task	Senior Planner Hershberger	Senior Engineer Burdubus	Senior Engineer Biggs	Project Manager Bulova	Junior Engineer Hepp	Technician Gibson	Expenses	Total Cost
Rates	\$ 136.21	\$ 145.66	\$ 145.66	\$ 169.31	\$ 92.69	\$ 72.27		
Task 1 - Kickoff Meeting and Data Collection	8	4	4	4	0	0	\$ -	\$ 2,932
								\$ -
Task 2 - Site Assessment	8	20	25	2	20	0	\$ -	\$ 9,837
H&H Analysis	1	4	4	1	12	0		\$ 2,583
Desktop Assessment	2	16	16	1	8	0		\$ 5,844
Site Visit	5	0	5	0	0	0		\$ 1,409
								\$ -
Task 3 - Draft Conceptual Schematic Design	8	24	26	6	40	64	\$ -	\$ 17,721
Draft Design	2	24	20	2	40	64		\$ 15,353
Meeting	6	0	6	4	0	0		\$ 2,368
								\$ -
Task 4 - Conceptual Schematic Design Report and Recommendations	24	4	24	4	8	0	\$ -	\$ 8,766
Total	48	52	79	16	68	64	0	\$ 39,257

ACKNOWLEDGEMENT

TOWN OF VIENNA, VIRGINIA

AMEC FOSTER WHEELER
ENVIRONMENT & INFRASTRUCTURE

By _____

By  _____

Name _____

Name David L. Bulova

Title _____

Title Senior Planner/Project Manager

Date _____

Date March 23, 2016

By  _____

Name Tucker Clevenger

Title Chantilly Water Resources Lead

Date March 23, 2016