

GENERAL PERMIT FOR SMALL MUNICIPAL SEPARATE STORM  
SEWER SYSTEMS

PERMIT NUMBER: VAR040053

Permit Year 2 Annual Report  
Reporting Period: July 1, 2019 - June 30, 2020



City of Winchester, Virginia  
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Winchester, VA 22601

October 1, 2020

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## 1.0 Background Information

### 1.1 Regulatory Requirement

In accordance with the requirements of Permit Number VAR040053, this Annual Report is hereby submitted in compliance with the City of Winchester General Permit for Small Municipal Separate Storm Sewer Systems (MS4). A link to the MS4 Program Plan and latest Annual Report can be found at:

- <https://www.winchesterva.gov/engineering/stormwater>

This Annual Report covers all information required by the permit as described in 9VAC25-890, but is not intended to fully describe all activities the City has performed, programs the City has implemented, or plans the City has made or is making. Not all of the permittee's activities are required to be reported; therefore, omissions of non-required information should not be taken as an indication that the City is not fulfilling those requirements.

## 2.0 Annual Reporting Requirements

### 2.1 Regulatory Requirement

The permittee, system name, and permit number as listed below:

**Permittee:** City of Winchester

**System Name:** General Permit for Small Municipal Separate Storm Sewer Systems

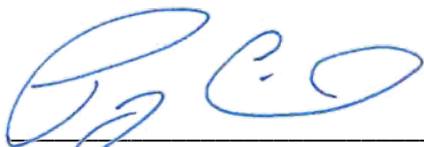
**Permit Number:** VAR040053

### 2.2 Reporting Period

This document serves as the Annual Report for Permit Year 2 of the 2018-2023 Virginia MS4 General Permit. The reporting period for which this annual report is being submitted is July 1<sup>st</sup>, 2019 to June 30<sup>th</sup>, 2020.

### 2.3 Signed Certification per Part III K

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.



Perry Eisenach, P.E.  
Public Services Director

9/29/2020

Date



## **2.4 Minimum Control Measures (MCMs) Reporting Items**

All applicable Minimum Control Measures (MCM) reporting items can be found in Sections 3.0-8.0 of this Annual Report. Supporting information for the MCMs can be found within the Appendix.

## **2.5 Evaluation of the MS4 Program Implementation**

Based on the current program results, the City is confident that the Minimum Control Measures (MCMs) being implemented are appropriate, effective, and meet the requirements of the 2018-2023 Virginia MS4 General Permit. As such, the City does not anticipate the need to make any changes to its MS4 Program at this time. The City will continue to monitor the status, appropriateness, and effectiveness of each MCM as part of our iterative process to reduce pollutant loadings and protect water quality.

## **2.6 Chesapeake Bay TMDL Special Condition Update**

An update of the Chesapeake Bay TMDL Special Condition as established under Part II A of the General Permit requirements can be found in Section 9.0.

## **2.7 Local TMDL Special Condition Update**

An update of the Local TMDL Special Condition as established under Part II B of the General Permit requirements can be found in Section 10.0.

## **3.0 Minimum Control Measure 1 – Public Education and Outreach**

### **3.1 High Priority Stormwater Issues**

The City addressed three high priority stormwater issues during the reporting period. The three high priority stormwater issues are the following:

- #1 – Reduce the amount of sediments and nutrients in local stormwater discharges.
- #2 – Reduce bacteria levels in City streams.
- #3 – Reduce the number of Illicit Discharges.

### **3.2 High Priority Stormwater Strategies**

The City used multiple strategies to educate the public on the high priority stormwater issues. These strategies varied in target audience and delivery method to maximize the outreach and education. The strategies utilized to address the high priority stormwater issues can be seen in Table 1 below. For more information about the individual public education and outreach events see Section 4.3.

**Table 1. High Priority Stormwater Strategies**

High Priority Stormwater Issue	Strategy Category	Public Education and Outreach
Reduce the amount of sediments and nutrients in local stormwater discharges	<ol style="list-style-type: none"> <li>1. Traditional Written Materials</li> <li>2. Signage</li> <li>3. Media Materials</li> <li>4. Curriculum Materials</li> </ol>	<ol style="list-style-type: none"> <li>1. City Publications</li> <li>2. Community Signage</li> <li>3. City Publications</li> <li>4. Watershed and Stormwater Education Opportunities Program</li> </ol>
Reduce bacteria levels in City Streams	<ol style="list-style-type: none"> <li>1. Traditional Written Materials</li> <li>2. Signage</li> <li>3. Media Materials</li> <li>4. Curriculum Materials</li> </ol>	<ol style="list-style-type: none"> <li>1. City Publications</li> <li>2. Community Signage</li> <li>3. City Publications</li> <li>4. Watershed and Stormwater Education Opportunities Program</li> </ol>
Reduce the number of illicit dischargers	<ol style="list-style-type: none"> <li>1. Traditional Written Materials</li> <li>2. Signage</li> <li>3. Media Materials</li> <li>4. Curriculum Materials</li> </ol>	<ol style="list-style-type: none"> <li>1. City Publications</li> <li>2. Community Signage</li> <li>3. City Publications</li> <li>4. Watershed and Stormwater Education Opportunities Program</li> </ol>

## 4.0 Minimum Control Measure 2 – Public Involvement and Participation

### 4.1 Summary of Public Input

During this reporting period, the City continued to advertise the Stormwater Complaint Hotline on its stormwater webpage, processed calls placed to the Stormwater Complaint Hotline, and facilitated distribution (via direct download) of the Stormwater Complaint Hotline Flyer. Public input and complaints are categorized into three sections: 1) Refer for maintenance by Public Works, 2) Large capital project suggestions, 3) Inter-property dispute, in which the City is not involved. Maintenance recommendations are evaluated and added to the Public Works’ schedule as necessary. Large capital project suggestions are noted and incorporated into future discussions when evaluating the City’s needs. Inter-property disputes are directed to the appropriate department or handled between the property owners, in the cases where the City has no jurisdiction on the matter. City staff was also available at the community events listed in Section 4.3 to allow for public input.

### 4.2 MS4 Program and Stormwater Website

The City of Winchester’s current MS4 Program Plan and previous Annual Reports dating back to 2014 are available for download at:

- <https://www.winchesterva.gov/engineering/stormwater>

This MS4 Annual Report and any revisions to the City’s MS4 Program Plan will be placed on-line within thirty (30) days of submission to DEQ.

### **4.3 Public Involvement Activities**

The City participates in multiple public involvement activities. These activities are intended to increase public knowledge and awareness about stormwater related issues within the City limits. The activities vary in type and are spread throughout the calendar year to ensure the maximum audience can be reached. Due to the COVID-19 crisis certain activities had to be canceled and were not able to be rescheduled.

#### City Publications

The City's webpage was used as the primary public education and outreach tool utilized for reaching the program's targeted audiences and providing for distribution of educational materials to convey the appropriate messages. Publications currently available for download from the City's Stormwater webpage during this reporting period included:

- Stormwater Complaint Hotline Flyer
- EPA's "After the Storm" Video Series
- "Pick it Up, It's Your Doodie" Pet Waste Brochure
- "Please Do Not Feed the Waterfowl" Wildlife Waste Brochure
- "How to Make Your Own Rain Barrel" Presentation
- 2018 - 2023 Municipal Separate Storm Sewer System (MS4) Program Plan
- MS4 Permit Years 1-5 Annual Reports from the 2014-2019 permit cycle.
- After the Storm Brochure - English
- After the Storm Brochure - Spanish
- SepticSmart: Septic Tank Maintenance – English
- SepticSmart: Septic Tank Maintenance - Spanish
- Make Your Home the Solution to Stormwater Pollution Brochure
- Kids Stormwater Stickers

In addition, the City uses its email newsletter, The Cit-E News, to announce and promote various activities throughout the year that have an impact on stormwater. Educational articles dealing with stormwater are also published in the newsletter. The Cit-E Newsletter currently has a total of one thousand five hundred and forty six (1,546) subscribers; however, many of the City's Facebook and Twitter posts direct readers to articles in the Cit-E Newsletter, so readership is much larger than just the subscriber list.

#### Community Signage

The City continued to promote picking up pet waste through the use of "Clean Up After Your Dog" signs placed at the Dog Park located in Jim Barnett Park. The number of registered dog owners with access to the Dog Park is not monitored due to the dog park being a public facility.

#### Watershed and Stormwater Education Opportunities Program

The City continued the Watershed and Stormwater Educational Opportunities Program as part of the City's formal program of stormwater education at schools within the City. The City's engineering staff

conducted the following school presentations regarding engineering and high priority water quality issues during the current reporting period:

- November 20, 2019 – Winchester STARBASE Academy – 50 students
- December 18, 2019 – Winchester STARBASE Academy – 35 students
- February 10, 2020 – Winchester STARBASE Academy – 50 students
- March 9, 2020 – Winchester STARBASE Academy – 50 students

Activities at the other schools were cancelled this program year due to COVID-19. The City looks to return to providing this program once health experts recommend it safe to do so. The City sees this as a critical event to community outreach as it provides a great opportunity for education.

#### Community Wellness Festival

The City participated in the Valley Health Community Wellness Festival on February 29, 2020. During this event, City Public Services educated the public on the effects of pollution on waterbodies. Roughly two hundred (200) people were given fliers pertaining to pollution.

#### Household Hazardous Waste Collection Days

The City continued to promote the Household Hazardous Waste Collection Days as one of its four local participation programs. These events were held on the first and third Wednesdays of each month from noon to 6 p.m. during the months of April through October. During the months of November, December, January, February and March, one event was held each month on the third Wednesday of the month.

#### Adopt-A-Stream Program/Spring Greening

Due to the ongoing COVID-19 crisis, the City had to cancel the Adopt-A-Stream Program/Spring Greening event. The program typically consists of volunteers walking a local stream system on City owned property while gathering and removing trash from the stream and adjacent area. The volunteers are solicited through various media and gather at a local park before heading out onto different stretches of Abrams Creek. The event is intended to highlight the importance of keeping the local stream systems pollution free.

### **4.4 Water Quality Metric and Evaluation**

The City selected four Public Involvement Opportunities to analyze further and determine their benefits and effectiveness. The City will track the metrics shown in Table 2 below to determine the success of these opportunities in the coming years. All Public Involvement Opportunities were found to have been beneficial to improving water quality. However, due to the ongoing COVID-19 crisis, the City had to cancel multiple public involvement events. The City was unable to plan other public events due to the unforeseen circumstances. Once additional information from health experts is available, the City plans on returning to its regular involvement in public involvement opportunities.

**Table 2. Public Involvement Opportunities**

Public Involvement Opportunity	Activity	Description	Metric	Benefit
Disposal or Collection Events	Household Hazardous Waste Collection Days	Provide household hazardous waste collection opportunities to resident. The events were held on the first and third Wednesdays of each month from noon to 6 p.m during the months of April Through October. During the months of November, December, January, February and March, the event was held once on the third Wednesday of the month.	<p><b>Household waste collected</b> – 6,794.5 tons</p> <p><b>Recycled Materials</b> – 2261.0 tons</p> <p><b>Recycling Bins Distributed</b> - 702</p>	Removed hazardous waste that could enter stormwater systems and dispose of them at approved location that is equipped to handle it
Pollution Prevention	Adopt-a-stream/ Spring Greening	CANCELLED DUE TO COVID-19		
Educational Events	Watershed and Stormwater Educational Opportunities Program	City engineering staff conducted presentations at schools and taught students about engineering practices and high priority water quality issues	<p><b>Number of schools attended</b> – 1</p> <p><b>Number of presentations given</b> – 7</p> <p><b>Number of students present</b> – 185</p>	Educated students on the importance of water quality
Educational Events	Valley Health Community Wellness Festival	An annual festival to encourage personal and community health. The event was held on February 29, 2019 from 10am – 4:00pm. City staff handed out flyers highlighting the effects of pollution on waterbodies.	<b>Flyers handed out</b> – 200	Educated the public on the effects of pollution on waterbodies.

**4.5 MS4 Permittees Collaboration**

The City did not collaborate with any other MS4 permittees during this permit cycle. The City currently does not have any plans to collaborate with other MS4 permittees but reserves the right to do so if a mutually beneficial opportunity arises.

## **5.0 Minimum Control Measure 3 – Illicit Discharge Detection and Elimination**

### **5.1 Confirmation Statement**

The City confirms that the MS4 map and information table have been updated to reflect any changes to the MS4 occurring on or before June 30 of this reporting year.

### **5.2 Outfalls Screened**

The City conducted dry weather screening on fifty-five (55) MS4 outfalls annually using procedures included in the Illicit Discharge Detection and Elimination (IDDE) Standard Operating Procedures Manual. No suspect discharges were found at any of the fifty-five (55) outfalls.

### **5.3 Illicit Discharges**

The City continues to track and document suspect and illicit discharges, as well as, City investigation, follow-up and enforcement actions in accordance with procedures included in the Illicit Discharge Detection and Elimination (IDDE) Standard Operating Procedures Manual. During this reporting period, the City investigated ten (10) reports of illicit discharges, all of which were followed up on and eventually closed. A tracking spreadsheet depicting the suspect and illicit discharges has been included in Appendix 1.

## **6.0 Minimum Control Measure 4 – Construction Site Stormwater Runoff Control**

### **6.1 Confirmation Statement**

The City continues to maintain the legal authority for implementation of a local erosion and sediment control program consistent with 9VAC25-840-10 through the City's Water Protection Ordinance (Chapter 9, Section II of the City Code). The City provides information on erosion sediment control and links to Chapter 9 of the City Code on the following website:

<https://www.winchesterva.gov/engineering>.

The City continues to require permits for land disturbing activities including a VSMP authority permit through Chapter 9 of the City Code. The City provides access to a downloadable Land Disturbance Permit Package and Virginia Stormwater Management Program Permit Package on the following website: <https://www.winchesterva.gov/engineering/permits>.

The City confirms that all land disturbing projects that occurred during this reporting period have been conducted in accordance with the current department approved standards and specifications for erosion and sediment control.

### **6.2 Inspections Performed**

The City continues to maintain an inspection program in accordance with Sections 9-39 and 9-67 of the City Code. The City's inspection program provides for inspection of land disturbing activities during construction to ensure compliance with:

- Approved erosion and sediment control plans
- Approved stormwater management plans

- Development, updating, and implementation of pollution prevention plans
- Development and implementation of any additional control measures necessary to address TMDLs

During this reporting period, there were a total of one thousand three hundred and fifty nine (1,359) inspections conducted across all construction sites located within the City.

### **6.3 Enforcement Actions**

During this reporting period, there was one erosion and sediment control enforcement action taken, which was a written notice to comply.

## **7.0 Minimum Control Measure 5 – Post-Construction Stormwater Management for New Development and Development on Prior Developed Lands**

### **7.1 Virginia Stormwater Management Program Information**

The City continues to maintain the legal authority for implementation of a local Virginia Stormwater Management Program (VSMP) consistent with 9VAC25-870-10 through the City's Water Protection Ordinance (Chapter 9, Article III of the City Code). Furthermore, the City provides a link to Chapter 9 of the City Code on the following website: <https://www.winchesterva.gov/engineering>. The City provides access to a downloadable Virginia Stormwater Management Program Permit Package on the following website: <https://www.winchesterva.gov/engineering/permits>. The City continues to maintain a post development stormwater management facility inspection program in accordance with Section 9-67 of the City Code. The City requires inspections once every five years by City personnel, *and* annual self-inspections by owners.

### **7.2 Privately Owned Stormwater Management Facility Inspections**

During this reporting period, one hundred and seventy-five (175) private BMPs were requested to be self-inspected by their owners; of that number, the City received responses and self-certifications for seventy (70) BMPs. As a follow-up, the City then performed inspections on sixty-seven (67) of those that had not responded. Due to internal and external circumstances, the City is experiencing a staffing shortage and selects a minimum of 20% of the non-responsive BMPs to inspect. This reporting period the City managed to inspect roughly 64% of the non-responsive BMPs. The City is looking to resume inspections on all BMPs as soon as the staffing shortage has been resolved.

### **7.3 Privately Owned Stormwater Management Facility Enforcement Actions**

During this reporting period, four (4) of the sixty-seven (67) private BMPs inspected by the City failed inspection. Owners were sent written notice to correct the deficiencies on all four (4).

#### **7.4 Public Stormwater Management Facilities Inspections**

During this reporting period, forty one (41) City owned BMPs were inspected. A spreadsheet with the findings of these inspections can be found within the Appendix 5.

#### **7.5 Significant Maintenance, Repair, or Retrofit Activities on Stormwater Management Facilities**

Based on the results of the inspections of the forty-one (41) City owned/operated stormwater management facilities, none were found to require significant maintenance, repair, or retrofit activities beyond routine maintenance. A tracking spreadsheet depicting the City's publicly owned stormwater management facility maintenance logs has been included in Appendix 5.

#### **7.6 Virginia Construction Stormwater General Permit Database Confirmation Statement**

The City confirms that the permittee submitted stormwater management facility information through the Virginia Construction Stormwater General Permit database for those land disturbing activities for which the permittee was required to obtain coverage under the General VPDES Permit for Discharges of Stormwater from Construction Activities in accordance with Part.I.E.5.f.

#### **7.7 Electronic Reporting Confirmation Statement**

The City confirms that all best management practices (BMPs) were reported in accordance with Part I.E.5.f thus no best management practices (BMPs) were eligible to be submitted under Part I.E.5.g.

### **8.0 Minimum Control Measure 6 – Pollution Prevention and Good Housekeeping for Municipal Operations**

#### **8.1 Operation Procedures Summary**

The City developed written Standard Operating Procedures (SOPs) for Daily Good Housekeeping and Pollution Prevention during Permit Year 2 of the 2013-2018 permit cycle. The Pollution Prevention/Good Housekeeping for Municipal Operations - Standard Operating Procedures provides guidance for City staff. The Standard Operating Procedures manual can be seen in Appendix 6.

#### **8.2 New SWPPPs Summary**

The City has not developed any new SWPPPs during the reporting period

#### **8.3 Modified SWPPPs Summary**

The City has not modified the Winchester Parks and Recreation Maintenance Building SWPPP and has not delisted it as a high priority facility.

#### **8.4 Nutrient Management Plans Summary**

The City has not developed any new turf or landscape nutrient management plans during this permit year.



## **8.5 Training Events Summary**

Due to COVID-19, the City was not permitted to perform in-person training this spring as regularly scheduled. Instead, the City conducted an online training incorporating all four modules previously taught and required a 10-question quiz with an 80% pass rate in order for the participant to be counted. The modules that were incorporated are:

- Training Module #1 – Recognition and Reporting of Illicit Discharges
- Training Module #2 – Pollution Prevention for Road, Street, and Parking Maintenance
- Training Module #3 – Pollution Prevention for Fleet and Public Works Facilities
- Training Module #4 – Minimizing Stormwater Pollution Practices for Parks and Recreational Facilities

Thirty-seven (37) City employees were trained in this program year. The City expects to use this online training in the coming years due to the convenience it offers to staff.

## **9.0 Chesapeake Bay TMDL Special Conditions Requirements**

### **9.1 Non-Reported BMPs**

The City confirms that all best management practices (BMPs) were reported in accordance with Part I.E.5.f thus no best management practices (BMPs) were eligible to be submitted under Part I.E.5.g.

### **9.2 Credit Acquisitions**

The City has acquired credits during the reporting period to meet the required reductions in Part II A 3, A 4, or A5. The City acquired fifty (50) lbs/yr of nitrogen reduction from the Frederick-Winchester Service Authority to be applied toward their Chesapeake Bay reduction goals. The credit purchase invoice and annual water quality credit transfer form have been included as Appendix 7.

### **9.3 Cumulative Reduction Progress**

The City has summarized the progress toward meeting the required cumulative reductions for total nitrogen, total phosphorus, and total suspended solids in Table 3 below:

**Table 3. Overall Chesapeake Bay TMDL Reduction Progress**

City of Winchester 40% Overall Chesapeake Bay TMDL Reduction Goals Progress						
Pollutant	Subsource	Loading Rate (lbs./ac./yr.)	Existing Developed Lands as of 6/30/09 served by the MS4 within the 2010 CUA (acres)	Sum of 40% cumulative reduction (lbs./yr.)	Total Reduction Achieved as June 30 <sup>th</sup> , 2020 (lbs./yr.)	Reduction Achieved from July 1 <sup>st</sup> , 2019 – June 30 <sup>th</sup> , 2020 (lbs./yr)
Nitrogen	Regulated Urban Impervious	16.86	2,359.21	2,120.49	324.21	50
	Regulated Urban Pervious	10.07	2,848.97			
Phosphorus	Regulated Urban Impervious	1.62	2,359.21	278.48	38.00	0
	Regulated Urban Pervious	0.41	2,848.97			
Total Suspended Solids	Regulated Urban Impervious	1171.32	2,359.21	238,601.29	41,278.76	0
	Regulated Urban Pervious	175.8	2,848.97			

**9.4 BMP Implementation Summary**

The City does not have any plans to implement BMPs in the next reporting period. In accordance with the City’s stormwater strategy, BMPs are expected to be implemented in program years 3-5.

**10.0 Local TMDL Special Conditions Requirements**

**10.1 Summary of Actions**

The City of Winchester currently has two (2) Local TMDLs, they are as follows:

- 1.) Abrams Creek – Sediment
- 2.) Lower Opequon Creek – Sediment

The City has put together a comprehensive plan for addressing their local TMDL requirements in the *Abrams Creek and Lower Opequon Creek Combined Sediment and Bacteria TMDL Action Plan* (Permit Number VAR040053), which has been submitted to DEQ. The City continuous to conduct its enhancements to public education, outreach program, and employee training programs. The City also continuous it’s BMP management strategy for controlling the POC loads and is on track to accomplish its goals and milestone set forth in the report.

## **Appendix 1 - Illicit Discharge Detection and Elimination (IDDE) Tracking**

**IDDE Report Log**

<b>ID #</b>	<b>Date</b>	<b>Time</b>	<b>Contact Name</b>	<b>Phone Number</b>	<b>Approx. Address of Discharge</b>	<b>Description of Discharge Event</b>	<b>Actions Taken</b>	<b>Date Closed</b>
IDR20-001	7/10/2019	11:00AM	Rich Price	(540) 974-8723	260 Opequon Ave.	A shale rock residue was found at the corner Pine St. and Woodstock Ln. The track followed Piccadilly St. then turned left on Braddock, and right on Amherst. The residue was hard to see until turning on to Amherst, at which point it was more visible.	It was possibly caused by the Woodstock infrastructure improvements project that was to blame. It rained a few hours after the problem was noticed. City employees on site were notified of the situation and the problem hadn't repeated itself since.	7/11/2019
IDR20-002	8/8/2019	12:40PM	Rich Price	(540) 974-8723	260 Opequon Ave.	A city employee reported unpermitted activities taking place at the listed property. It was in part a right of way issue, so I went out there with Julie Carter to assess the situation. Aside from the missing permits, there was a pile of dirt in the yard and a portion of it was falling onto the road. This was causing a concern for E&S problems.	The Public Property Coordinator and Stormwater Engineer contacted Brenda Caranza separately to explain an illicit discharge. Messages were left telling her that she needs to ensure that any dug up dirt is contained on site and that the road needs cleaned off.	8/15/2019
IDR20-003	8/14/2019	10:AM	Not Reported	N/A	700 Woodland Ave.	The property owners at 700 Woodland Ave. had dug up dirt while installing a new driveway. Dirt had piled up in front of the curb blocking the storm drain. There was also dirt on the road in front of the driveway apron that needed cleaning.	I discussed this matter with the property owner Blake. He told me that as soon as he was back home he would get working on the problem. A follow up confirmed this.	8/16/19
IDR20-004	8/27/2019	2:05PM	Kevin Burkett	(540) 539-4418	Osullivan	Suds were found floating on the surface of Abram's Creek along the portion that runs through Osullivan's property. Tests for PH came back neutral and the wastewater test came back negative. Mr. Burkett stated that the suds seem to peak in the morning.	The source of the suds is still undetermined. HAZMAT testing came back negative. No further report of this problem has occurred.	9/5/19
IDR20-005	9/3/2019	12:00PM	Corey MacKnight	(540) 974-8737	Piccadilly's	Carpet cleaning van at Piccadilly's was found dumping water into a storm drain	The stormwater engineer was out of the office, so the construction inspector went to document the report and spoke with the manager at Piccadilly's. It was advised they are ultimately responsible for any wastewater discharge which occurs at their property. They said they would pass this information along to Corrigan Cleaners.	9/3/19
IDR20-006	9/10/2019	1:10PM	Donnie Johnston	(540) 974-8729	563 N. Kent St.	Donnie had notified the Stormwater Engineer via text message (photo and description) regarding an oil residue near the train tracks behind 563 N. Kent St.	The property was visited at around 8:00AM the following day, but the discharge was not present. No rain had occurred in the meantime, which indicates that the discharge had been removed. A citizen that lives in the area had no knowledge of the discharge or how it was removed, but indicated he would monitor the area to ensure that it doesn't happen again.	9/11/19
IDR20-007	9/19/2019	4:30PM	Carie Holbrook	(540) 323-4787	1501 Handley Ave.	The construction inspector went out to investigate Handley Ave. near 1501. SVEC had been doing electrical work out there. Sediment from dug up trenches was left out on the road and some loose gravel was found on the sidewalks.	The construction inspector was notified to enforce E&S minimum standards in an effort to ensure that the sediment track is cleaned off the road.	9/20/19

IDR20-008	9/23/2019	12:30PM	Tyler Kline	(540) 665-5651	204 Sheridan Ave.	A black car has been leaking oil on the street. The caller had reported that the owner of the car appears to be putting oil in the car on almost a daily basis.	The site was visited and documented. The car was parked there. There were multiple puddles of oil on the road, and there were tire tracks from what appeared to be cars driving over the puddle while driving by. The owner did not answer after knocking on the front door of the property.	9/25/19
IDR20-009	12/5/2019	1:17PM	Mike Runion	(540) 336-3232	220 E Pall Mall St.	The stormwater engineer was out for DEQ training, so the construction inspector fielded the initial report and documentation. Sand had appeared under the bridge near the Patsy Cline memorial park construction site. After speaking with Mike Runion (project contact), he claimed that they were cleaning paint and rust from underneath the bridge via sandblasting.	It was made clear that the debris be cleaned up as soon as possible, and that protective measures be placed over the prtion of town run where the work is occuring.	12/5/19
IDR20-010	1/28/2020	4:25PM	Thomas Larsen	540-336-2641	2813 Saratoga Drive	Adjacent property owner contacted the City regarding an excess of oil in driveway at 2813 Saratoga Dr.	Construction inspector visited the property to document and discuss the nature of potential illicit discharge scenario.	1/29/20

**Appendix 2. Electronic Database/Spreadsheet of City-Owned and Privately-Owned  
Stormwater Management Facilities**

ID	Property Name	Project Address	Property ID	Type	Owner	Owners Address	HU Code ID	Acres Treated	Constructed?	Impervious Acres Treated	Online Date	Last Self-Inspection	Last City Inspection
0001	804 Amherst Street	804 Amherst Street	171-1-18-	Pervious Pavers (Concrete)	Iris, LC	1440 Amherst Street, Winchester, VA 22601	17	0.08	TRUE		04/30/10	05/14/20	10/30/19
0002	804 Amherst Street	804 Amherst Street	171-1-18-	Grass Swale	Iris, LC	1440 Amherst Street, Winchester, VA 22601	17	0.04	TRUE		04/30/10	05/14/20	
0003	Aiken Strip Mall	2820-2836 Valley Avenue	310-7-40-	Detention Basin (Dry Pond)	Aikens Group	P.O. Box 2468, Winchester, VA 22601	16	6.00	TRUE		06/30/05	02/14/19	05/15/20
0004	All Points Warehouse	3082 Shawnee Drive	351-1-5-A	Detention Basin (Dry Pond)	All Points Properties LLC	1682 East Guide Drive, Suite 201, Rockville, MD 20850	16	8.80	TRUE		06/30/05	05/26/20	
0005	Allston Mews	500-552 Allston Circle, 500-520 Mews Lane	351-1-21-	Detention Basin (Dry Pond)	Neil J. & Bobbie J. Keefe	20984 Kittanning Lane, Ashburn, VA 20147	16	0.75	TRUE		06/30/05	05/28/14	
0006	Allston Mews	500-552 Allston Circle, 500-520 Mews Lane	351-1-21-	Detention Basin (Dry Pond)	Neil J. & Bobbie J. Keefe	20984 Kittanning Lane, Ashburn, VA 20147	16	0.75	TRUE		06/30/05	05/28/14	05/18/20
0007	American Woodmark	3102 Shawnee Drive	351-1-4-	Detention Basin (Dry Pond)	American Woodmark	P.O. Box 1980, Winchester, VA 22604	16	2.60	TRUE		06/30/05	05/26/20	06/02/20
0008	Amherst St. CVS	1721 Amherst Street	149-1-8-B	Detention Basin (Dry Pond)	Summit Community Bank	100 W. Jubal Early Drive, Winchester, VA 22601	17	43.50	TRUE		07/28/08	05/26/20	05/25/20
0010	Bank of Clarke County	2555 South Pleasant Valley Road	291-5-4-	Hydrodynamic Separator	Bank of Clarke County	P.O. Box 60, Winchester, VA 22604	17	1.12	TRUE		03/25/13	05/14/20	
0011	Saturn of Winchester	3003-3019 Valley Avenue	329-1-9-	Detention Basin (Dry Pond)	O'Malley LLC	3019 Valley Avenue, Winchester, VA 22601	16	3.80	TRUE		06/30/05	05/14/20	05/25/20
0012	Berryville Ave. CVS	836-906 Berryville Avenue	176-6-8-	Underground Detention	SCP 2006-C23-208-LLC	1 CVS Drive, Woonsocket, RI 02895	17	1.10	TRUE		06/30/07	None	05/25/20
0014	Byrd Office Building	2909-2919 Valley Avenue	310-1-17-	Detention Basin (Dry Pond)	Byrd Enterprises, LLC	2913 Valley Avenue, Winchester, VA 22601	16	2.06	TRUE		02/27/08	12/21/18	06/12/17
0015	George Washington Autopark (131 North Kent Street)	131 North Kent Street	173-1-P-4A-	Filterra	Winchester Parking Authority	15 N. Cameron Street, Winchester, VA 22601	17	0.20	TRUE		04/11/08	04/12/17	
0016	Castleman Subdivision	Mosby Street ROW	1-1-1-	Underground Detention	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	6.39	TRUE		11/27/07	N/A - City Owned	04/30/18
0017	Cedar Creek Grade Office Complex (905 Cedar Creek Grade)	905 Cedar Creek Grade	269-2-70-	Filterra	Dinapoli Properties, LLC	905 Cedar Creek Grade, Winchester, VA 22601	17	0.36	TRUE		02/27/07	05/21/20	10/29/19
0018	Cedar Creek Grade Office Complex (817 Cedar Creek Grade)	817 Cedar Creek Grade	269-2-69-	Filterra	Treybul Co., LLC	817 Cedar Creek Grade, Suite 120, Winchester, VA 22601	17	0.48	TRUE		02/27/07	05/14/20	10/29/19
0019	Cedar Creek Grade Office Complex (905 Cedar Creek Grade)	905 Cedar Creek Grade	269-2-70-	Filterra	Dinapoli Properties, LLC	905 Cedar Creek Grade, Winchester, VA 22601	17	0.48	TRUE		02/27/07	05/21/20	10/29/19
0020	Cedar Creek Grade Office Complex (905 Cedar Creek Grade)	905 Cedar Creek Grade	269-2-70-	Filterra	Dinapoli Properties, LLC	905 Cedar Creek Grade, Winchester, VA 22601	17	0.61	TRUE		02/27/07	05/21/20	10/29/19
0021	Cedar Creek Grade Office Complex (817 Cedar Creek Grade)	817 Cedar Creek Grade	269-2-69-	Filterra	Treybul Co., LLC	817 Cedar Creek Grade, Suite 120, Winchester, VA 22601	17	0.78	TRUE		02/27/07	05/14/20	10/29/19
0022	Centre at Winchester - Home Depot, Target (2320 Legge Boulevard)	2320 Legge Boulevard	292-1-3-	Detention Basin (Dry Pond)	P D K Winchester LC	1313 Dolley Madison Boulevard, Suite 401, McLean, VA 22101	17	8.50	TRUE		06/30/15	06/20/14	05/18/20
0023	Southside Church of Christ (3136 Papermill Road)	3136 Papermill Road	332-1-1-	General Infiltration Practice	Southside Church of Christ	3136 Papermill Road, Winchester, VA 22601	17	0.75	TRUE	0.59	11/01/17	05/14/20	06/02/20
0025	Cottages at Willow Lawn	1826 Tilghman Lane	230-5-A-130-	Detention Basin (Dry Pond)	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	40.60	TRUE			N/A	04/09/18
0027	Dermatology Associates (1514 Amherst Street)	1514 Amherst Street	150-1-7-A	Detention Basin (Dry Pond)	Dermatology Properties, LC	1514 Amherst Street, Winchester, VA 22601	17	5.20	TRUE		06/30/05	06/16/20	04/12/18
0028	Drissi Plaza (29-35 East Jubal Early Drive)	29-35 East Jubal Early Drive	252-4-A-	Underground Detention	Drissi Properties, LLC	12839 Tournament Drive, Reston, VA 20191	17	2.10	TRUE		06/30/05	05/19/20	
0029	Ft. Collier Rd. Food Lion [now Shop N Save] (699-723 Fort Collier Road)	699-723 Fort Collier Road	176-7-2B-	Detention Basin (Dry Pond)	Kentland Foundation Inc.	P.O. Box 879, Berryville, VA 22611	17	20.20	TRUE		06/30/05	06/01/20	05/19/20
0030	East Tevis Street Extension	201 East Tevis Street	292-2-2-	Enhanced Extended Detention Basin	Glaize Developments	P.O. Box 888, Winchester, VA 22604	17	23.06	TRUE			02/14/19	05/18/20
0031	East Tevis Street Extension	2600-2690 South Pleasant Valley Road	292-2-3-	Enhanced Extended Detention Basin	Glaize Developments	P.O. Box 888, Winchester, VA 22604	17	59.76	TRUE			02/14/19	
0033	FCPS Admin Annex (1415 Amherst Street)	1415 Amherst Street	170-1-3-	Bioretention Basin	Frederick County Public Schools	1415 Amherst Street, Winchester, VA 22601	17	0.10	TRUE		11/01/11	05/18/20	
0034	FCPS Admin Annex (1415 Amherst Street)	1415 Amherst Street	170-1-3-	General Infiltration Practice	Frederick County Public Schools	1415 Amherst Street, Winchester, VA 22601	17	0.10	TRUE		11/01/11	05/18/20	
0035	Featherbed Lane - Lot 3	80 Featherbed Lane	252-1-C-3-	Filterra	Windewald Enterprises, LLC	1025 Winchester Avenue, Martinsburg, WV 25401	17	0.38	TRUE			05/14/20	
0036	Featherbed Lane - Lot 3	80 Featherbed Lane	252-1-C-3-	Filterra	Windewald Enterprises, LLC	1025 Winchester Avenue, Martinsburg, WV 25401	17	0.38	TRUE			05/14/20	
0037	Featherbed Lane - Lot 3	80 Featherbed Lane	252-1-C-3-	Bioretention Basin	Windewald Enterprises, LLC	1025 Winchester Avenue, Martinsburg, WV 25401	17	0.38	TRUE			05/14/20	05/13/20
0038	Fern Adams Building (303 South Loudoun Street)	303 South Loudoun Street	193-4-1-	Underground Detention	Fern Adams Building, LLC	303 South Loudoun Street, Winchester, VA 22601	17	0.47	TRUE		06/30/05	02/06/19	05/19/20
0039	Burke Center (2-40 Weems Lane)	2-40 Weems Lane	271-2-A-	Detention Basin (Dry Pond)	Pine-Burke Realty, LLC	2224 Wilson Boulevard, Winchester, VA 22601	17	7.10	TRUE		06/30/05	05/14/20	05/15/20
0040	Frederick Douglas School	100 West Tevis Street	291-1-5E1-	Detention Basin (Dry Pond)	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	16	78.90	TRUE			N/A	04/09/18
0041	Friendship Fire Hall	627 North Pleasant Valley Road	175-1-23B-	Detention Basin (Dry Pond)	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	50.50	TRUE			N/A	01/31/18
0044	Trinity Express Lube (2409-2433 Valley Avenue)	2409-2433 Valley Avenue	270-3-13-	Detention Basin (Dry Pond)	Grasso & Sons Development Corp.	2425 Valley Avenue, Winchester, VA 22601	17	0.81	TRUE		06/30/05	07/27/10	05/25/20
0046	Harvest Drive Medical (501 - 519 Harvest Drive)	501-519 Harvest Drive	230-4-1-	Filterra	Valley Proteins, Inc.	151 Valpro Drive, Winchester, VA 22603	17	0.53	TRUE		12/11/12	01/11/19	05/14/20
0047	Harvest Drive Medical (501 - 519 Harvest Drive)	501-519 Harvest Drive	230-4-1-	Filterra	Valley Proteins, Inc.	151 Valpro Drive, Winchester, VA 22603	17	0.51	TRUE		12/11/12	01/11/19	05/14/20
0048	Harvest Drive Medical (501 - 519 Harvest Drive)	501-519 Harvest Drive	230-4-1-	Filterra	Valley Proteins, Inc.	151 Valpro Drive, Winchester, VA 22603	17	0.17	TRUE		12/11/12	01/11/19	05/14/20
0049	Harvest Drive Medical (501 - 519 Harvest Drive)	501-519 Harvest Drive	230-4-1-	Filterra	Valley Proteins, Inc.	151 Valpro Drive, Winchester, VA 22603	17	0.16	TRUE		12/11/12	01/11/19	05/14/20
0050	Harvest Drive Medical (501 - 519 Harvest Drive)	501-519 Harvest Drive	230-4-1-	Filterra	Valley Proteins, Inc.	151 Valpro Drive, Winchester, VA 22603	17	0.14	TRUE		12/11/12	01/11/19	05/14/20
0051	Harvest Drive Medical (501 - 519 Harvest Drive)	501-519 Harvest Drive	230-4-1-	Filterra	Valley Proteins, Inc.	151 Valpro Drive, Winchester, VA 22603	17	0.49	TRUE		12/11/12	01/11/19	05/14/20
0052	Harvest Drive Medical (501 - 519 Harvest Drive)	501-519 Harvest Drive	230-4-1-	Filterra	Valley Proteins, Inc.	151 Valpro Drive, Winchester, VA 22603	17	0.78	TRUE		12/11/12	01/11/19	05/14/20
0053	Harvest Drive Medical (501 - 519 Harvest Drive)	501-519 Harvest Drive	230-4-1-	Pervious Pavers (Concrete)	Valley Proteins, Inc.	151 Valpro Drive, Winchester, VA 22603	17	1.50	TRUE		12/11/12	01/11/19	05/14/20
0054	Henkel-Harris (2983 South Pleasant Valley Road)	2983 South Pleasant Valley Road	331-1-1-	Detention Basin (Dry Pond)	Henkel-Harris III, LLC	701 Fairmont Avenue, Winchester, VA 22601	16	30.10	TRUE		06/30/05	03/29/18	06/02/20
0055	High End Automotive (2970 Valley Avenue)	2970 Valley Avenue	330-2-5-	Detention Basin (Dry Pond)	SMD Properties, LLC	P.O. Box 8881, Reston, VA 20195	16	0.55	TRUE		04/19/07	01/28/16	05/15/20
0056	High End Automotive (2970 Valley Avenue)	2970 Valley Avenue	330-2-5-	Bioretention Filter	SMD Properties, LLC	P.O. Box 8881, Reston, VA 20195	16	0.55	TRUE		04/19/07	01/28/16	
0057	Hilton Garden Inn (120 Wingate Drive)	120 Wingate Drive	253-1-11-	Underground Detention	Lucky 7 LP-LLP	P.O. Box 2468, Winchester, VA 22601	17	5.50	TRUE		12/04/06	05/20/20	05/13/20
0058	Hirschberg Office Building (1818 Amherst Street)	1818 Amherst Street	149-2-A-2-2	General Infiltration Practice	Neurosurgical Investment Properties	1818 Amherst Street, Winchester, VA 22601	17	1.10	TRUE		06/30/05	06/19/14	
0059	History and Tourism Center	1400 South Pleasant Valley Road	234-1-14-	Bioretention Basin	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	1.63	TRUE			N/A - City Owned	01/31/18
0060	History and Tourism Center	1400 South Pleasant Valley Road	234-1-14-	Bioretention Basin	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	1.77	TRUE			N/A - City Owned	01/31/18
0061	Orchard Hills Section 7A	1946 Cidermill Lane	229-3-7-227-	General Infiltration Practice	Nancy Adams	1946 Cidermill Lane, Winchester, VA 22601	17	1.20	TRUE			05/26/20	05/25/20
0062	HN Funkhouser	2148-2150 South Loudoun Street	272-1-7-	Detention Basin (Dry Pond)	KVC LLC	P.O. Box 2038, Winchester, VA 22604	17	1.16	TRUE		01/01/08	05/26/20	
0063	HN Funkhouser	2148-2150 South Loudoun Street	272-1-7-	Grass Swale	KVC LLC	P.O. Box 2038, Winchester, VA 22604	17	0.56	TRUE		01/01/08	05/26/20	05/14/20
0064	HN Funkhouser	2148-2150 South Loudoun Street	272-1-7-	Grass Swale	KVC LLC	P.O. Box 2038, Winchester, VA 22604	17	0.22	TRUE		01/01/08	05/26/20	05/14/20
0065	HN Funkhouser	2148-2150 South Loudoun Street	272-1-7-	Grass Swale	KVC LLC	P.O. Box 2038, Winchester, VA 22604	17	1.53	TRUE		01/01/08	05/26/20	05/14/20
0066	Hope Drive Site Plan (321 Hope Drive)	321 Hope Drive	270-1-8-C	Detention Basin (Dry Pond)	Zollvia Properties, LLC	21 S. Loudoun Street, Winchester, VA 22601	16	2.69	TRUE		07/12/11	06/16/20	
0067	Hope Drive Subdivision	230 Hope Drive	270-1-8-D	Detention Basin (Dry Pond)	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	66.00	TRUE			N/A - City Owned	04/09/18
0068	Islamic Society of Winchester	601 Woodstock Lane	195-10-B-69-	Permeable Pavement (Concrete, Asphalt)	Islamic Society of Winchester	601 Woodstock Lane, Winchester, VA 22601	17	0.20	TRUE		09/01/10	05/26/20	05/25/20
0070	John Handley Parking Lot	338 Handley Boulevard	212-1-1-	Underground Detention	Winchester Public School Board	12 N. Washington Street, Winchester, VA 22601	17	0.00	TRUE		01/30/07	06/28/13	06/07/17
0071	John Handley Bowl (425 Handley Boulevard)	425 Handley Boulevard	211-1-1-	Underground Detention	Winchester Public School Board	12 N. Washington Street, Winchester, VA 22601	17	4.83	TRUE		02/02/11	06/28/13	06/07/17
0072	John Handley Tennis (338 Handley Boulevard)	338 Handley Boulevard	212-1-1-	Underground Detention	Winchester Public School Board	12 N. Washington Street, Winchester, VA 22601	17	0.24	TRUE		02/02/11	06/28/13	06/07/17

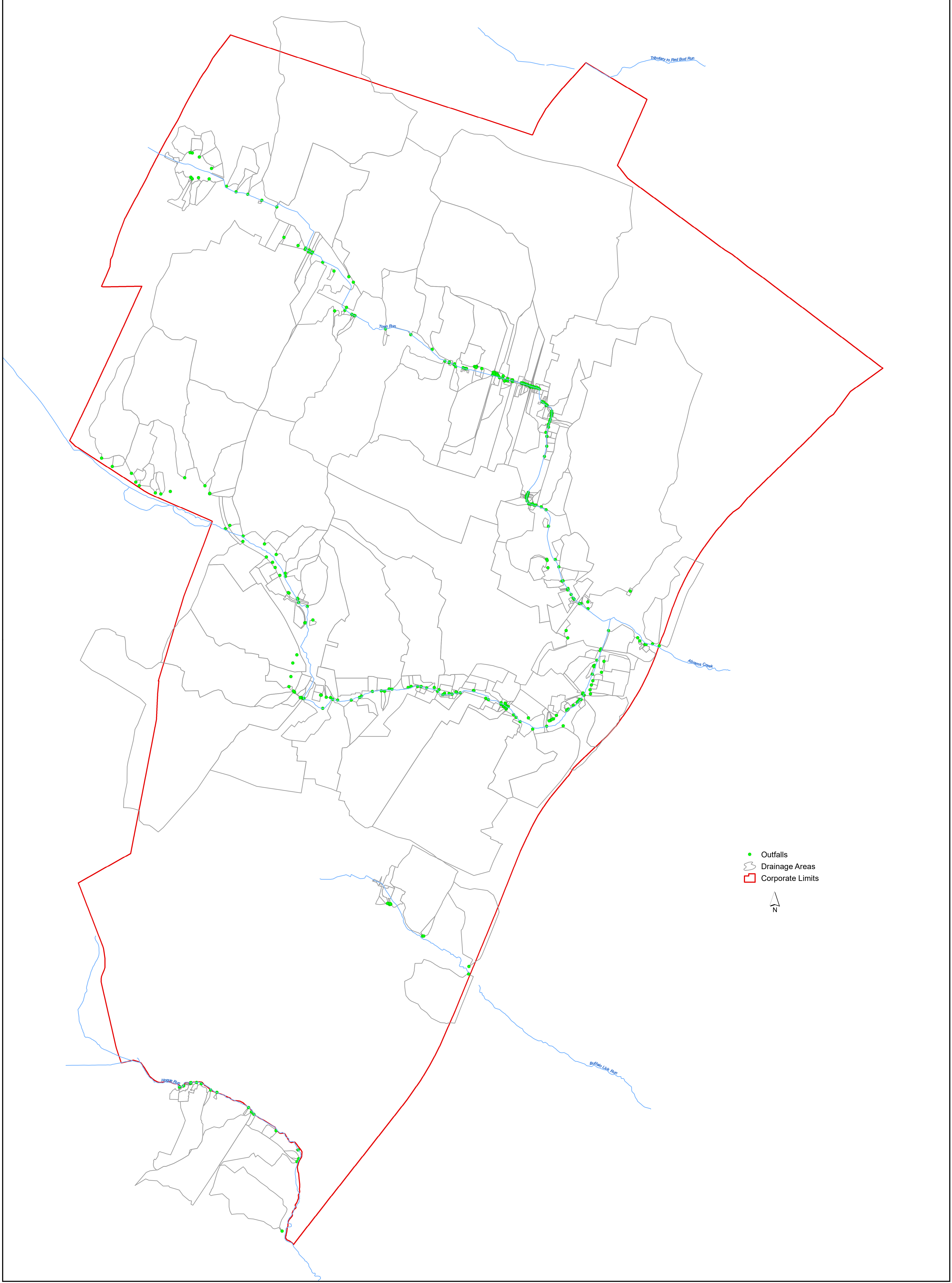
0073	Jubal Early Plaza I - Lot 2	21-29 West Jubal Early Drive	252-1-A-2-	Detention Basin (Dry Pond)	Randolph Craun	P.O. Box 119, Winchester, VA 22604	17	4.22	TRUE	06/30/05	06/25/20	
0074	Jubal Early Plaza II - Lot 9	1820 West Plaza Drive	252-1-B-9-1820	Detention Basin (Dry Pond)	Women's Center of Winchester	1820 Plaza Drive, Winchester, VA 22601	17	4.22	TRUE	06/30/05	04/06/18	
0075	KSR LLC	210 East Clifford Street	193-1-U-3-	Sand Filter	The Townes at Kent HOA	210 South Kent Street, Winchester, VA 22601	17	0.12	TRUE	01/29/07	02/06/19	
0076	SU Sarah's Glen	1460 University Drive	254-1-2-	Pervious Pavers (Concrete)	Shenandoah University	1460 University Drive, Winchester, VA 22601	17	0.00	TRUE	01/21/13	03/09/18	06/12/17
0077	Limestone Court	2610 Hockman Avenue	290-9-32-	Detention Basin (Dry Pond)	White Properties of Winchester, Inc.	1520 Commerce Street, Winchester, VA 22601	17	0.00	TRUE	06/30/05		09/18/14
0078	Linden Drive Office Park	136 Linden Drive	150-2-B-3-	Detention Basin (Dry Pond)	La Rose, LLC	1609 Van Couver Street, Winchester, VA 22601	17	2.13	TRUE	03/14/11		05/15/18
0079	Linden Heights Animal Hospital	274 Linden Drive	150-2-B-19-	Enhanced Extended Detention Basin	Schmitt Properties	274 Linden Drive, Winchester, VA 22601	17	1.34	TRUE	03/14/11	02/13/19	
0080	Linden Medical Center	172 Linden Drive	150-2-B-15-CE	Detention Basin (Dry Pond)	Linden Westside Condominiums Assoc.	2509 Valley Avenue, Winchester, VA 22601	17	4.40	TRUE	06/12/07	01/02/19	06/05/18
0081	Lowes	2200 South Pleasant Valley Road	272-1-C1-	Detention Basin (Dry Pond)	Lowes Home Center Inc	P.O. Box 1111, North Wilkesboro, NC 28656	17	13.50	TRUE	06/30/05	01/02/19	06/02/20
0082	Lowes	2210 Legge Boulevard	293-1-1-	Detention Basin (Dry Pond)	Lowes Home Center Inc	P.O. Box 1111, North Wilkesboro, NC 28656	17	19.70	TRUE	06/30/05	01/02/19	05/24/18
0083	Madison Center	320 Hope Drive	270-6-2-	Detention Basin (Dry Pond)	NC Development LLC	P.O. Box 31, Winchester, VA 22604	17	0.78	TRUE	01/07/08	03/22/17	10/29/19
0084	Madison Center	320 Hope Drive	270-6-2-	Bioretention Filter	NC Development LLC	P.O. Box 31, Winchester, VA 22604	17	0.20	TRUE	01/07/08	03/22/17	10/29/19
0085	Madison Center	320 Hope Drive	270-6-2-	Bioretention Filter	NC Development LLC	P.O. Box 31, Winchester, VA 22604	17	0.20	TRUE	01/07/08	03/22/17	05/13/20
0086	Madison Center	320 Hope Drive	270-6-2-	Bioretention Filter	NC Development LLC	P.O. Box 31, Winchester, VA 22604	17	0.20	TRUE	01/07/08	03/22/17	05/13/20
0087	Madison Center	320 Hope Drive	270-6-2-	Bioretention Filter	NC Development LLC	P.O. Box 31, Winchester, VA 22604	17	0.20	TRUE	01/07/08	03/22/17	05/13/20
0088	Madison Center	320 Hope Drive	270-6-2-	Underground Detention	NC Development LLC	P.O. Box 31, Winchester, VA 22604	17	1.80	TRUE	01/07/08	03/22/17	05/13/20
0089	Madison Place I	3018 Shawnee Drive	351-1-19-	Detention Basin (Dry Pond)	Madison Winds, LLC	P.O. Box 2468, Winchester, VA 22604	16	5.53	TRUE	12/20/05	02/14/19	05/18/20
0090	McDonald's - Berryville Ave.	1124 Berryville Avenue	176-3-20-A	Underground Detention	McDonald's Restaurant	1124 Berryville Avenue, Winchester, VA 22601	17	0.60	TRUE	06/30/05	05/20/14	06/02/20
0091	McKinley Office Building	700 Fort Collier Road	176-3-12-B	Detention Basin (Dry Pond)	Michael J. Bernel	10550 Marbury Road, Oakton, VA 22124	17	3.20	TRUE	06/30/05		09/18/14
0093	Morlyn Hills Subdivision	1511 Stone House court	188-6-61-	Constructed Wetlands	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	0.00	TRUE	N/A		02/20/18
0094	Orchard Terrace	282 Green Street	154-10-B-115-	Detention Basin (Dry Pond)	286,282, 278, 274 Green Street	286,282, 278, 274 Green Street, Winchester, VA 22601	18	6.40	TRUE	N/A		06/03/20
0095	Our Health - Phase II (401 North Cameron Street)	401 North Cameron Street	173-1-L-11-	Pervious Pavers (Concrete)	North Cameron Properties, LLC	925 Meadow Court, Winchester, VA 22601	17	0.08	TRUE	05/28/10	07/03/13	06/01/17
0096	Panera	2605 South Pleasant Valley Road	291-5-1-	Filterra	Glaize Developments	P.O. Box 888, Winchester, VA 22604	16	0.12	TRUE	06/18/07	02/14/19	10/31/19
0097	Panera	2605 South Pleasant Valley Road	291-5-1-	Filterra	Glaize Developments	P.O. Box 888, Winchester, VA 22604	16	0.51	TRUE	06/18/07	02/14/19	10/31/19
0098	Panera	2605 South Pleasant Valley Road	291-5-1-	Filterra	Glaize Developments	P.O. Box 888, Winchester, VA 22604	16	0.34	TRUE	06/18/07	02/14/19	10/31/19
0099	Panera	2605 South Pleasant Valley Road	291-5-1-	Detention Basin (Dry Pond)	Glaize Developments	P.O. Box 888, Winchester, VA 22604	16	0.34	TRUE	06/18/07	02/14/19	10/31/19
0100	Park Place	2024 Harvest Drive	250-4-B-89-	Detention Basin (Dry Pond)	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	33.10	TRUE	N/A - City Owned		04/09/18
0101	Patriot Collision Center	3064-3068 Shawnee Drive	351-1-7-	Underground Detention	Patriot Collision Center LLC	3066 Shawnee Drive, Winchester, VA 22601	16	1.20	TRUE	06/30/05	02/15/19	05/31/17
0102	Rubbermaid Building Expansion (3124 Valley Avenue)	3124 Valley Avenue	330-1-11-	Detention Basin (Dry Pond)	Rubbermaid Commercial Products	3124 Valley Avenue, Winchester, VA 22601	16	0.00	TRUE	06/25/12	05/19/20	06/04/18
0103	Pine-Burke Apartments - Phase I (2-14 Taft Avenue)	2-14 Taft Avenue	271-4-13-	Underground Detention	Pine-Burke Realty, LLC	2224 Wilson Boulevard, Winchester, VA 22601	17	0.47	TRUE	06/30/05	05/14/20	
0104	JD Byrider (1930 South Loudoun Street)	1930 South Loudoun Street	252-1-16-	Extended Detention Basin	JSB Associates	1930 South Loudoun Street, Winchester, VA 22601	17	1.41	TRUE	04/02/12	09/22/20	
0105	Popeye's (2659 Valley Avenue)	2659 Valley Avenue	290-6-2-	Underground Detention	Christina Tseng	160 Lenz Lane, Stephens City, VA 22655	16	0.93	TRUE	06/12/07	04/10/17	05/23/18
0107	Rolling Hills Park	702 Kennedy Drive	289-7-1-	Detention Basin (Dry Pond)	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	16	4.50	TRUE		N/A	04/09/18
0108	Rolling Hills Subdivision (612 Lake Drive)	612 Lake Drive	289-8-2-65-A	Detention Basin (Dry Pond)	Rolling Hills Estates HOA	2509 Valley Avenue, Winchester, VA 22601	16	54.70	TRUE	08/24/12	01/02/19	05/21/18
0109	Major Properties	150 Commercial Street	153-1-J-3-	Pervious Pavers (Concrete)	Major Properties, LLC	150 Commercial Street, Winchester, VA 22601	17	0.72	TRUE	05/29/15	12/26/18	05/18/18
0110	Selma Medical	330 Amherst Street	172-1-F-15-C	Detention Basin (Dry Pond)	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	7.50	TRUE	N/A - City Owned		06/03/20
0112	Shawnee Fire Department (2210 Valor Drive)	2210 Valor Drive	271-3-7-	Detention Basin (Dry Pond)	Shawnee Volunteer Fire Dept	2210 Valor Drive, Winchester, VA 22601	17	20.30	TRUE	06/30/05	05/26/20	
0113	Stone Ridge Development	412 South Loudoun Street	193-1-J-2-	Pervious Pavers (Concrete)	Leicester Square COA	P.O. Box 3496, Winchester, VA 22604	17	0.18	TRUE		03/09/16	
0115	812 & 830 Amherst Street (812 Amherst Street)	812 Amherst Street	171-1-16-100	Pervious Pavers (Concrete)	812 Amherst Street Condo Association, Inc.	812 Amherst Street, Suite 101, Winchester, VA 22601	17	0.14	TRUE	08/31/10	01/07/19	05/19/20
0116	Sorrel Court (2946 Sorrel Court)	2946 Sorrel Court	310-14-23-	Detention Basin (Dry Pond)	Sorrel Court HOA	P.O. Box 2580, Winchester, VA 22604	16	4.80	TRUE	06/30/05	04/11/18	06/04/20
0117	Spencer Square (2856 Spencer Square)	2856 Spencer Square	310-17-11-	Detention Basin (Dry Pond)	Meiko Inc	609 Cedar Creek Grade, Suite A, Winchester, VA 22601	16	1.50	TRUE	06/30/05	05/14/20	06/04/20
0119	Stoncrest Village (415 Russelcroft Road)	415 Russelcroft Road	290-8-C-35-	Detention Basin (Dry Pond)	Stoncrest Village HOA	P.O. Box 2580, Winchester, VA 22604	16	87.00	TRUE	06/30/05	02/08/19	05/14/20
0120	Stutzman Body Shop (2725 Valley Avenue)	2725 Valley Avenue	310-1-6-	Underground Detention	JACC, LLC	2700 Valley Avenue, Winchester, VA 22601	16	1.10	TRUE	08/28/09	01/18/19	05/13/20
0121	SU Student Center Addendum (1460 University Drive)	1460 University Drive	254-1-2-	Pervious Pavers (Concrete)	Shenandoah University	1460 University Drive, Winchester, VA 22601	17	0.40	TRUE	07/10/08	03/09/18	06/12/17
0122	Summerfield Apartments (900 - 975 Summerfield Lane)	900-975 Summerfield Lane	249-1-3-	Detention Basin (Dry Pond)	Page-Brooke Developments	1573 Commerce Street, Winchester, VA 22601	17	5.40	TRUE	06/30/05	01/31/19	
0123	812 & 830 Amherst Street (830 Amherst Street)	830 Amherst Street	171-1-15A-	Pervious Pavers (Concrete)	Amherst Street Condo Association, Inc.	830 Amherst Street, Winchester, VA 22601	17	0.24	TRUE	08/31/10	12/26/18	
0125	Sun Trust Bank	1738 Amherst Street	149-2-B-1-	Underground Detention	Amherst Associates II, LLC	1712 Amherst Street, Winchester, VA 22601	17	1.00	TRUE	06/30/05	05/14/20	
0126	TGI Friday's	2600-2690 South Pleasant Valley Road	292-2-3-	Hydrodynamic Separator	Glaize Developments	P.O. Box 888, Winchester, VA 22604	16	1.30	TRUE	07/23/07	02/14/19	
0127	TGI Friday's	2600-2690 South Pleasant Valley Road	292-2-3-	Hydrodynamic Separator	Glaize Developments	P.O. Box 888, Winchester, VA 22604	16	1.23	TRUE	07/23/07	02/14/19	
0128	TGI Friday's	2600-2690 South Pleasant Valley Road	292-2-3-	Extended Detention Basin	Glaize Developments	P.O. Box 888, Winchester, VA 22604	16	1.30	TRUE	07/23/07	02/14/19	
0129	TGI Friday's	2600-2690 South Pleasant Valley Road	292-2-3-	Extended Detention Basin	Glaize Developments	P.O. Box 888, Winchester, VA 22604	16	1.23	TRUE	07/23/07	02/14/19	
0130	The Corners I and II	2270 Valor Drive	270-6-5-	Underground Detention	Biggs Corner Winchester, LLC	1625 Poe's Lane, Charlottesville, VA 22911	17	1.51	TRUE	09/30/08	12/30/18	
0131	Timberlake Office Building	900 South Pleasant Valley Road	214-8-2-	Filterra	Grove Hill, LLC	900 S. Pleasant Valley Road, Winchester, VA 22601	17	0.24	TRUE	11/27/06	01/10/19	05/19/20
0132	Timberlake Office Building	900 South Pleasant Valley Road	214-8-2-	Filterra	Grove Hill, LLC	900 S. Pleasant Valley Road, Winchester, VA 22601	17	0.22	TRUE	11/27/06	01/10/19	
0133	Valley Ave. Food Lion	2584-2606 Valley Avenue	290-1-2A-	Detention Basin (Dry Pond)	Kentland Foundation Inc.	P.O. Box 879, Berryville, VA 22611	17	20.70	TRUE	12/19/06	06/01/20	
0134	Valley Mortgage	2654 Valley Avenue	290-1-8-	Detention Basin (Dry Pond)	SEE Properties LP LLP	P.O. Box 11836, Danville, VA 24543	16	58.00	TRUE	06/30/05	07/09/20	
0135	Limestone Court	2658 Limestone Court	290-9-31-	Detention Basin (Dry Pond)	Limestone Court HOA	2658 Limestone Court, Winchester, VA 22601	17	18.30	TRUE	06/30/05	8/17/202	05/13/20
0136	Valor Drive Site Plan	2233-2265 Valor Drive	270-6-4-A-N	Detention Basin (Dry Pond)	Alejandro Orfila	P.O. Box 1182, Middleburg, VA 20118	17	3.44	TRUE	05/15/06	05/18/20	05/15/20
0137	Valor View Shopping Center	2301-2325 Valor Drive	270-6-3-	Underground Detention	PRO Properties, LLC	588 Stoney Mountain Drive, Strasburg, VA 22657	17	1.36	TRUE	12/03/10	04/23/18	06/13/17
0138	Valor View Shopping Center	2301-2325 Valor Drive	270-6-3-	Bioretention Basin	PRO Properties, LLC	588 Stoney Mountain Drive, Strasburg, VA 22657	17	0.59	TRUE	12/03/10	04/23/18	06/13/17
0139	Northside Station	823 North Loudoun Street	134-5-6-	General Infiltration Practice	Pari Plaza LLC	7204 Hickory Street, Falls Church, VA 22043	18	1.60	TRUE	06/30/05	05/18/20	06/03/20
0140	Walmart	2350 South Pleasant Valley Road	292-1-1-	Detention Basin (Dry Pond)	Walmart Supercenter	2350 South Pleasant Valley Road, Winchester, VA 22601	17	19.40	TRUE	06/30/05	02/14/19	10/30/19
0141	Walnut Street Extension Subdivision	400 Walnut Street	196-13-1-	Grass Swale	Don Packard Jr.	2400 Valley Avenue, Winchester, VA 22601	17	1.24	TRUE	09/26/05	05/14/20	06/03/20
0143	Westridge Section 1	2505 Goldenfield Lane	269-4-A-	Detention Basin (Dry Pond)	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	9.20	TRUE	N/A - City Owned		04/09/18
0144	Westridge Section 2	2653 Windwood Drive	289-4-C-60-	Detention Basin (Dry Pond)	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	15.10	TRUE	N/A - City Owned		04/09/18



0146	Whittier Ponding Basin	841 Whittier Avenue	171-6-A-	Detention Basin (Dry Pond)	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	124.70	TRUE		N/A - City Owned	04/18/18
0147	Winchester Medical Center	1840 Amherst Street	149-3-1-	Retention Basin (Wet Pond)	Winchester Medical Center		17	57.00	TRUE	06/30/05	04/08/16	
0148	Winchester Medical Center	1840 Amherst Street	149-3-1-	Retention Basin (Wet Pond)	Winchester Medical Center	P.O. Box 3340, Winchester, VA 22604	17	57.00	TRUE	06/30/05	04/08/16	
0149	Winchester Medical Center	1840 Amherst Street	149-3-1-	Retention Basin (Wet Pond)	Winchester Medical Center	P.O. Box 3340, Winchester, VA 22604	17	57.00	TRUE	06/30/05	04/08/16	
0150	Glaize Pleasant Valley Commercial	2600-2690 South Pleasant Valley Road	292-2-3-	General Infiltration Practice	Glaize Developments	P.O. Box 888, Winchester, VA 22604	16	1.81	TRUE	0.98		02/14/19
0151	Glaize Pleasant Valley Commercial	2600-2690 South Pleasant Valley Road	292-2-3-	Hydrodynamic Separator	Glaize Developments	P.O. Box 888, Winchester, VA 22604	16	0.67	TRUE	0.64		02/14/19
0161	FCPS Admin Building Addition	1415 Amherst Street	170-1-3-	Filterra	Frederick County Public Schools	1415 Amherst Street, Winchester, VA 22601	17	0.20	TRUE		11/01/11	05/18/20
0163	Harvest Drive Medical	501-519 Harvest Drive	230-4-1-	Grass Swale	Valley Proteins, Inc.	151 Valpro Drive, Winchester, VA 22603	17	0.21	TRUE		01/11/19	05/14/20
0164	Harvest Drive Medical	501-519 Harvest Drive	230-4-1-	Grass Swale	Valley Proteins, Inc.	151 Valpro Drive, Winchester, VA 22603	17	3.09	TRUE		01/11/19	05/14/20
0165	Medical Circle Imaging	125 Medical Circle	171-8-B2-	Filterra	Neurological Properties, LLC	125 Medical Circle, Suite A, Winchester, VA 22601	17	0.00	TRUE		09/14/05	06/16/20
0166	Medical Circle Imaging	125 Medical Circle	171-8-B2-	Filterra	Neurological Properties, LLC	125 Medical Circle, Suite A, Winchester, VA 22601	17	0.00	TRUE		09/14/05	06/16/20
0167	Medical Circle Imaging	125 Medical Circle	171-8-B2-	Underground Detention	Neurological Properties, LLC	125 Medical Circle, Suite A, Winchester, VA 22601	17	0.00	TRUE		09/14/05	06/16/20
0168	Omps Pet Crematory	1600 Amherst Street	150-15-3-	Bioretention Filter	Omps Funeral Home	1600 Amherst Street, Winchester, VA 22601	17	4.57	TRUE		08/04/11	05/14/20
0169	Rubbermaid Storage Area	3124 Valley Avenue	330-1-11-	Grass Swale	Rubbermaid Commercial Products	3124 Valley Avenue, Winchester, VA 22601	16	0.49	TRUE		07/12/13	05/19/20
0170	Rubbermaid Storage Area	3124 Valley Avenue	330-1-11-	Grass Swale	Rubbermaid Commercial Products	3124 Valley Avenue, Winchester, VA 22601	16	0.27	TRUE		07/12/13	05/19/20
0180	Spanish United Pentecostal Church	672 Virginia Avenue	175-11-10-	Pervious Pavers (Concrete)	Spanish United Pentecostal Church Trustees	672 Virginia Avenue, Winchester, VA 22601	17	0.23	TRUE		04/30/13	06/01/20
0181	Star Beauty School	219 Millwood Avenue	213-2-1A-	Bioretention Basin	Wright Renovations	124 Page Court, White Post, VA 22663	17	0.37	TRUE		01/05/19	
0182	TGI Friday's	2600-2690 South Pleasant Valley Road	292-2-3-	Filterra	Glaize Developments	P.O. Box 888, Winchester, VA 22604	16	0.33	TRUE		07/23/07	02/14/19
0183	City National Bank	1830 Valley Avenue	231-7-K-	Underground Detention	City National Bank	1830 Valley Avenue, Winchester, VA 22601	17	0.29	TRUE		08/20/13	07/23/20
0184	City National Bank	1830 Valley Avenue	231-7-K-	Filterra	City National Bank	1830 Valley Avenue, Winchester, VA 22601	17	0.21	TRUE		08/20/13	07/23/20
0185	City National Bank	1830 Valley Avenue	231-7-K-	Filterra	City National Bank	1830 Valley Avenue, Winchester, VA 22601	17	0.29	TRUE		08/20/13	07/23/20
0186	Cedar Hill Apartments	2250 Sofia Way	270-1-1-B	Filterra	Cornerstone, LP LLP	1025 Martinsburg Pike, Winchester, VA 22601	17	0.38	TRUE		02/14/19	
0187	Cedar Hill Apartments	2250 Sofia Way	270-1-1-B	Filterra	Cornerstone, LP LLP	1025 Martinsburg Pike, Winchester, VA 22601	17	0.25	TRUE		02/14/19	
0188	Cedar Hill Apartments	2250 Sofia Way	270-1-1-B	Filterra	Cornerstone, LP LLP	1025 Martinsburg Pike, Winchester, VA 22601	17	0.25	TRUE		02/14/19	
0189	Cedar Hill Apartments	2250 Sofia Way	270-1-1-B	Filterra	Cornerstone, LP LLP	1025 Martinsburg Pike, Winchester, VA 22601	17	0.25	TRUE		02/14/19	
0190	Cedar Hill Apartments	2250 Sofia Way	270-1-1-B	Grass Swale	Cornerstone, LP LLP	1025 Martinsburg Pike, Winchester, VA 22601	17	0.20	TRUE		02/14/19	05/15/20
0191	Roberts Street Plaza Parking	1811 Roberts Street	231-9-1-	Filterra	1818 Robert, LC	1816 Roberts Street, Winchester, VA 22601	17	0.33	TRUE		06/01/20	05/14/20
0192	Winchester Marketplace	1551 South Pleasant Valley Road	253-1-8B-	Filterra	DSC Properties LLC	216 S. Payne Street, Alexandria, VA 22314	17	0.12	TRUE	0.12	09/30/15	02/12/19
0193	Winchester Marketplace	1531-1539 Pleasant Valley Road	253-1-8C-	Filterra	JDC Winchester, LLC	1760 Reston Parkway, Suite 210, Reston, VA 20190	17	0.37	TRUE	0.37	09/30/15	05/26/20
0194	Winchester Marketplace	1531-1539 Pleasant Valley Road	253-1-8C-	Filterra	JDC Winchester, LLC	1760 Reston Parkway, Suite 210, Reston, VA 20190	17	0.12	TRUE	0.12	09/30/15	02/15/19
0195	Winchester Marketplace	1551 South Pleasant Valley Road	253-1-8B-	Filterra	DSC Properties LLC	216 S. Payne Street, Alexandria, VA 22314	17	0.11	TRUE	0.11	09/30/15	05/26/20
0196	Winchester Marketplace	1551 South Pleasant Valley Road	253-1-8B-	Filterra	DSC Properties LLC	216 S. Payne Street, Alexandria, VA 22314	17	0.21	TRUE	0.21	09/30/15	02/12/19
0197	Winchester Marketplace	1551 South Pleasant Valley Road	253-1-8B-	Filterra	DSC Properties LLC	216 S. Payne Street, Alexandria, VA 22314	17	0.28	TRUE	0.28	09/30/15	02/12/19
0198	Winchester Marketplace	1531-1539 Pleasant Valley Road	253-1-8C-	Filterra	JDC Winchester, LLC	1760 Reston Parkway, Suite 210, Reston, VA 20190	17	0.08	TRUE	0.27	09/30/15	05/26/20
0199	Winchester Marketplace	1531-1539 Pleasant Valley Road	253-1-8C-	Filterra	JDC Winchester, LLC	1760 Reston Parkway, Suite 210, Reston, VA 20190	17	0.42	TRUE	0.30	09/30/15	05/26/20
0215	Chuck E. Cheese's	2600-2690 South Pleasant Valley Road	292-2-3-	Filterra	Glaize Developments	P.O. Box 888, Winchester, VA 22604	16	0.25	TRUE		02/14/19	05/18/20
0216	Chuck E. Cheese's	2600-2690 South Pleasant Valley Road	292-2-3-	Filterra	Glaize Developments	P.O. Box 888, Winchester, VA 22604	16	0.29	TRUE		02/14/19	05/18/20
0217	SVEC South Winchester Substation	21 Shingleton Lane	271-1-4-A	General Infiltration Practice	Shenandoah Valley Electric Cooperative	147 Dinkle Avenue, Mount Crawford, VA 22841	17	9.30	TRUE		05/14/20	
0218	Trinity Auto Center	2409-2433 Valley Avenue	270-3-13-	Bioretention Basin	Grasso & Sons Development Corp.	2425 Valley Avenue, Winchester, VA 22601	17	0.67	TRUE		08/26/13	None Thus Far
0219	Gateway Center	1705 Amherst Street	150-1-11-	Cartridge Filter	Mitzy Davis (Property Manager)	1532 Dalton Place, Winchester, VA 22601	17	0.16	TRUE		03/01/16	
0220	Gateway Center	1705 Amherst Street	150-1-11-	Underground Detention	Mitzy Davis (Property Manager)	1532 Dalton Place, Winchester, VA 22601	17	1.46	TRUE		03/01/16	
0221	Gateway Center	1705 Amherst Street	150-1-11-	Cartridge Filter	Mitzy Davis (Property Manager)	1532 Dalton Place, Winchester, VA 22601	17	1.46	TRUE		03/01/16	
0222	Gateway Center	1705 Amherst Street	150-1-11-	Detention Basin (Dry Pond)	Mitzy Davis (Property Manager)	1532 Dalton Place, Winchester, VA 22601	17	0.77	TRUE		03/01/16	05/19/20
0223	Spring Street	Spring Street ROW	1-1-2-	Filterra	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	0.05	TRUE	0.05	09/30/15	N/A - City Owned
0224	Spring Street	Spring Street ROW	1-1-2-	Filterra	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	0.21	TRUE	0.21	10/01/15	N/A - City Owned
0225	Spring Street	Spring Street ROW	1-1-2-	Filterra	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	0.30	TRUE	0.15	10/02/15	N/A - City Owned
0226	118 St. James Place	118 East James Street	213-1-K-8-	Bioretention Basin	John & Juanita Melling	5607 Hopkins Cemetery Road, Felton, DE 19943	17	0.04	TRUE		10/27/14	06/16/20
0227	118 St. James Place	120 East James Street	213-1-K-8-A	Bioretention Basin	Courtney Crawford & Brian Eichelberger	120 East James Street, Winchester, VA 22601	17	0.04	TRUE		10/28/14	03/30/18
0228	118 St. James Place	122 East James Street	213-1-K-8-B	Bioretention Basin	Andrew Hynes	122 East James Street, Winchester, VA 22601	17	0.04	TRUE		10/29/14	04/25/17
0229	118 St. James Place	124 East James Street	213-1-K-8-C	Bioretention Basin	Beth Axelson	124 East James Street, Winchester, VA 22601	17	0.15	TRUE		10/30/14	05/14/20
0230	Stewart Street Properties	120 South Stewart Street	192-1-M-5-	Bioretention Filter	Kilmer & Associates, CPA, P.C.	120 South Stewart Street, Winchester, VA 22601	17	0.55	TRUE		06/24/15	01/06/19
0231	WMC Cancer Center	1840 Amherst Street	149-3-1-	Cartridge Filter	Winchester Medical Center	P.O. Box 3340, Winchester, VA 22604	17	2.65	TRUE	1.38	08/25/16	05/16/18
0232	New John Kerr Elementary School	427 Meadowbranch Avenue	149-1-7B-	Bioretention Basin	Winchester Public School Board	12 N. Washington Street, Winchester, VA 22601	17	1.19	TRUE	0.80	01/12/17	05/16/18
0233	New John Kerr Elementary School	427 Meadowbranch Avenue	149-1-7B-	Bioretention Basin	Winchester Public School Board	12 N. Washington Street, Winchester, VA 22601	17	1.24	TRUE	0.55	01/12/17	05/16/18
0234	New John Kerr Elementary School	427 Meadowbranch Avenue	149-1-7B-	Bioretention Basin	Winchester Public School Board	12 N. Washington Street, Winchester, VA 22601	17	4.42	TRUE	2.10	01/12/17	05/16/18
0235	Dixie Beverage	2705 South Pleasant Valley Road	311-1-12-	Bioretention Basin	Shenandoah Valley Distributing Company	2705 South Pleasant Valley Road, Winchester, VA 22601	16	0.45	TRUE		05/14/20	10/29/19
0236	Dixie Beverage	2705 South Pleasant Valley Road	311-1-12-	Bioretention Basin	Shenandoah Valley Distributing Company	2705 South Pleasant Valley Road, Winchester, VA 22601	16	0.99	TRUE		05/14/20	10/29/19
0237	Dixie Beverage	2705 South Pleasant Valley Road	311-1-12-	Bioretention Basin	Shenandoah Valley Distributing Company	2705 South Pleasant Valley Road, Winchester, VA 22601	16	0.63	TRUE		05/14/20	10/29/19
0239	Storage Solutions	403 Battaille Drive	351-2-2-	Filterra	Storage Solutions of Winchester, LLC	1520 Commerce Street, Winchester, VA 22601	16	0.36	TRUE	0.32	05/26/20	10/29/19
0240	Storage Solutions	403 Battaille Drive	351-2-2-	Filterra	Storage Solutions of Winchester, LLC	1520 Commerce Street, Winchester, VA 22601	16	0.37	TRUE	0.32	05/26/20	10/29/19
0241	Storage Solutions	403 Battaille Drive	351-2-2-	Filterra	Storage Solutions of Winchester, LLC	1520 Commerce Street, Winchester, VA 22601	16	0.26	TRUE	0.24	05/26/20	10/29/19
0242	Storage Solutions	403 Battaille Drive	351-2-2-	Filterra	Storage Solutions of Winchester, LLC	1520 Commerce Street, Winchester, VA 22601	16	0.27	TRUE	0.24	05/26/20	10/29/19
0243	Storage Solutions	403 Battaille Drive	351-2-2-	Detention Basin (Dry Pond)	Storage Solutions of Winchester, LLC	1520 Commerce Street, Winchester, VA 22601	16	2.34	TRUE	1.68	05/26/20	10/29/19
0246	Meadow Branch Avenue ROW	Meadow Branch Avenue ROW	1-1-3-	Filterra	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	0.16	TRUE	0	07/01/17	N/A - City Owned
0247	Meadow Branch Avenue ROW	Meadow Branch Avenue ROW	1-1-3-	Filterra	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	0.25	TRUE	0	07/01/17	N/A - City Owned
0248	Meadow Branch Avenue ROW	Meadow Branch Avenue ROW	1-1-3-	Filterra	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	0.07	TRUE	0	07/01/17	N/A - City Owned
0249	Meadow Branch Avenue ROW	Meadow Branch Avenue ROW	1-1-3-	Filterra	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	0.12	TRUE	0	07/01/17	N/A - City Owned

0250	Meadow Branch Avenue ROW	Meadow Branch Avenue ROW	1-1-3-	Filterra	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	0.23	TRUE	0	07/01/17	N/A - City Owned	04/26/18
0251	Meadow Branch Avenue ROW	Meadow Branch Avenue ROW	1-1-3-	Filterra	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	0.30	TRUE	0	07/01/17	N/A - City Owned	04/26/18
0252	Meadow Branch Avenue ROW	Meadow Branch Avenue ROW	1-1-3-	Filterra	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	0.18	TRUE	0	07/01/17	N/A - City Owned	04/26/18
0253	Meadow Branch Avenue ROW	Meadow Branch Avenue ROW	1-1-3-	Filterra	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	0.33	TRUE	0	07/01/17	N/A - City Owned	04/26/18
0254	Meadow Branch Avenue ROW	Meadow Branch Avenue ROW	1-1-3-	Filterra	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	0.29	TRUE	0	07/01/17	N/A - City Owned	04/26/18
0255	Meadow Branch Avenue ROW	Meadow Branch Avenue ROW	1-1-3-	Filterra	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	0.20	TRUE	0	07/01/17	N/A - City Owned	04/26/18
0256	Meadow Branch Avenue ROW	Meadow Branch Avenue ROW	1-1-3-	Filterra	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	0.16	TRUE	0	07/01/17	N/A - City Owned	04/26/18
0257	Meadow Branch Avenue ROW	Meadow Branch Avenue ROW	1-1-3-	Filterra	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	0.47	TRUE	0	07/01/17	N/A - City Owned	04/26/18
0258	Meadow Branch Avenue ROW	Meadow Branch Avenue ROW	1-1-3-	Filterra	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	0.55	TRUE	0	07/01/17	N/A - City Owned	04/26/18
0259	Meadow Branch Avenue ROW	Meadow Branch Avenue ROW	1-1-3-	Filterra	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	0.36	TRUE	0	07/01/17	N/A - City Owned	04/26/18
0260	Meadow Branch Avenue ROW	Meadow Branch Avenue ROW	1-1-3-	Filterra	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	0.47	TRUE	0	07/01/17	N/A - City Owned	04/26/18
0261	Meadow Branch Avenue ROW	Meadow Branch Avenue ROW	1-1-3-	Filterra	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	0.20	TRUE	0	07/01/17	N/A - City Owned	04/26/18
0262	Meadow Branch Avenue ROW	Meadow Branch Avenue ROW	1-1-3-	Filterra	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	0.17	TRUE	0	07/01/17	N/A - City Owned	04/26/18
0263	Meadow Branch Avenue ROW	Meadow Branch Avenue ROW	1-1-3-	Filterra	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	0.26	TRUE	0	07/01/17	N/A - City Owned	04/26/18
0264	Meadow Branch Avenue ROW	Meadow Branch Avenue ROW	1-1-3-	Filterra	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	0.20	TRUE	0	07/01/17	N/A - City Owned	04/26/18
0265	Meadow Branch Avenue ROW	Meadow Branch Avenue ROW	1-1-3-	Filterra	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	0.43	TRUE	0	07/01/17	N/A - City Owned	04/26/18
0266	Meadow Branch Avenue ROW	Meadow Branch Avenue ROW	1-1-3-	Filterra	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	0.34	TRUE	0	07/01/17	N/A - City Owned	04/26/18
0267	Meadow Branch Avenue ROW	Meadow Branch Avenue ROW	1-1-3-	Filterra	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	0.18	TRUE	0	07/01/17	N/A - City Owned	04/26/18
0268	Meadow Branch Avenue ROW	Meadow Branch Avenue ROW	1-1-3-	Filterra	City of Winchester	15 N. Cameron Street, Winchester, VA 22601	17	0.22	TRUE	0	07/01/17	N/A - City Owned	04/26/18
0269	Malloy Toyota	400 Weems Lane	250-3-38-	Detention Basin (Dry Pond)	Malloy Properties V, LLC	400 Weems Lane, Winchester, VA 22601	17	0.20	TRUE	0.20		None Thus Far	06/08/20
0271	Westminster Canterbury Shenandoah Valley	300 Westminster Canterbury Drive	131-1-1	Filterra	Westminster Canterbury - Shenandoah Valley	300 Westminster Cantebury Dr		0.60	TRUE	0.6		None Thus Far	None Thus Far
0272	Denstock Meadow Branch LLC	420 Meadow Branch Ave	149-01-7C-C	Bioretension Filter	Denstock Meadow Branch	1430 Rolkin Ct.Suite 201Charlottesville, VA 22911						None Thus Far	05/12/20
0273	Denstock Meadow Branch LLC	420 Meadow Branch Ave	149-01-7C-C	Infiltration Area 1	Denstock Meadow Branch	1430 Rolkin Ct.Suite 201Charlottesville, VA 22911						None Thus Far	05/12/20
0274	Denstock Meadow Branch LLC	420 Meadow Branch Ave	149-01-7C-C	Infiltration Area 3	Denstock Meadow Branch	1430 Rolkin Ct.Suite 201Charlottesville, VA 22911						None Thus Far	05/12/20

### **Appendix 3. City of Winchester Outfall Mapping**



- Outfalls
- ☁ Drainage Areas
- ▭ Corporate Limits



**CITY OF WINCHESTER**  
 PUBLIC SERVICES DEPARTMENT  
 15 N CAMERON STREET  
 WINCHESTER, VA 22601  
 PHONE: 540-667-1815  
 FAX: 540-662-3351

**CITY OF WINCHESTER**  
**STREAM OUTFALLS AND DRAINAGE AREAS**  
 SCALE: 1" = 900'  
 DATE: 9/25/2019

OBJECTID	Unique_Ide	Latitude	Longitude	Point_of_D	Material	Diameter	Length	Width	Depth	Field_Note	Receiving_	Impaired	TMDL_Devel	HUC12	Estiamted_
1	TR147	39.197500000000	-78.192900000000	Pipe	Other	6"					Town Run	Yes	Yes	020700040901	1.91107094151697E-02
2	TR146	39.197300000000	-78.192300000000	Pipe	Other	18"					Town Run	Yes	Yes	020700040901	0.944810913129122
3	TR145	39.197200000000	-78.192200000000	Pipe	Concrete	15"					Town Run	Yes	Yes	020700040901	1.86479977503553E-02
4	TR144	39.197100000000	-78.192000000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	1.24589876712233E-02
5	TR143	39.197100000000	-78.192000000000	Pipe	Concrete	48					Town Run	Yes	Yes	020700040901	13.0550172261055
6	TR142	39.197100000000	-78.191900000000								Town Run	Yes	Yes	020700040901	0.268560306779201
7	TR135	39.196000000000	-78.188400000000	Pipe	Concrete	24"					Town Run	Yes	Yes	020700040901	11.5622883082572
8	TR132	39.195300000000	-78.187400000000	Pipe	Other	24"					Town Run	Yes	Yes	020700040901	1.13961531258309
9	TR131	39.195100000000	-78.186500000000	Pipe	CMP	24"					Town Run	Yes	Yes	020700040901	5.54875517087168
10	TR130	39.194700000000	-78.185400000000	Pipe	Other	4"				Pool Drain	Town Run	Yes	Yes	020700040901	6.63307588496857E-02
11	TR128	39.194400000000	-78.184200000000								Town Run	Yes	Yes	020700040901	178.696561967364
12	TR104	39.187700000000	-78.178200000000	Pipe	Other	6" 12"					Town Run	Yes	Yes	020700040901	7.27434930845649E-02
13	TR103	39.187700000000	-78.178100000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	0.826802051468187
14	TR92	39.184900000000	-78.171100000000	Pipe	Other	24"					Town Run	Yes	Yes	020700040901	8.27805754351107
15	TR173	39.184400000000	-78.169400000000		Other	4"					Town Run	Yes	Yes	020700040901	1.63646323284582E-02
16	TR172	39.184400000000	-78.169400000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	6.59213487052694E-02
17	TR89	39.183500000000	-78.165000000000								Town Run	Yes	Yes	020700040901	0.48147178553897
18	TR84	39.183500000000	-78.164900000000	Pipe	Other	6"					Town Run	Yes	Yes	020700040901	7.49877590999378E-02
19	TR82	39.183500000000	-78.164900000000		Other	4"					Town Run	Yes	Yes	020700040901	0.287796738450385
20	TR83	39.183500000000	-78.164900000000	Pipe	Other	6"					Town Run	Yes	Yes	020700040901	7.44068883831757E-02
21	TR85	39.183500000000	-78.164800000000		Other	4"					Town Run	Yes	Yes	020700040901	6.71953832564588E-02
22	TR86	39.183500000000	-78.164700000000		Other	4"					Town Run	Yes	Yes	020700040901	6.57246692315928E-02
23	TR77	39.183400000000	-78.164600000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	3.08328501194211E-02
24	TR62	39.183200000000	-78.163800000000	Pipe	Other	6"					Town Run	Yes	Yes	020700040901	0.312132569677893
25	TR59	39.182400000000	-78.163400000000	Pipe	Other	8"					Town Run	Yes	Yes	020700040901	0.486498581120225
26	TR60	39.182400000000	-78.163500000000	Pipe	Other	4"				Roof drain	Town Run	Yes	Yes	020700040901	5.79756201505938E-02
27	TR57	39.182300000000	-78.163300000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	8.37569875008818E-02
28	TR50	39.181700000000	-78.162700000000	Pipe	Other	24"					Town Run	Yes	Yes	020700040901	9.92375716430522
29	TR49	39.181600000000	-78.162700000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	4.02359275411035E-02
30	TR45	39.181000000000	-78.163000000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	0.028806284041949
31	TR44	39.180900000000	-78.163000000000	Pipe	Other	12"					Town Run	Yes	Yes	020700040901	1.02092582885984
32	TR41	39.180300000000	-78.163100000000	Pipe	Other	12"					Town Run	Yes	Yes	020700040901	0.720796173660779
33	TR40	39.179700000000	-78.163100000000	Curb Cut	Concrete		4'	6"			Town Run	Yes	Yes	020700040901	0.700234401201954
34	TR38	39.179100000000	-78.163300000000	Curb Cut	Concrete		4'	6"			Town Run	Yes	Yes	020700040901	0.625723968541308
35	TR37	39.176800000000	-78.164600000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	4.12013803591192E-02
36	TR32	39.176600000000	-78.164700000000	Pipe	Concrete		4'	4'			Town Run	Yes	Yes	020700040901	113.498550970317
37	TR29	39.176300000000	-78.164600000000	Pipe	Other						Town Run	Yes	Yes	020700040901	0.158733736420088
38	TR25	39.176100000000	-78.164200000000	Pipe	Other	15"					Town Run	Yes	Yes	020700040901	3.66436616423359E-02
39	TR22	39.176100000000	-78.164000000000	Pipe	Other	15"					Town Run	Yes	Yes	020700040901	0.701299704424943
40	TR23	39.176000000000	-78.163600000000	Pipe	Concrete	36"					Town Run	Yes	Yes	020700040901	13.1391894881834
41	TR21	39.175800000000	-78.163200000000	Pipe	Concrete	12"					Town Run	Yes	Yes	020700040901	6.88861399153393
42	TR18	39.174800000000	-78.163000000000	Pipe	CMP	15"					Town Run	Yes	Yes	020700040901	0.437522188102709
43	TR11	39.171500000000	-78.161900000000	Pipe	Other	18"					Town Run	Yes	Yes	020700040901	1.78267419578629
44	TR3	39.170000000000	-78.160600000000	Pipe	Concrete	24"					Town Run	Yes	Yes	020700040901	4.94045371106426
45	TR4	39.170100000000	-78.160400000000	Pipe							Town Run	Yes	Yes	020700040901	2.52629310439879
46	TR1	39.170100000000	-78.159700000000	Ditch	Other		2'	6"			Town Run	Yes	Yes	020700040901	0.185111164654011
47	TR2	39.170200000000	-78.159900000000	Pipe	Other	18"					Town Run	Yes	Yes	020700040901	275.087725277762
48	TR5	39.170300000000	-78.161000000000	Pipe	Other	6"				Roof drain	Town Run	Yes	Yes	020700040901	6.49885421783559E-02
49	TR6	39.170400000000	-78.161100000000	Curb Cut	Concrete		2'	6"			Town Run	Yes	Yes	020700040901	0.36294607567964
50	TR7	39.170600000000	-78.161200000000	Curb Cut	Concrete		2'	6"			Town Run	Yes	Yes	020700040901	0.283344415815987

OBJECTID	Unique_Ide	Latitude	Longitude	Point_of_D	Material	Diameter	Length	Width	Depth	Field_Note	Receiving_	Impaired	TMDL_Devel	HUC12	Estiamted_
51	TR8	39.17090000000	-78.16150000000	Pipe	Concrete	18"					Town Run	Yes	Yes	020700040901	24.9060668177542
52	TR9	39.17090000000	-78.16150000000	Curb Cut	Concrete		2'	6"			Town Run	Yes	Yes	020700040901	0.208898066834344
53	TR10	39.17100000000	-78.16150000000	Other	Concrete		2'	6"			Town Run	Yes	Yes	020700040901	0.1433855217527
54	TR12	39.17150000000	-78.16190000000	Ditch	Other		4'	6"			Town Run	Yes	Yes	020700040901	1.30521045049537
55	TR13	39.17230000000	-78.16220000000	Ditch	Grouted Riprap		6'	1'			Town Run	Yes	Yes	020700040901	10.8706985239355
56	TR14	39.17220000000	-78.16300000000	Curb Cut	Concrete		2'	6"			Town Run	Yes	Yes	020700040901	0.254167058299363
57	TR15	39.17200000000	-78.16290000000	Curb Cut	Concrete		2'	6"			Town Run	Yes	Yes	020700040901	0.277206043645228
58	TR16	39.17170000000	-78.16270000000	Curb Cut	Concrete		2'	6"			Town Run	Yes	Yes	020700040901	0.576457578685474
59	TR17	39.17270000000	-78.16310000000	Ditch	Natural		2'	6"			Town Run	Yes	Yes	020700040901	3.50050596658813
60	TR19	39.17280000000	-78.16310000000	Pipe	Other	8"					Town Run	Yes	Yes	020700040901	0.224139436851035
61	TR133	39.17280000000	-78.16250000000	Pipe	Other		18"				Town Run	Yes	Yes	020700040901	1.52743005744259
62	TR24	39.17610000000	-78.16410000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	0.215661041660205
63	TR26	39.17610000000	-78.16440000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	0.130389574844058
64	TR27	39.17610000000	-78.16450000000	Pipe	Other	2"				Roof drain	Town Run	Yes	Yes	020700040901	7.17865717680435E-02
65	TR28	39.17620000000	-78.16450000000	Pipe	CMP	15"					Town Run	Yes	Yes	020700040901	13.2113982047202
66	TR30	39.17650000000	-78.16470000000	Pipe	Other		8"	8"			Town Run	Yes	Yes	020700040901	6.57907136143989E-02
67	TR31	39.17660000000	-78.16470000000	Pipe	Other		8"	8"			Town Run	Yes	Yes	020700040901	2.50396949300194E-02
68	TR33	39.17670000000	-78.16460000000	Pipe	Other	12"					Town Run	Yes	Yes	020700040901	6.91656562849519E-02
69	TR34	39.17670000000	-78.16470000000	Pipe	Other	12"					Town Run	Yes	Yes	020700040901	5.14509975831009E-02
70	TR35	39.17670000000	-78.16460000000	Pipe	Other	2"					Town Run	Yes	Yes	020700040901	9.72840132102334E-02
71	TR36	39.17670000000	-78.16470000000	Ditch	Concrete		2'	3"			Town Run	Yes	Yes	020700040901	0.190457006894263
72	TR39	39.17690000000	-78.16460000000	Pipe	Other	6"					Town Run	Yes	Yes	020700040901	0.195787039701116
73	TR42	39.18030000000	-78.16310000000	Curb Cut	Concrete		4'	6"			Town Run	Yes	Yes	020700040901	0.351478070094694
74	TR43	39.18050000000	-78.16320000000	Pipe	CMP	18"					Town Run	Yes	Yes	020700040901	0.598587134121305
75	TR46	39.18120000000	-78.16290000000	Pipe	Concrete	15"					Town Run	Yes	Yes	020700040901	1.23867443310606
76	TR47	39.18130000000	-78.16280000000	Pipe	Concrete	15"					Town Run	Yes	Yes	020700040901	0.666784442327949
77	TR48	39.18150000000	-78.16270000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	4.10282438898048E-02
78	TR51	39.18170000000	-78.16270000000	Pipe	Other	6"					Town Run	Yes	Yes	020700040901	0.131724657830149
79	TR52	39.18180000000	-78.16270000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	8.97476667494663E-02
80	TR53	39.18220000000	-78.16310000000	Pipe	Concrete		6'	4'			Town Run	Yes	Yes	020700040901	42.9014421023343
81	TR54	39.18210000000	-78.16310000000	Ditch	Concrete		4'	6"			Town Run	Yes	Yes	020700040901	0.555240147095736
82	TR55	39.18220000000	-78.16310000000	Ditch	Concrete		4'	6"			Town Run	Yes	Yes	020700040901	0.103074124645271
83	TR56	39.18220000000	-78.16310000000	Ditch	Concrete		4'	6"			Town Run	Yes	Yes	020700040901	0.546842475636978
84	TR58	39.18230000000	-78.16330000000	Pipe	Other	2"					Town Run	Yes	Yes	020700040901	9.81087682712817E-02
85	TR61	39.18320000000	-78.16370000000	Pipe	Other	12"					Town Run	Yes	Yes	020700040901	0.537504579512567
86	TR63	39.18320000000	-78.16380000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	0.103953878930183
87	TR64	39.18330000000	-78.16390000000	Pipe	Other	6"					Town Run	Yes	Yes	020700040901	0.174657344755739
88	TR65	39.18330000000	-78.16400000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	5.41882950326374E-02
89	TR66	39.18330000000	-78.16410000000	Pipe	Concrete	48"					Town Run	Yes	Yes	020700040901	244.033144465234
90	TR67	39.18330000000	-78.16410000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	6.72793044677919E-02
91	TR68	39.18330000000	-78.16420000000	Pipe	Concrete	24"					Town Run	Yes	Yes	020700040901	0.982705850881812
92	TR69	39.18330000000	-78.16420000000	Pipe	Concrete	24"					Town Run	Yes	Yes	020700040901	6.14939922248523E-02
93	TR70	39.18330000000	-78.16430000000	Pipe	Concrete	24"					Town Run	Yes	Yes	020700040901	8.59935454808601
94	TR71	39.18330000000	-78.16440000000	Pipe	Concrete	24"					Town Run	Yes	Yes	020700040901	4.58469846606005E-02
95	TR72	39.18330000000	-78.16430000000	Pipe	Concrete	24"					Town Run	Yes	Yes	020700040901	0.272446011331066
96	TR73	39.18330000000	-78.16440000000	Pipe	Concrete	18"					Town Run	Yes	Yes	020700040901	0.152240035894251
97	TR74	39.18330000000	-78.16440000000	Pipe	CMP	18"					Town Run	Yes	Yes	020700040901	0.107427729662589
98	TR75	39.18330000000	-78.16440000000	Pipe	Concrete	24"					Town Run	Yes	Yes	020700040901	7.76959349390195
99	TR76	39.18340000000	-78.16440000000	Pipe	CMP	24"					Town Run	Yes	Yes	020700040901	4.81029522748552
100	TR78	39.18340000000	-78.16460000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	5.70615855602798E-02



OBJECTID	Unique_Ide	Latitude	Longitude	Point_of_D	Material	Diameter	Length	Width	Depth	Field_Note	Receiving_	Impaired	TMDL_Devel	HUC12	Estiamted_
101	TR79	39.183400000000	-78.164600000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	0.197553566205688
102	TR80	39.183400000000	-78.164600000000	Pipe	Other	6"					Town Run	Yes	Yes	020700040901	2.51659564061187E-02
103	TR81	39.183400000000	-78.164700000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	2.42744651472521E-02
104	TR87	39.183500000000	-78.165100000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	0.092377383422047
105	TR88	39.183500000000	-78.165000000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	0.271452483899926
106	TR181	39.183500000000	-78.164900000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	0.141118824952695
107	TR180	39.184800000000	-78.170700000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	0.073798282796062
108	TR93	39.184800000000	-78.170700000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	3.54314015437762E-02
109	TR94	39.185600000000	-78.172100000000	Pipe	Other	36"					Town Run	Yes	Yes	020700040901	12.8755658880941
110	TR95	39.186500000000	-78.173700000000	Pipe	Concrete	48"					Town Run	Yes	Yes	020700040901	23.7785030606851
111	TR96	39.186800000000	-78.174600000000	Other	Concrete	36"					Town Run	Yes	Yes	020700040901	0.214936119091453
112	TR97	39.186500000000	-78.174700000000	Other	Concrete	48"					Town Run	Yes	Yes	020700040901	0.574323127484574
113	TR98	39.186400000000	-78.174900000000	Other	Other	12"					Town Run	Yes	Yes	020700040901	0.455690165243986
114	TR99	39.186700000000	-78.175500000000	Other	Concrete	48"					Town Run	Yes	Yes	020700040901	0.264469081762765
115	TR100	39.186500000000	-78.175600000000	Other	Concrete	48"					Town Run	Yes	Yes	020700040901	7.74428735786067
116	TR101	39.186800000000	-78.175700000000	Pipe	Concrete	48"					Town Run	Yes	Yes	020700040901	0.452109721025736
117	TR102	39.187400000000	-78.176500000000	Pipe	Concrete	24"					Town Run	Yes	Yes	020700040901	7.29170731762965
118	TR105	39.187800000000	-78.178400000000	Pipe	Other	6"					Town Run	Yes	Yes	020700040901	2.80402973516235
119	TR106	39.188000000000	-78.178900000000	Pipe	Other	12"					Town Run	Yes	Yes	020700040901	9.73678525538106E-02
120	TR107	39.188200000000	-78.178800000000	Pipe	Concrete	24"					Town Run	Yes	Yes	020700040901	6.25392370007856
121	TR108	39.188000000000	-78.179200000000	Curb Cut	Concrete		2'	6"			Town Run	Yes	Yes	020700040901	0.142881932710379
122	TR109	39.188000000000	-78.179500000000	Pipe	Concrete	18"					Town Run	Yes	Yes	020700040901	0.359657010376062
123	TR110	39.188000000000	-78.179700000000	Pipe	Concrete	18 x 30					Town Run	Yes	Yes	020700040901	56.1218007329094
124	TR111	39.188300000000	-78.179800000000	Pipe	Concrete	30"					Town Run	Yes	Yes	020700040901	7.3591163772401
125	TR112	39.189700000000	-78.178200000000	Pipe	Concrete	15"					Town Run	Yes	Yes	020700040901	118.97690423989
126	TR113	39.190100000000	-78.178600000000	Pipe	CMP	15"					Town Run	Yes	Yes	020700040901	2.71196810519777
127	TR114	39.189700000000	-78.179200000000	Ditch	Grouted Riprap		2'	6"			Town Run	Yes	Yes	020700040901	1.17684776374648
128	TR115	39.190400000000	-78.179700000000	Curb Cut	Grouted Riprap		2'	6"			Town Run	Yes	Yes	020700040901	0.403882871628776
129	TR116	39.190600000000	-78.180100000000	Curb Cut	Concrete		2'	6"			Town Run	Yes	Yes	020700040901	2.07953510417994
130	TR117	39.190900000000	-78.180600000000	Other	Concrete		15'	2'		Pond control structure	Town Run	Yes	Yes	020700040901	9.67412760321989
131	TR118	39.191500000000	-78.181500000000	Ditch	Grouted Riprap		2'	6"			Town Run	Yes	Yes	020700040901	2.63477085504655
132	TR119	39.191600000000	-78.181400000000	Ditch	Grouted Riprap		2'	6"			Town Run	Yes	Yes	020700040901	0.58337544834652
133	TR120	39.191700000000	-78.181700000000	Ditch	Grouted Riprap		2'	6"			Town Run	Yes	Yes	020700040901	0.912474874714687
134	TR121	39.191600000000	-78.181700000000	Ditch	Grouted Riprap		2'	6"			Town Run	Yes	Yes	020700040901	0.951565912067969
135	TR122	39.191700000000	-78.182000000000	Ditch	Concrete		10'	3'			Town Run	Yes	Yes	020700040901	201.239132917736
136	TR123	39.191800000000	-78.181900000000	Ditch	Concrete		10'	3'			Town Run	Yes	Yes	020700040901	54.9249691897027
137	TR124	39.192000000000	-78.182500000000	Other	Concrete	30"					Town Run	Yes	Yes	020700040901	3.0143095059328
138	TR125	39.192500000000	-78.183700000000	Pipe	Concrete	30"					Town Run	Yes	Yes	020700040901	3.84695313497705
139	TR126	39.192900000000	-78.184600000000	Other	Concrete		3'	2'			Town Run	Yes	Yes	020700040901	0.122159551885466
140	TR127	39.192800000000	-78.184700000000	Other	Concrete		3'	2'			Town Run	Yes	Yes	020700040901	0.519922199429827
141	TR129	39.193200000000	-78.185500000000	Other	Concrete		3'	20'			Town Run	Yes	Yes	020700040901	3.75558508890883
142	TR134	39.195600000000	-78.188100000000	Ditch	Natural		2'	6"			Town Run	Yes	Yes	020700040901	6.67636690508506
143	TR136	39.196100000000	-78.188300000000	Pipe	Concrete	24"					Town Run	Yes	Yes	020700040901	0.166400823674997
144	TR137	39.196100000000	-78.189500000000	Pipe	Concrete	24"					Town Run	Yes	Yes	020700040901	2.97144310116972
145	TR138	39.196100000000	-78.190300000000	Pipe	Concrete	30"					Town Run	Yes	Yes	020700040901	1.66840175321243
146	TR139	39.196100000000	-78.190800000000	Pipe	Concrete	15"					Town Run	Yes	Yes	020700040901	1.38147430780886
147	TR140	39.196100000000	-78.190900000000	Pipe	Concrete	24"					Town Run	Yes	Yes	020700040901	1.78894809345812
148	TR141	39.196200000000	-78.190900000000	Pipe	Concrete	15"					Town Run	Yes	Yes	020700040901	1.51221755458711
149	TR148	39.197500000000	-78.192900000000	Pipe	Concrete		6'	6'			Town Run	Yes	Yes	020700040901	1.6211066650774
150	TR149	39.197700000000	-78.191000000000	Pipe	Concrete	30"					Town Run	Yes	Yes	020700040901	4.99468128858555

OBJECTID	Unique_Ide	Latitude	Longitude	Point_of_D	Material	Diameter	Length	Width	Depth	Field_Note	Receiving_	Impaired	TMDL_Devel	HUC12	Estiamted_
151	TR150	39.197700000000	-78.190800000000	Pipe	Other	15"					Town Run	Yes	Yes	020700040901	1.40942250900382
152	TR151	39.197400000000	-78.190300000000	Pipe	Concrete	36"					Town Run	Yes	Yes	020700040901	2.90612253903748
153	TR152	39.196700000000	-78.189300000000	Pipe	Other	18"					Town Run	Yes	Yes	020700040901	2.72574135605823
154	TR153	39.183600000000	-78.165800000000	Other	Concrete		3'	3'			Town Run	Yes	Yes	020700040901	9.70190212109223
155	TR154	39.183700000000	-78.165800000000	Other	Concrete		3'	3'			Town Run	Yes	Yes	020700040901	15.7096264106388
156	TR155	39.183700000000	-78.165800000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	6.88507112762242E-02
157	TR156	39.183700000000	-78.166300000000	Other	Concrete		3'	3'			Town Run	Yes	Yes	020700040901	0.164215326539128
158	TR157	39.183700000000	-78.166200000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	6.41451748219476E-02
159	TR158	39.183800000000	-78.166100000000	Other	Concrete	36"					Town Run	Yes	Yes	020700040901	0.116057415953309
160	TR159	39.183700000000	-78.166400000000	Pipe	Other	6"					Town Run	Yes	Yes	020700040901	0.205717151380358
161	TR160	39.183800000000	-78.166500000000	Other	Concrete		2'	4'			Town Run	Yes	Yes	020700040901	4.69009122035415
162	TR161	39.183800000000	-78.166800000000	Other	Concrete		2'	2'			Town Run	Yes	Yes	020700040901	0.471310964033628
163	TR162	39.184000000000	-78.166900000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	0.160485421661929
164	TR163	39.184100000000	-78.167000000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	4.10336423056159E-02
165	TR164	39.184000000000	-78.167000000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	4.31068006720586E-02
166	TR165	39.184000000000	-78.167100000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	6.94699664430714E-02
167	TR166	39.184100000000	-78.167200000000	Other	Concrete	4'	8'				Town Run	Yes	Yes	020700040901	3.95306135216593
168	TR167	39.184000000000	-78.167300000000	Other	Concrete		2'	8'			Town Run	Yes	Yes	020700040901	20.8788973828074
169	TR169	39.184200000000	-78.167300000000	Other	Grouted Riprap		2'	8'			Town Run	Yes	Yes	020700040901	19.7191552750979
170	TR168	39.184400000000	-78.168200000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	0.247005825624886
171	TR171	39.184600000000	-78.168600000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	1.98546535421771E-02
172	TR170	39.184500000000	-78.168600000000	Other	Concrete		2'	8'			Town Run	Yes	Yes	020700040901	0.713377618325939
173	TR174	39.184500000000	-78.168600000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	0.01614733438567
174	TR175	39.184600000000	-78.168700000000	Other	Concrete		2'	6'			Town Run	Yes	Yes	020700040901	4.21648268190054
175	TR179	39.184400000000	-78.169500000000	Pipe	Other	"					Town Run	Yes	Yes	020700040901	2.70343075534596E-02
176	TR177	39.183600000000	-78.170000000000	Pipe	Other	6"					Town Run	Yes	Yes	020700040901	4.62035398629631E-02
177	TR178	39.184600000000	-78.170200000000	Other	Concrete						Town Run	Yes	Yes	020700040901	1.59201859933474
178	TR176	39.184700000000	-78.170300000000								Town Run	Yes	Yes	020700040901	60.644568814441
179	TRO	0.000000000000	0.000000000000	Pipe	Concrete	15"				Not a regulated outfall.	Town Run	Yes	Yes	020700040901	0.893879099662689
180	TR181	0.000000000000	0.000000000000	Pipe	Unknown						Town Run	Yes	Yes	020700040901	0.141118824952695
181	TR182	0.000000000000	0.000000000000	Pipe	Unknown						Town Run	Yes	Yes	020700040901	189.603462417491
182	TR182	0.000000000000	0.000000000000	Pipe	Concrete						Town Run	Yes	Yes	020700040901	189.603462417491
183	TR183	0.000000000000	0.000000000000							Not located in field. Delineated from GIS info.				020700040901	
184	TR184	0.000000000000	0.000000000000							Not located in field. Delineated from GIS.				020700040901	
185	TR185	0.000000000000	0.000000000000							Not located in the field. Delineated based on GIS				020700040901	
186	TR185	0.000000000000	0.000000000000											020700040901	



OBJECTID	Unique_Ide	Latitude	Longitude	Point_of_D	Material	Diameter	Length	Width	Depth	Field_Note	Receiving_	Impaired	TMDL_Devel	HUC12	Estimated_
1	AC1	39.1675000000	-78.1543000000	Pipe	CMP	18"					Abrams Creek	Yes	Yes	020700040902	18.3330870602523
2	AC5	39.1684000000	-78.1583000000	Pipe	Other	18"					Abrams Creek	Yes	Yes	020700040902	7.14853461069664
3	AC6	39.1673000000	-78.1589000000	Pipe	Concrete	38 x 24!					Abrams Creek	Yes	Yes	020700040902	7.97739614998404
4	AC7	39.1672000000	-78.1590000000	Pipe	CMP	12					Abrams Creek	Yes	Yes	020700040902	1.42533294396259
5	AC8	39.1669000000	-78.1590000000	Pipe	CMP	18"				Outfall for wet pond. Inline stream.	Abrams Creek	Yes	Yes	020700040902	0.606292229059304
6	AC9	39.1666000000	-78.1592000000	Pipe	CMP	21"					Abrams Creek	Yes	Yes	020700040902	3.36760248237601
7	AC12	39.1663000000	-78.1594000000	Other	Concrete					Drop inlet could not locate outfall into stream	Abrams Creek	Yes	Yes	020700040902	0.558005696390543
8	AC14	39.1657000000	-78.1596000000	Curb Cut	Concrete		2'	6"			Abrams Creek	Yes	Yes	020700040902	0.636114287619572
9	AC16	39.1645000000	-78.1602000000	Pipe	Concrete	24"					Abrams Creek	Yes	Yes	020700040902	14.8562444039031
10	AC17	39.1645000000	-78.1603000000	Pipe	CMP	36"					Abrams Creek	Yes	Yes	020700040902	10.6287741611139
11	AC15	39.1646000000	-78.1603000000	Pipe	Concrete	60					Abrams Creek	Yes	Yes	020700040902	18.1839954184506
12	AC14	39.1646000000	-78.1603000000	Pipe	Concrete	15					Abrams Creek	Yes	Yes	020700040902	0.636114287619572
13	AC20	39.1640000000	-78.1608000000	Curb Cut	Concrete		2'	6"			Abrams Creek	Yes	Yes	020700040902	0.151633355290411
14	AC21	39.1638000000	-78.1611000000	Curb Cut	Concrete		2'	6"			Abrams Creek	Yes	Yes	020700040902	0.115612539695503
15	AC22	39.1636000000	-78.1615000000	Curb Cut	Concrete		2'	6"			Abrams Creek	Yes	Yes	020700040902	0.137704094545544
16	AC22	39.1635000000	-78.1616000000	Pipe	CMP	18"					Abrams Creek	Yes	Yes	020700040902	0.137704094545544
17	AC23	39.1635000000	-78.1616000000	Curb Cut	Concrete		2'	6"			Abrams Creek	Yes	Yes	020700040902	0.525636338834166
18	AC24	39.1626000000	-78.1632000000	Pipe	CMP	15"					Abrams Creek	Yes	Yes	020700040902	4.96559538690058
19	AC25	39.1624000000	-78.1643000000	Pipe	CMP	48"					Abrams Creek	Yes	Yes	020700040902	22.5012432700939
20	AC26	39.1629000000	-78.1653000000	Curb Cut	Concrete		3'	6"			Abrams Creek	Yes	Yes	020700040902	22.5512586814321
21	AC27	39.1631000000	-78.1656000000	Pipe	Concrete	60"					Abrams Creek	Yes	Yes	020700040902	85.6804715284653
22	AC45	39.1640000000	-78.1664000000	Pipe	Concrete	24"					Abrams Creek	Yes	Yes	020700040902	7.31814788918363
23	AC47	39.1639000000	-78.1668000000	Pipe	Concrete	15"					Abrams Creek	Yes	Yes	020700040902	0.536480712091713
24	AC46	39.1640000000	-78.1667000000	Pipe	Concrete	18"					Abrams Creek	Yes	Yes	020700040902	2.65918963197453
25	AC49	39.1648000000	-78.1689000000	Pipe	Concrete	12"					Abrams Creek	Yes	Yes	020700040902	0.92729984892364
26	AC51	39.1647000000	-78.1700000000	Pipe	Concrete	6"					Abrams Creek	Yes	Yes	020700040902	3.21255848093938E-02
27	AC51	39.1647000000	-78.1703000000	Pipe	Other	6"				Roof drain	Abrams Creek	Yes	Yes	020700040902	3.21255848093938E-02
28	AC53	39.1647000000	-78.1703000000	Pipe	Other	4"					Abrams Creek	Yes	Yes	020700040902	3.93858442582114E-02
29	AC54	39.1646000000	-78.1706000000	Pipe	Other	8"					Abrams Creek	Yes	Yes	020700040902	0.116913029815461
30	AC55	39.1646000000	-78.1708000000	Pipe	Other	6"					Abrams Creek	Yes	Yes	020700040902	0.852420939537308
31	AC59	39.1650000000	-78.1720000000	Pipe	Concrete	36"					Abrams Creek	Yes	Yes	020700040902	7.55367433182378
32	AC59	39.1650000000	-78.1726000000	Pipe	Concrete	18"					Abrams Creek	Yes	Yes	020700040902	7.55367433182378
33	AC158	39.1648000000	-78.1761000000								Abrams Creek	Yes	Yes	020700040902	1.47682076131297
34	AC157	39.1644000000	-78.1778000000	Pipe							Abrams Creek	Yes	Yes	020700040902	1.89105936706258
35	AC156	39.1642000000	-78.1785000000								Abrams Creek	Yes	Yes	020700040902	8.0537280279997
36	AC155	39.1642000000	-78.1796000000								Abrams Creek	Yes	Yes	020700040902	3.95627677319865
37	AC154	39.1644000000	-78.1801000000								Abrams Creek	Yes	Yes	020700040902	11.9686932553953
38	AC71	39.1702000000	-78.1826000000	Other	Concrete					Curb inlet into Stream below	Abrams Creek	Yes	Yes	020700040902	0.504105440756224
39	AC76	39.1720000000	-78.1836000000	Pipe	Other	24"					Abrams Creek	Yes	Yes	020700040902	8.89818057246878
40	AC75	39.1718000000	-78.1836000000	Pipe	Other	15"					Abrams Creek	Yes	Yes	020700040902	0.770686691056888
41	AC2	39.1676000000	-78.1549000000	Pipe	CMP	18"					Abrams Creek	Yes	Yes	020700040902	7.10548843689292
42	AC3	39.1675000000	-78.1554000000	Curb Cut	Concrete		18	6			Abrams Creek	Yes	Yes	020700040902	0.767535407858058
43	AC4	39.1676000000	-78.1554000000	Pipe	Other	6"					Abrams Creek	Yes	Yes	020700040902	0.386705551543535
44	AC5	39.1708000000	-78.1566000000	Other	Concrete					Inlet at amphitheater at Park	Abrams Creek	Yes	Yes	020700040902	7.14853461069664
45	AC10	39.1665000000	-78.1587000000	Pipe	CMP	18"					Abrams Creek	Yes	Yes	020700040902	6.89393436354541
46	AC11	39.1659000000	-78.1589000000	Pipe	Concrete	24"					Abrams Creek	Yes	Yes	020700040902	5.14348126421565
47	AC13	39.1663000000	-78.1595000000	Curb Cut	Concrete		2	6"			Abrams Creek	Yes	Yes	020700040902	1.24257116282192
48	AC13	39.1662000000	-78.1595000000	Curb Cut	Concrete		2'	6"			Abrams Creek	Yes	Yes	020700040902	1.24257116282192
49	AC18	39.1641000000	-78.1607000000	Pipe	Concrete	15"					Abrams Creek	Yes	Yes	020700040902	0.326611824245721

OBJECTID	Unique_Ide	Latitude	Longitude	Point_of_D	Material	Diameter	Length	Width	Depth	Field_Note	Receiving_	Impaired	TMDL_Devel	HUC12	Estimated_
50	AC19	39.1642000000	-78.1606000000	Pipe	Concrete	15					Abrams Creek	Yes	Yes	020700040902	0.876013823588502
51	AC28	39.1633000000	-78.1658000000	Curb Cut	Concrete		3'	6"			Abrams Creek	Yes	Yes	020700040902	0.324165849157145
52	AC29	39.1636000000	-78.1664000000	Pipe	Concrete	15"				Side of culvert at Pleasant Valley Road	Abrams Creek	Yes	Yes	020700040902	10.5781822155192
53	AC29	39.1638000000	-78.1662000000	Pipe	Concrete	15"				At culvert under pleasant valley road	Abrams Creek	Yes	Yes	020700040902	10.5781822155192
54	AC30	39.1637000000	-78.1664000000	Other	Concrete	6"				Bridge scupper	Abrams Creek	Yes	Yes	020700040902	1.09872506462479E-02
55	AC31	39.1637000000	-78.1664000000	Other	Concrete	6"				Bridge scupper	Abrams Creek	Yes	Yes	020700040902	1.02685515355686E-02
56	AC32	39.1637000000	-78.1663000000	Other	Concrete	6"				Bridge scupper	Abrams Creek	Yes	Yes	020700040902	9.41789017191844E-03
57	AC33	39.1637000000	-78.1663000000	Other	Concrete	6"				Bridge scupper	Abrams Creek	Yes	Yes	020700040902	8.44653289292504E-03
58	AC34	39.1638000000	-78.1663000000	Other	Concrete	6"				Bridge scupper	Abrams Creek	Yes	Yes	020700040902	1.17259362543233E-02
59	AC35	39.1638000000	-78.1663000000	Other	Concrete	6"					Abrams Creek	Yes	Yes	020700040902	0.018406233507053
60	AC36	39.1639000000	-78.1664000000	Other	Concrete	6"					Abrams Creek	Yes	Yes	020700040902	8.95562553725821E-03
61	AC37	39.1639000000	-78.1664000000	Other	Concrete	6"					Abrams Creek	Yes	Yes	020700040902	6.57115482779274E-03
62	AC38	39.1639000000	-78.1665000000	Other	Concrete	6"					Abrams Creek	Yes	Yes	020700040902	7.2124949448762E-03
63	AC39	39.1638000000	-78.1665000000	Other	Concrete	6"					Abrams Creek	Yes	Yes	020700040902	7.06018416394385E-03
64	AC40	39.1638000000	-78.1665000000	Other	Concrete	6"					Abrams Creek	Yes	Yes	020700040902	8.80452843876427E-03
65	AC41	39.1638000000	-78.1665000000	Other	Concrete	6"					Abrams Creek	Yes	Yes	020700040902	8.28472787781651E-03
66	AC42	39.1638000000	-78.1666000000	Pipe	Concrete	36"					Abrams Creek	Yes	Yes	020700040902	6.72461810840014E-02
67	AC43	39.1638000000	-78.1665000000	Pipe	Concrete	15"					Abrams Creek	Yes	Yes	020700040902	0.18761256770415
68	AC44	39.1639000000	-78.1664000000	Pipe	Concrete	15"					Abrams Creek	Yes	Yes	020700040902	9.93770666273565E-02
69	AC47	39.1642000000	-78.1677000000	Pipe	Other	12"					Abrams Creek	Yes	Yes	020700040902	0.536480712091713
70	AC48	39.1643000000	-78.1680000000	Pipe	Concrete	6' x 4'					Abrams Creek	Yes	Yes	020700040902	6.48296063233411
71	AC50	39.1648000000	-78.1689000000	Pipe	Concrete	24"					Abrams Creek	Yes	Yes	020700040902	4.86895345189806
72	AC52	39.1647000000	-78.1702000000	Pipe	Concrete	15"					Abrams Creek	Yes	Yes	020700040902	1.91947786344223
73	AC56	39.1646000000	-78.1712000000	Pipe	Other	4"				Roof drain	Abrams Creek	Yes	Yes	020700040902	2.78302338049059E-02
74	AC56	39.1645000000	-78.1713000000	Pipe	Other	4"				Roof drain	Abrams Creek	Yes	Yes	020700040902	2.78302338049059E-02
75	AC58	39.1649000000	-78.1716000000	Pipe	Concrete	30"					Abrams Creek	Yes	Yes	020700040902	1.92818296262652
76	AC59	39.1647000000	-78.1717000000	Pipe	Concrete	42"					Abrams Creek	Yes	Yes	020700040902	7.55367433182378
77	AC60	39.1650000000	-78.1730000000	Pipe	Other	12"					Abrams Creek	Yes	Yes	020700040902	0.286995766582464
78	AC61	39.1633000000	-78.1624000000	Curb Cut	Concrete		3'	6"			Abrams Creek	Yes	Yes	020700040902	1.05803446488568
79	AC62	39.1630000000	-78.1626000000	Curb Cut	Concrete		3'	6"			Abrams Creek	Yes	Yes	020700040902	0.203286819044244
80	AC63	39.1630000000	-78.1628000000	Curb Cut	Concrete		3'	6"			Abrams Creek	Yes	Yes	020700040902	4.28826731900947E-02
81	AC64	39.1629000000	-78.1629000000	Curb Cut	Concrete		3'	6"			Abrams Creek	Yes	Yes	020700040902	0.0860982020233
82	AC65	39.1629000000	-78.1630000000	Curb Cut	Concrete		3'	6"			Abrams Creek	Yes	Yes	020700040902	0.23033025165506
83	AC64	39.1650000000	-78.1733000000	Curb Cut	Concrete		2'	6"			Abrams Creek	Yes	Yes	020700040902	0.0860982020233
84	AC66	39.1650000000	-78.1738000000	Curb Cut	Concrete		2'	6"			Abrams Creek	Yes	Yes	020700040902	0.4389950457915
85	AC67	39.1650000000	-78.1740000000	Curb Cut	Concrete		2'	6"			Abrams Creek	Yes	Yes	020700040902	0.853398490694399
86	AC68	39.1690000000	-78.1821000000	Curb Cut	Concrete		6'	6"			Abrams Creek	Yes	Yes	020700040902	4.16156334352798
87	AC69	39.1689000000	-78.1821000000	Pipe	Other	4"				Underdrain outfall for permeable pavers	Abrams Creek	Yes	Yes	020700040902	0.235028976700521
88	AC70	39.1691000000	-78.1815000000	Curb Cut	Natural		2'	2"			Abrams Creek	Yes	Yes	020700040902	0.27576609875967
89	AC70	39.1700000000	-78.1819000000	Pipe	Concrete	30"					Abrams Creek	Yes	Yes	020700040902	0.27576609875967
90	AC72	39.1704000000	-78.1827000000	Other	Concrete					Curb inlet into stream below	Abrams Creek	Yes	Yes	020700040902	0.317289125689952
91	AC73	39.1704000000	-78.1827000000	Pipe	Other	15"					Abrams Creek	Yes	Yes	020700040902	7.30084190487048E-02
92	AC73	39.1708000000	-78.1833000000	Pipe	CMP	15"					Abrams Creek	Yes	Yes	020700040902	7.30084190487048E-02
93	AC74	39.1708000000	-78.1834000000	Pipe	Concrete	18"					Abrams Creek	Yes	Yes	020700040902	2.59194146574027
94	AC76	39.1731000000	-78.1843000000	Pipe	CMP	15"					Abrams Creek	Yes	Yes	020700040902	8.89818057246878
95	AC77	39.1738000000	-78.1853000000	Pipe	Concrete	15"					Abrams Creek	Yes	Yes	020700040902	98.8163119591523
96	AC77	39.1743000000	-78.1869000000	Ditch	Natural						Abrams Creek	Yes	Yes	020700040902	98.8163119591523
97	AC78	39.1749000000	-78.1880000000	Pipe	CMP	24"					Abrams Creek	Yes	Yes	020700040902	0.440686297335793
98	AC79	39.1747000000	-78.1883000000	Pipe	CMP	15"					Abrams Creek	Yes	Yes	020700040902	0.786474572386306

OBJECTID	Unique_Ide	Latitude	Longitude	Point_of_D	Material	Diameter	Length	Width	Depth	Field_Note	Receiving_	Impaired	TMDL_Devel	HUC12	Estimated_
99	AC78	39.1768000000	-78.1934000000	Pipe	Other	6"					Abrams Creek	Yes	Yes	020700040902	0.440686297335793
100	AC79	39.1769000000	-78.1938000000	Pipe	Other	6"					Abrams Creek	Yes	Yes	020700040902	0.786474572386306
101	AC80	39.1774000000	-78.1951000000	Pipe	Other	6"					Abrams Creek	Yes	Yes	020700040902	1.90085938784824
102	AC81	39.1776000000	-78.1953000000	Pipe	Other	6"					Abrams Creek	Yes	Yes	020700040902	1.1697671623468
103	AC82	39.1781000000	-78.1957000000	Pipe	Concrete	24"					Abrams Creek	Yes	Yes	020700040902	10.9110403709579
104	AC84	39.1790000000	-78.1980000000	Pipe	Other	6"					Abrams Creek	Yes	Yes	020700040902	30.6876794804618
105	AC83	39.1785000000	-78.1972000000	Pipe	Other	6"					Abrams Creek	Yes	Yes	020700040902	1.28998379121924
106	AC85	39.1719000000	-78.1841000000	Pipe	CMP	18"					Abrams Creek	Yes	Yes	020700040902	0.664556974922268
107	AC86	39.1723000000	-78.1844000000	Pipe	Concrete	15"					Abrams Creek	Yes	Yes	020700040902	3.99429022062561
108	AC87	39.1726000000	-78.1846000000	Pipe	CMP	15"					Abrams Creek	Yes	Yes	020700040902	0.655394503794112
109	AC88	39.1730000000	-78.1851000000	Pipe	CMP	15"					Abrams Creek	Yes	Yes	020700040902	14.2683569601159
110	AC89	39.1739000000	-78.1870000000	Pipe	CMP	15"					Abrams Creek	Yes	Yes	020700040902	0.671572120789138
111	AC90	39.1644000000	-78.1825000000	Other	Concrete		4'	4'			Abrams Creek	Yes	Yes	020700040902	1.4800564666403
112	AC91	39.1644000000	-78.1824000000	Other	Concrete		4'	4'			Abrams Creek	Yes	Yes	020700040902	0.420441672962314
113	AC92	39.1647000000	-78.1829000000	Other	Concrete		4'	4'			Abrams Creek	Yes	Yes	020700040902	1.84082891485358
114	AC93	39.1648000000	-78.1830000000	Other	Concrete		4'	4'			Abrams Creek	Yes	Yes	020700040902	3.7820204332799
115	AC94	39.1651000000	-78.1834000000	Other	Other	48"					Abrams Creek	Yes	Yes	020700040902	71.9533535704981
116	AC94	39.1657000000	-78.1832000000	Other	Concrete		4'	4'			Abrams Creek	Yes	Yes	020700040902	71.9533535704981
117	AC95	39.1665000000	-78.1831000000	Other	Concrete		4'	4'			Abrams Creek	Yes	Yes	020700040902	62.2900516972993
118	AC95	39.1670000000	-78.1828000000	Pipe	Other					Discharges into underground culvert from riser	Abrams Creek	Yes	Yes	020700040902	62.2900516972993
119	AC96	39.1768000000	-78.1895000000	Pipe	Other	15"					Abrams Creek	Yes	Yes	020700040902	1.5052166764487
120	AC97	39.1769000000	-78.1895000000	Pipe	CMP	15"					Abrams Creek	Yes	Yes	020700040902	13.1006769849395
121	AC98	39.1773000000	-78.1899000000	Pipe	Other	36"					Abrams Creek	Yes	Yes	020700040902	47.9532065509929
122	AC101	39.1626000000	-78.1619000000	Pipe	CMP	72"					Abrams Creek	Yes	Yes	020700040902	7.74448992318177
123	AC150	39.1645000000	-78.1809000000	Other		4"					Abrams Creek	Yes	Yes	020700040902	0.737894834677753
124	AC151	39.1645000000	-78.1809000000	Pipe	Other						Abrams Creek	Yes	Yes	020700040902	0.737663452197583
125	AC152	39.1637000000	-78.1807000000	Pipe		48"					Abrams Creek	Yes	Yes	020700040902	6.1586817926597
126	AC153	39.1644000000	-78.1805000000								Abrams Creek	Yes	Yes	020700040902	39.0612150838457
127	AC154	39.1643000000	-78.1800000000	Ditch	Natural						Abrams Creek	Yes	Yes	020700040902	11.9686932553953
128	AC157	39.1644000000	-78.1777000000							Outfall 7	Abrams Creek	Yes	Yes	020700040902	1.89105936706258
129	AC158	39.1648000000	-78.1768000000								Abrams Creek	Yes	Yes	020700040902	1.47682076131297
130	AC159	39.1647000000	-78.1759000000							Outfall 4	Abrams Creek	Yes	Yes	020700040902	0.671710708311332
131	AC159	39.1649000000	-78.1755000000								Abrams Creek	Yes	Yes	020700040902	0.671710708311332
132	AC160	39.1649000000	-78.1753000000								Abrams Creek	Yes	Yes	020700040902	92.4210474812173
133	AC99	39.1778000000	-78.1915000000								Abrams Creek	Yes	Yes	020700040902	66.0379847716151
134	AC100	39.1770000000	-78.1926000000	Ditch	Concrete		3	6"			Abrams Creek	Yes	Yes	020700040902	14.3483665324697
135	AC135	39.1644000000	-78.1824000000	Pipe						Approximate location based on GIS	Abrams Creek	Yes	Yes	020700040902	174.056290459517
136	AC136	39.1643000000	-78.1822000000	Pipe						Approximate location based on GIS	Abrams Creek	Yes	Yes	020700040902	0.971469044673651
137	AC137	39.1643000000	-78.1822000000	Pipe						Approximate location based on GIS	Abrams Creek	Yes	Yes	020700040902	75.6712655535848

OBJECTID	Unique_Ide	Latitude	Longitude	Point_of_D	Material	Diameter	Length	Width	Depth	Field_Note	Receiving_	Impaired	TMDL_Devel	HUC12	Estimated_
1	BLR21	39.15330000000	-78.18090000000	Pipe	Concrete	36"				Inflow into dry pond	Buffalo Lick Run	No	No	020700040901	108.740885605947
2	BLR20	39.15330000000	-78.18080000000	Pipe	Other	4"				Roof Drain	Buffalo Lick Run	No	No	020700040901	0.132012522217756
3	BLR18	39.15330000000	-78.17680000000	Pipe	Concrete	38 x 24					Buffalo Lick Run	No	No	020700040901	76.3168621428703
4	BLR14	39.15320000000	-78.17660000000	Pipe	Other	18"					Buffalo Lick Run	No	No	020700040901	1.81892340212186
5	BLR15	39.15310000000	-78.17640000000	Pipe	Concrete	21"					Buffalo Lick Run	No	No	020700040901	0.436555047203008
6	BLR3	39.14980000000	-78.17300000000	Pipe	CMP	36"					Buffalo Lick Run	No	No	020700040901	37.8575105107099
7	BLR4	39.14980000000	-78.17290000000	Pipe	Other	24"				Outfall for a temporary slope drain.	Buffalo Lick Run	No	No	020700040901	1.08152262115788
8	BLR1	39.14750000000	-78.16940000000	Ditch	Concrete	3'	3'	6"			Buffalo Lick Run	No	No	020700040901	30.9271745805017
9	BLR2	39.14800000000	-78.16930000000	Ditch	Other		10'	3'			Buffalo Lick Run	No	No	020700040901	25.6149692087004
10	BLR5	39.15170000000	-78.17550000000	Pipe	Other	18"				Outfall for dry pond	Buffalo Lick Run	No	No	020700040901	2.13860369450257
11	BLR6	39.15180000000	-78.17550000000	Pipe	Other	48"					Buffalo Lick Run	No	No	020700040901	1.81432797859988
12	BLR7	39.15180000000	-78.17560000000	Pipe	Other	18"				Outfall for dry pond BMP	Buffalo Lick Run	No	No	020700040901	1.24252018243779
13	BLR8	39.15180000000	-78.17570000000	Pipe	Concrete		4'	4'			Buffalo Lick Run	No	No	020700040901	0.595317639729003
14	BLR9	39.15180000000	-78.17570000000	Ditch	Other		4'	4'		Control structure for dry Pond facility	Buffalo Lick Run	No	No	020700040901	0.514694896410577
15	BLR10	39.15290000000	-78.17600000000	Curb Cut	Concrete		2'	6"			Buffalo Lick Run	No	No	020700040901	0.127348641889167
16	BLR11	39.15290000000	-78.17620000000	Pipe	Concrete	12"				In culvert under Pleasant Valley Drive	Buffalo Lick Run	No	No	020700040901	0.187312823057748
17	BLR12	39.15300000000	-78.17610000000	Pipe	Concrete	24"				Pipe located inside pleasant valley road culvert	Buffalo Lick Run	No	No	020700040901	7.29929172652423
18	BLR13	39.15310000000	-78.17630000000	Pipe	Concrete	12"				Inside culvert under pleasant valley	Buffalo Lick Run	No	No	020700040901	8.61605853404711
19	BLR16	39.15320000000	-78.17680000000	Pipe	Other	4"				Roof Drain	Buffalo Lick Run	No	No	020700040901	5.38315368640909E-02
20	BLR17	39.15320000000	-78.17680000000	Pipe	Other	4"				Roof Drain or drain from bioretention	Buffalo Lick Run	No	No	020700040901	0.213045577262989
21	BLR19	39.15320000000	-78.17680000000	Pipe	Other	4"				Drain for bioretention	Buffalo Lick Run	No	No	020700040901	0.110298261306306
22	BLR22	39.15380000000	-78.17890000000	Pipe	Concrete	18"				Inflow into dry pond	Buffalo Lick Run	No	No	020700040901	4.74989440086516
23	BLR23	39.15660000000	-78.17970000000	Pipe	Concrete	28 x 42				Inflow into dry pond	Buffalo Lick Run	No	No	020700040901	130.872798414796

OBJECTID	Unique_Ide	Latitude	Longitude	Point_of_D	Material	Diameter	Width	Length	Depth	Field_Note	Receiving_	Impaired	TMDL_Devel	HUC12	Estimated_
1	HR29	39.1410000000	-78.1907000000	Ditch	Concrete		5'				Hogue Run	No	No	020700040901	102.180733023591
2	HR31	39.1409000000	-78.1907000000	Pipe	CMP	15"				Outside of Winchester Boundary	Hogue Run	No	No	020700040901	0.332773433655738
3	HR38	39.1407000000	-78.1920000000	Pipe	Concrete	36"				Outside of Winchester Boundary	Hogue Run	No	No	020700040901	1.98481507812205E-02
4	HR27	39.1409000000	-78.1903000000	Ditch	Concrete		6'	4'		Pipe connected to concrete ditch. Remiss for in a ditch test at the outfall. Outside of Winchester Boundary.	Hogue Run	No	No	020700040901	33.7935319850913
5	HR25	39.1405000000	-78.1894000000	Pipe	Concrete	36"					Hogue Run	No	No	020700040901	10.0310171045011
6	HR18	39.1389000000	-78.1860000000	Pipe	Concrete	15"					Hogue Run	No	No	020700040901	0.414744685246967
7	HR16	39.1385000000	-78.1852000000	Curb Cut	Concrete		3'			Outside of Winchester Boundary	Hogue Run	No	No	020700040901	0.466956338896855
8	HR15	39.1385000000	-78.1851000000	Pipe	Concrete	15"					Hogue Run	No	No	020700040901	0.685647405948702
9	HR1	39.1307000000	-78.1832000000	Ditch	Concrete	N/A	4'	6"		Concrete ditch adjacent to culvert under 81. Outside of Winchester Boundary	Hogue Run	No	No	020700040901	5.56979487628887
10	HR2	39.1318000000	-78.1841000000	Pipe	Concrete	27"				27" RCP identified as SW-003 on tree property. Outside of Winchester Boundary.	Hogue Run	No	No	020700040901	29.2225688068728
11	HR4	39.1353000000	-78.1830000000	Pipe	Other	6"				6 inch PVC connected to a wet pond. Outside of Winchester Boundary	Hogue Run	No	No	020700040901	2.75441215272757
12	HR5	39.1361000000	-78.1829000000	Ditch	Natural		5'	2'		Identified as Trex outfall for SW FÇô 002. Outside of Winchester Boundary.	Hogue Run	No	No	020700040901	15.0413076423608
13	HR6	39.1362000000	-78.1828000000	Pipe	CMP	18"				CMP pipe upstream of Shawnee Rd culvert. Outside of Winchester Boundary	Hogue Run	No	No	020700040901	0.844734941746913
14	HR7	39.1365000000	-78.1826000000	Pipe	Other	4"				Roof drain. Outside of Winchester Boundary	Hogue Run	No	No	020700040901	4.16223240955644E-02
15	HR8	39.1366000000	-78.1825000000	Pipe	Other	4"				Roof drain. Outside of Winchester Boundary	Hogue Run	No	No	020700040901	0.133956878474378
16	HR9	39.1366000000	-78.1825000000	Pipe	Other	4"				Roof drain. Outside of Winchester Boundary	Hogue Run	No	No	020700040901	0.040915902784197
17	HR10	39.1367000000	-78.1827000000	Pipe	Other	2"				Roof drain. Outside of Winchester Boundary.	Hogue Run	No	No	020700040901	2.88721836271562E-02
18	HR11	39.1381000000	-78.1843000000	Curb Cut	Concrete		3.5'	6"			Hogue Run	No	No	020700040901	0.317731213522853
19	HR12	39.1380000000	-78.1845000000	Curb Cut	Concrete		3'	6"		Outside of Winchester Boundary	Hogue Run	No	No	020700040901	1.33234646514556
20	HR13	39.1382000000	-78.1846000000	Curb Cut	Concrete		4'	6"			Hogue Run	No	No	020700040901	0.53205626633306
21	HR14	39.1384000000	-78.1850000000	Pipe	Other	6"					Hogue Run	No	No	020700040901	0.205036804086764
22	HR17	39.1391000000	-78.1862000000	Pipe	Concrete	15"				Ditch located along railroad track.	Hogue Run	No	No	020700040901	1.82859358233884
23	HR19	39.1390000000	-78.1862000000	Ditch	Natural		5'	4'		Ditch located along railroad track. Outside of Winchester Boundary.	Hogue Run	No	No	020700040901	0.551500914769099
24	HR20	39.1391000000	-78.1864000000	Ditch	Natural		5'	2'		Ditch located along railroad track. Outside of Winchester Boundary.	Hogue Run	No	No	020700040901	36.753393070851
25	HR21	39.1393000000	-78.1864000000	Ditch	Natural		5'	4'		Ditch located along railroad track.	Hogue Run	No	No	020700040901	32.0341500052752
26	HR22	39.1394000000	-78.1867000000	Pipe	Other	4"				Roof Drain. Outside of Winchester Boundary.	Hogue Run	No	No	020700040901	9.92769758224015E-02
27	HR23	39.1396000000	-78.1871000000	Pipe	Concrete	15"				Outside of Winchester Boundary	Hogue Run	No	No	020700040901	4.23989753349977
28	HR24	39.1403000000	-78.1891000000	Pipe	Other	4"				4 inch PVC pipe capped off at three. Outside of Winchester Boundary.	Hogue Run	No	No	020700040901	9.67473832685583E-02
29	HR26	39.1405000000	-78.1896000000	Ditch	Natural		4'	2'		Outside of Winchester Boundary	Hogue Run	No	No	020700040901	0.39196507306179
30	HR28	39.1408000000	-78.1904000000	Ditch	Concrete	3'				Outside of Winchester Boundary.	Hogue Run	No	No	020700040901	18.8409418047058
31	HR30	39.1409000000	-78.1912000000	Ditch	Concrete		6'	2"		Outside of Winchester Boundary	Hogue Run	No	No	020700040901	1.59111653872587
32	HR32	39.1409000000	-78.1912000000	Pipe	Other	4"				Roof Drain. Outside of Winchester Boundary.	Hogue Run	No	No	020700040901	3.07408355899173E-02
33	HR33	39.1409000000	-78.1912000000	Pipe	Other	4"				Roof Drain. Outside of Winchester Boundary.	Hogue Run	No	No	020700040901	4.14663937805135E-02
34	HR34	39.1409000000	-78.1918000000	Pipe	Concrete	15"					Hogue Run	No	No	020700040901	2.79668781869202
35	HR35	39.1408000000	-78.1918000000	Curb Cut			3'				Hogue Run	No	No	020700040901	0.1495673466211
36	HR36	39.1408000000	-78.1917000000	Pipe	Other	4"				Roof Drain.	Hogue Run	No	No	020700040901	2.46380542503535E-02
37	HR37	39.1407000000	-78.1917000000	Ditch	Concrete		3'	6"		Outside of Winchester Boundary	Hogue Run	No	No	020700040901	0.397139633797864
38	HR39	39.1407000000	-78.1921000000	Ditch	Concrete		3'	6"		Outside of Winchester Boundary	Hogue Run	No	No	020700040901	0.932799304268193

**Appendix 4. Letter from DEQ Confirming City Yards  
Facility Coverage under the Virginia General Permit for  
Discharge of Stormwater from Industrial Activities**



# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF ENVIRONMENTAL QUALITY

### VALLEY REGIONAL OFFICE

P.O. Box 3000, Harrisonburg, Virginia 22801

(540) 574-7800 Fax (540) 574-7878

Physical Address: 4411 Early Road, Harrisonburg, VA

[www.deq.virginia.gov](http://www.deq.virginia.gov)

Matthew J. Strickler  
Secretary of Natural Resources

David K. Paylor  
Director

Amy Thatcher Owens  
Regional Director

August 30, 2019

Perry Eisenach  
City of Winchester  
Sent by Email ([perry.eisenach@winchesterva.gov](mailto:perry.eisenach@winchesterva.gov))

RE: Coverage under the VPDES Industrial Stormwater General Permit  
City Yards  
Registration No. VAR050822

Mr. Eisenach:

We have reviewed the Registration Statement and have determined that stormwater discharges from the above facility are hereby covered under the referenced VPDES general permit. Your coverage under this permit is effective as of August 30, 2019. The enclosed copy of the general permit contains the applicable stormwater pollution prevention plan (SWPPP), sector specific requirements, monitoring requirements, and other conditions of coverage.

The general permit requires that you update your Stormwater Pollution Prevention Plan (SWPPP) within 90-days of your date of coverage under the permit to incorporate the SWPPP changes that the Department made for this permit reissuance.

For this reissuance, all permit discharge monitoring is semi-annual (i.e., once per six months) unless otherwise directed by the Department. Monitoring for your facility begins with the July 1, 2019 monitoring period.

A Discharge Monitoring Report (DMR) form is included in the reissuance package for reference purposes only. Monitoring results shall be reported in the department's electronic discharge monitoring report (e-DMR) system. All reports and forms submitted in compliance with this permit shall be submitted electronically by the permittee in accordance with 9VAC25-31-1020. Answers to frequently asked questions and the e-DMR registration process can be located at the following website:

<https://www.deq.virginia.gov/Programs/Water/PermittingCompliance/ElectronicDMRsubmissions.aspx>

Monitoring results must be submitted by January 10<sup>th</sup> and July 10<sup>th</sup> each year via e-DMR. The first DMR is due January 10, 2020, for the monitoring period of July 1, 2019 through December 31, 2019.

The following discharge monitoring applies to your facility:

- Benchmark monitoring. Specific stormwater monitoring for your facility based on the industrial sectors that apply to your facility. Refer to the permit Part I.A.1.b for the benchmark monitoring requirements, and the sector specific sections for the benchmark monitoring applicable to your facility.
- Impaired Waters Monitoring – Waters With An Approved TMDL. Your facility has been identified as discharging the pollutant of concern to an impaired waterbody that has an approved Total Maximum Daily Load (TMDL) wasteload allocation. As such, you are required to modify your SWPPP to implement best management practices (BMPs) designed to meet the allocation in the TMDL. The TMDL contains a specific wasteload allocation for your facility that is equivalent to a concentration of 60 mg/L of total suspended solids in the stormwater discharge. Therefore, you are required to monitor your stormwater discharges for the TMDL pollutant of concern. Refer to the permit Part I.A.1.c(3) for TMDL monitoring requirements and permit Special Condition # 7a (permit Part I.B.7.a) regarding TMDL requirements. Copies of the TMDL Final Report are available upon request.
- Impaired Waters Monitoring – Chesapeake Bay TMDL – Special Monitoring For Facilities In The Chesapeake Bay Watershed. Your facility was to have monitored stormwater discharges during the 2014 industrial stormwater general permit term in support of the Chesapeake Bay TMDL. Our records indicate that your facility did not complete the four sampling events as required by the permit. Facilities that did not complete four sampling events for Total Suspended Solids (TSS), Total Nitrogen (TN), and Total Phosphorus (TP) during the 2014 industrial stormwater general permit term are required to complete the monitoring during the 2019 permit term.

Data that was collected during the 2014 industrial stormwater general permit term for TSS, TN, or TP may be used to satisfy part of the required four sampling events. In accordance with the permit Part I.B.8.c(2), upon completion of the fourth sampling event your facility is required to calculate stormwater nutrient and sediment loads. Calculations are to be completed using the four completed sampling events and the acreages provided on the registration statement for the 2019 permit term. Information to assist with performing the calculations, including a Chesapeake Bay TMDL Calculation Spreadsheet is available at the following:

<https://www.deq.virginia.gov/Programs/Water/PermittingCompliance/PollutionDischargeElimination/PermitsFees.aspx#isw>

If the calculations indicate the facility loading rate for any of the parameters (e.g. TSS, TN, or TP) is above the loading rates identified in the permit Part I.B.8.c(1), a Chesapeake Bay TMDL action plan shall be developed and submitted to the DEQ – Valley Regional Office. The Chesapeake Bay TMDL Action Plan Form for submitting your Plan may be found at the same link noted above.

The calculations, and Chesapeake Bay TMDL action plan if required, shall be submitted to the DEQ – Valley Regional Office within 90 days from the end of the last monitoring period that satisfies the monitoring requirement in the permit Part I.B.8.a (all four sampling events have been completed) and copies shall also be maintained with the facility's SWPPP.

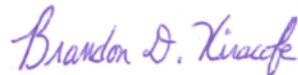


Virginia's Phase I Chesapeake Bay Total Maximum Daily Load (TMDL) Watershed Implementation Plan (November 29, 2010), states that the wasteloads from any expansion of an existing permitted facility discharging stormwater in the Chesapeake Bay watershed cannot exceed the nutrient and sediment loadings that were discharged from the expanded portion of the land prior to the land being developed for the expanded industrial activity. For any industrial activity area expansions (i.e., construction activities, including clearing, grading and excavation activities) that commence on or after July 1, 2019, you must document in the SWPPP the information and calculations used to determine the nutrient and sediment loadings discharged from the expanded land area prior to the land being developed, and the measures and controls that were employed to meet the no net increase of stormwater nutrient and sediment load as a result of the expansion of the industrial activity. Any land disturbance that is not required to be permitted under the VPDES construction stormwater general permit regulation (9VAC25-880) is exempt from this requirement.

This general permit will expire on June 30, 2024. The permit requires that you submit a new registration statement at least 60 days prior to that date if you wish continued coverage under the general permit, unless permission for a later date has been granted by the Board. Permission cannot be granted to submit the registration statement after the expiration date of the permit.

If you have any questions, please contact Noel Thomas at [noel.thomas@deq.virginia.gov](mailto:noel.thomas@deq.virginia.gov) or (540) 574-7899.

Sincerely,



Brandon D. Kiracofe  
Regional Water Permits & Compliance Manager

Enclosures

cc: ECM Water Permitting  
Linda Ferguson-Davie – VRO (electronic)  
Kelly Henshaw ([kelly.henshaw@winchesterva.gov](mailto:kelly.henshaw@winchesterva.gov))  
Joe Formanski ([joe.formanski@winchesterva.gov](mailto:joe.formanski@winchesterva.gov))

**PERMITTED FACILITY**

City Yards  
15 N Cameron St, Winchester VA 22601  
Permit Number: VAR050822

No Discharge:

**COMMONWEALTH OF VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
INDUSTRIAL STORMWATER  
DISCHARGE MONITORING REPORT (DMR)**

**RETURN TO**

Department of Environmental Quality  
Valley Regional Office  
4411 Early Road, P.O. Box 3000, Harrisonburg VA 22801  
(540) 574-7800

NOTE: READ PERMIT AND GENERAL INSTRUCTIONS BEFORE  
COMPLETING THIS FORM AND RETURNING IT.

MONITORING PERIOD						
YEAR	MO	DAY		YEAR	MO	DAY
			FROM			
			TO			

Outfall Num: 001      Reporting Frequency: Semi-Annual      Type: BENCHMARK MONITORING      Run Date: Aug 29, 2019

PARAMETER		QUALITY OR CONCENTRATION			UNITS	NO. EX.	SAMPLE TYPE
		MINIMUM	AVERAGE	MAXIMUM			
004 TSS	REPORTD	*****	*****				
	REQRMNT	*****	*****	100	MG/L	GRAB	

STORM EVENT INFORMATION						
DATE			DURATION		RAINFALL TOTAL (IN.)	PRECEDING
YEAR	MO	DAY	HOURS	MIN		
						Days
						Hours

Benchmark Monitoring:  
Comments:

FOR REFERENCE ONLY - DO NOT SUBMIT

**PERMITTED FACILITY**

City Yards  
15 N Cameron St, Winchester VA 22601  
Permit Number: VAR050822

No Discharge:

**COMMONWEALTH OF VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
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NOTE: READ PERMIT AND GENERAL INSTRUCTIONS BEFORE  
COMPLETING THIS FORM AND RETURNING IT.

MONITORING PERIOD						
FROM			TO			
YEAR	MO	DAY	YEAR	MO	DAY	

Outfall Num: 001

Reporting Frequency: Semi-Annual

Type: TMDL\_MONITORING

Run Date: Aug 29, 2019

PARAMETER		QUALITY OR CONCENTRATION				NO. EX.	SAMPLE TYPE
		MINIMUM	AVERAGE	MAXIMUM	UNITS		
004 TSS	REPORTD	*****	*****				
	REQRMNT	*****	*****	60	MG/L		GRAB
929 ChesBay TMDL TSS	REPORTD	*****	*****				
	REQRMNT	*****	*****	NL	MG/L		GRAB
930 ChesBay TMDL Nitrogen, Total (as N)	REPORTD	*****	*****				
	REQRMNT	*****	*****	NL	MG/L		GRAB
931 ChesBay TMDL Phosphorus, Total (as P)	REPORTD	*****	*****				
	REQRMNT	*****	*****	NL	MG/L		GRAB

**STORM EVENT INFORMATION**

DATE			DURATION		RAINFALL TOTAL (IN)	PRECEDING	
YEAR	MO	DAY	HOURS	MIN		Days	Hours

TMDL Monitoring:

Comments:

FOR REFERENCE ONLY, DO NOT SUBMIT

This report is required by your VPDES permit and by law. (See, e.g., the Code of Virginia of 1950 §62.1-44.5 and 9 VAC 25-31-50.) Failure to report or failure to report truthfully can result in civil penalties of \$32,500 per violation, per day and felony prosecutions which can carry a 15 year term.

## **DISCHARGE MONITORING REPORT (DMR) - GENERAL INSTRUCTIONS**

1. Complete this form in permanent ink or indelible pencil. The use of 'correction fluids/tape' is not allowed.
2. Enter a check mark or otherwise indicate the appropriate "Monitoring Period" when sampling occurred.
3. For those parameters where the "REQUIREMENT" spaces have a reporting requirement or limitation, provide data in the "REPORTED" spaces in accordance with your permit.
4. Enter maximum concentration and units in the "REPORTED" spaces in the appropriate column under the header of "Concentration".
5. For all parameters enter the number of samples which do not comply with the minimum or maximum permit requirement in the "REPORTED" space in the column marked "No. Ex." (Number of Exceedances). If none, enter "0". Do NOT include monthly average violations in this field.
6. You are required to sample (at a minimum) according to the Sample Frequencies and Sample Types specified in your permit. If you sample more often than the Sample Frequency specified in your permit then all data must be used when completing the DMR.
7. Enter the actual type of sample (Grab, 8HC, 24HC, etc) collected for each parameter in the "REPORTED" space in the column marked "Sample Type".
8. Storm Event Information (i.e., a "measurable storm event" is a storm event that results in an actual discharge from the site, providing the interval from the preceding measurable Storm event is at least 72 hours):
  1. Enter the date (Year/Month/Day) of the "measurable storm event"
  2. Enter the duration (hours and minutes) of "measurable storm event"
  3. Enter the rainfall total (inches) of the "measurable storm event"
  4. Enter the number of days and hours from the preceding "measurable storm event"
9. The principal executive officer then reviews the form and must sign in the space provided and provide a telephone number where he/she can be reached. Enter the date (Year/Month/Day) the DMR was signed. The final page of the DMR must have an original signature and date.
10. Send the completed form(s) with original signatures to your Department of Environmental Quality Regional Office by the 10th of month following the monitoring period.
11. You are required to retain a copy of the report for your records.



# *COMMONWEALTH of VIRGINIA*

## *DEPARTMENT OF ENVIRONMENTAL QUALITY*

General Permit Registration No.: VAR050822

Effective Date: July 1, 2019

Expiration Date: June 30, 2024

### VPDES GENERAL PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY

#### AUTHORIZATION TO DISCHARGE UNDER THE VIRGINIA POLLUTANT DISCHARGE ELIMINATION SYSTEM AND THE VIRGINIA STATE WATER CONTROL LAW

In compliance with the provisions of the Clean Water Act, as amended, and pursuant to the State Water Control Law and regulations adopted pursuant thereto, owners of facilities with stormwater discharges associated with industrial activity are authorized to discharge to surface waters within the boundaries of the Commonwealth of Virginia, except those waters specifically named in board regulation that prohibit such discharges.

The authorized discharge shall be in accordance with this cover page, the registration statement, Part I-Effluent Limitations, Monitoring Requirements and Special Conditions, Part II-Conditions Applicable to All VPDES Permits, Part III-Stormwater Pollution Prevention Plan, and Part IV-Sector-Specific Permit Requirements, as set forth in this general permit.

## Part I. Effluent Limitations, Monitoring Requirements and Special Conditions

### A. Effluent limitations and monitoring requirements.

There are four individual and separate categories of monitoring requirements that a facility may be subject to under this permit: (i) quarterly visual monitoring; (ii) benchmark monitoring of discharges associated with specific industrial activities; (iii) compliance monitoring for discharges subject to numerical effluent limitations; and (iv) monitoring of discharges to impaired waters, both those with an approved TMDL and those without an approved TMDL. The monitoring requirements and numeric effluent limitations applicable to a facility depend on the types of industrial activities generating stormwater runoff from the facility, and for TMDL monitoring, the location of the facility's discharge or discharges. Part IV of the permit (9VAC25-151-90 et seq.) identifies monitoring requirements applicable to specific sectors of industrial activity. The permittee shall review Part I A 1 and Part IV of the permit to determine which monitoring requirements and numeric limitations apply to his facility. Unless otherwise specified, limitations and monitoring requirements under Part I A 1 and Part IV are additive.

Sector-specific monitoring requirements and limitations are applied discharge by discharge at facilities with colocated activities. Where stormwater from the colocated activities are commingled, the monitoring requirements and limitations are additive. Where more than one numeric limitation for a specific parameter applies to a discharge, compliance with the more restrictive limitation is required. Where benchmark, numerical effluent limitations, or TMDL monitoring requirements for a monitoring period overlap, the permittee may use a single sample to satisfy monitoring requirements.

#### 1. Types of monitoring requirements and limitations.

a. Quarterly visual monitoring. The requirements and procedures for quarterly visual monitoring are applicable to all facilities covered under this permit, regardless of the facility's sector of industrial activity.

- (1) The permittee shall perform and document a quarterly visual examination of a stormwater discharge associated with industrial activity from each outfall, except discharges exempted in Part I A 3 or Part I A 4. The examinations shall be made at least once in each of the following three-month periods: January through March, April through June, July through September, and October through December. The visual examination shall be made during normal working hours, where practicable, and when considerations for safety and feasibility allow. If no storm event resulted in runoff from the facility during a monitoring quarter, the permittee is excused from visual monitoring for that quarter provided that documentation is included with the monitoring records indicating that no runoff occurred. The documentation shall be signed and certified in accordance with Part II K of this permit.
- (2) Samples shall be collected in accordance with Part I A 2. Sample examination shall document observations of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of stormwater pollution. The visual examination of the sample shall be conducted in a well-lit area. No analytical tests are required to be performed on the samples.
- (3) The visual examination reports shall be maintained on-site with the SWPPP. The report shall include the outfall location, the examination date and time, examination personnel, the nature of the discharge (i.e., runoff or snow melt), visual quality of the stormwater discharge (including observations of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of stormwater pollution), and probable sources of any observed stormwater contamination.

b. Benchmark monitoring of discharges associated with specific industrial activities.

Table 70-1 identifies the specific industrial sectors subject to the benchmark monitoring requirements of this permit and the industry-specific pollutants of concern. The permittee shall refer to the tables found in the individual sectors in Part IV (9VAC25-151-90 et seq.) for benchmark monitoring concentration values. Colocated industrial activities at the facility that are described in more than one sector in Part IV shall comply with all applicable benchmark monitoring requirements from each sector.

The results of benchmark monitoring are primarily for the permittee to use to determine the overall effectiveness of the SWPPP in controlling the discharge of pollutants to receiving waters. Benchmark concentration values, included in Part IV of this permit, are not effluent limitations. Exceedance of a benchmark concentration does not constitute a violation of this permit and does not indicate that violation of a water quality standard has occurred; however, it does signal that modifications to the SWPPP are necessary, unless justification is provided in a routine facility inspection. In addition, exceedance of benchmark concentrations may identify facilities that would be more appropriately covered under an individual, or alternative general permit where more specific pollution prevention controls could be required.

TABLE 70-1 INDUSTRIAL SECTORS SUBJECT TO BENCHMARK MONITORING		
Industry Sector <sup>1</sup>	SIC Code or Activity Code	Benchmark Monitoring Parameters
AF	4011, 4013, 4111-4173, 4212-4231, 4311, 5171	TSS.
<sup>1</sup> Table does not include parameters for compliance monitoring under effluent limitations guidelines.		

- (1) Benchmark monitoring shall be performed for all benchmark parameters specified for the industrial sector or sectors applicable to a facility's discharge. Monitoring shall be performed at least once during each of the first four, and potentially all, monitoring periods after coverage under the permit begins. Monitoring commences with the first full monitoring period after the owner is granted coverage under the permit. Monitoring periods are specified in Part I A 2.

Depending on the results of four consecutive monitoring periods, benchmark monitoring may not be required to be conducted in subsequent monitoring periods (see Part I A 1 b (2)).

- (2) Benchmark monitoring waivers for facilities testing below benchmark concentration values. Waivers from benchmark monitoring are available to facilities whose discharges are below benchmark concentration values on an outfall by outfall basis. Sector-specific benchmark monitoring is not required to be conducted in subsequent monitoring periods during the term of this permit provided:
- (a) Samples were collected in four consecutive monitoring periods, and the average of the four samples for all parameters at the outfall is below the applicable benchmark concentration value in Part IV. Facilities that were covered under the 2014 industrial stormwater general permit may use sampling data from the last two monitoring periods of that permit and the first two monitoring periods of this permit to satisfy the four consecutive monitoring periods requirement;

- (b) The facility is not subject to a numeric effluent limitation established in Part I A 1 c (1) (stormwater effluent limitations), Part I A 1 c (2) (coal pile runoff), or Part IV (Sector Specific Permit Requirements) for any of the parameters at that outfall; and
- (c) A waiver request is submitted to and approved by the board. The waiver request shall be sent to the appropriate DEQ regional office, along with the supporting monitoring data for four consecutive monitoring periods, and a certification that, based on current potential pollutant sources and control measures used, discharges from the facility are reasonably expected to be essentially the same (or cleaner) compared to when the benchmark monitoring for the four consecutive monitoring periods was done.

Waiver requests will be evaluated by the board based upon (i) benchmark monitoring results below the benchmark concentration values; (ii) a favorable compliance history (including inspection results); and (iii) no outstanding enforcement actions.

The monitoring waiver may be revoked by the board for cause. The permittee will be notified in writing that the monitoring waiver is revoked, and that the benchmark monitoring requirements are again in force and will remain in effect until the permit's expiration date.

- (3) Samples shall be collected and analyzed in accordance with Part I A 2. Monitoring results shall be reported in accordance with Part I A 5 and Part II C and retained in accordance with Part II B.
- c. Compliance monitoring for discharges subject to numerical effluent limitations or discharges to impaired waters.
  - (1) Facilities subject to stormwater effluent limitation guidelines.
    - (a) Facilities subject to stormwater effluent limitation guidelines (see Table 70-2) are required to monitor such discharges to evaluate compliance with numerical effluent limitations. Industry-specific numerical limitations and compliance monitoring requirements are described in Part IV of the permit (9VAC25-151-90 et seq.). Permittees with colocated industrial activities at the facility that are described in more than one sector in Part IV shall comply on a discharge-by-discharge basis with all applicable effluent limitations from each sector.
    - (b) Permittees shall monitor the discharges for the presence of the pollutant subject to the effluent limitation at least once during each of the monitoring periods after coverage under the permit begins. Monitoring commences with the first full monitoring period after the owner is granted coverage under the permit. Monitoring periods are specified in Part I A 2. The substantially identical outfall monitoring provisions (Part I A 2 f) are not available for numeric effluent limits monitoring.
    - (c) Samples shall be collected and analyzed in accordance with Part I A 2. Monitoring results shall be reported in accordance with Part I A 5 and Part II C, and retained in accordance with Part II B.

TABLE 70-2 STORMWATER-SPECIFIC EFFLUENT LIMITATION GUIDELINES
Effluent Limitation Guidelines Are Not Applicable to Sector AF

- (2) Facilities subject to coal pile runoff monitoring.
  - (a) Facilities with discharges of stormwater from coal storage piles shall comply with the limitations and monitoring requirements of Table 70-3 for all discharges containing the coal pile runoff, regardless of the facility's sector of industrial activity.



- (b) Permittees shall monitor such stormwater discharges at least once during each of the monitoring periods after coverage under the permit begins. Monitoring commences with the first full monitoring period after the owner is granted coverage under the permit. Monitoring periods are specified in Part I A 2. The substantially identical outfall monitoring provisions (Part I A 2 f) are not available for coal pile numeric effluent limits monitoring.
- (c) The coal pile runoff shall not be diluted with other stormwater or other flows in order to meet this limitation.
- (d) If a facility is designed, constructed and operated to treat the volume of coal pile runoff that is associated with a 10-year, 24-hour rainfall event, any untreated overflow of coal pile runoff from the treatment unit is not subject to the 50 mg/L limitation for total suspended solids.
- (e) Samples shall be collected and analyzed in accordance with Part I A 2. Monitoring results shall be reported in accordance with Part I A 5 and Part II C, and retained in accordance with Part II B.

TABLE 70-3 NUMERIC LIMITATIONS FOR COAL PILE RUNOFF			
Parameter	Limit	Monitoring Frequency	Sample Type
Total Suspended Solids (TSS)	50 mg/l, max.	1/6 months	Grab
pH	6.0 min. - 9.0 max.	1/6 months	Grab

- (3) Facilities discharging to an impaired water with an approved TMDL wasteload allocation. Owners of facilities that are a source of the specified pollutant of concern to waters for which a TMDL wasteload allocation has been approved prior to the term of this permit will be notified as such by the department when they are approved for coverage under the general permit.
  - (a) Upon written notification from the department, facilities subject to TMDL wasteload allocations shall be required to monitor such discharges to evaluate compliance with the TMDL requirements.
  - (b) Permittees shall monitor the discharges for the pollutant subject to the TMDL wasteload allocation once every six months after coverage under the permit begins, unless otherwise determined by the department for polychlorinated biphenyls (PCBs). Monitoring commences with the first full monitoring period after the owner is granted coverage under the permit. Monitoring periods are specified in Part I A 2.
  - (c) Samples shall be collected and analyzed in accordance with Part I A 2. Monitoring results shall be reported in accordance with Part I A 5 and Part II C, and retained in accordance with Part II B.
  - (d) If the pollutant subject to the TMDL wasteload allocation is below the quantitation level in all of the samples from the first four monitoring periods (i.e., the first two years of coverage under the permit), the permittee may request to the board in writing that further sampling be discontinued, unless the TMDL has specific instructions to the contrary (in which case those instructions shall be followed). The laboratory certificate of analysis shall be submitted with the request. If approved, documentation of this shall be kept with the SWPPP.

If the pollutant subject to the TMDL wasteload allocation is above the quantitation level in any of the samples from the first four monitoring periods, the permittee shall continue the scheduled TMDL monitoring throughout the term of the permit.

(4) Facilities discharging to an impaired water without an approved TMDL wasteload allocation.

Owners of facilities that discharge to waters listed as impaired in the 2016 Final 305(b)/303(d) Water Quality Assessment Integrated Report, and for which a TMDL wasteload allocation has not been approved prior to the term of this permit, will be notified as such by the department when they are approved for coverage under the general permit.

- (a) Upon written notification from the department, facilities discharging to an impaired water without an approved TMDL wasteload allocation shall be required to monitor such discharges for the pollutants that caused the impairment.
- (b) Permittees shall monitor the discharges for all pollutants for which the waterbody is impaired, and for which a standard analytical method exists, at least once during each of the monitoring periods after coverage under the permit begins. Monitoring commences with the first full monitoring period after the owner is granted coverage under the permit. Monitoring periods are specified in Part I A 2.
- (c) If the pollutant for which the waterbody is impaired is suspended solids, turbidity, or sediment, or sedimentation, monitor for total suspended solids (TSS). If the pollutant for which the waterbody is impaired is expressed in the form of an indicator or surrogate pollutant, monitor for that indicator or surrogate pollutant. No monitoring is required when a waterbody's biological communities are impaired but no pollutant, including indicator or surrogate pollutants, is specified as causing the impairment, or when a waterbody's impairment is related to hydrologic modifications, impaired hydrology, or temperature.

Samples shall be collected and analyzed in accordance with Part I A 2. Monitoring results shall be reported in accordance with Part I A 5 and Part II C, and retained in accordance with Part II B.

- (d) If the pollutant for which the water is impaired is below the quantitation level in the discharges from the facility, or it is above the quantitation level but its presence is caused solely by natural background sources, the permittee may request to the board in writing that further impaired water monitoring be discontinued. The laboratory certificate of analysis shall be submitted with the request. If approved, documentation of this shall be kept with the SWPPP.

To support a determination that the pollutant's presence is caused solely by natural background sources, the following documentation shall be submitted with the request and kept with the SWPPP: (i) an explanation of why it is believed that the presence of the impairment pollutant in the facility's discharge is not related to the activities at the facility; and (ii) data or studies that tie the presence of the impairment pollutant in the facility's discharge to natural background sources in the watershed. Natural background pollutants include those substances that are naturally occurring in soils or groundwater. Natural background pollutants do not include legacy pollutants from earlier activity at the facility's site, or pollutants in run-on from neighboring sources that are not naturally occurring.

2. Monitoring instructions.

- a. Collection and analysis of samples. Sampling requirements shall be assessed on an outfall by outfall basis. Samples shall be collected and analyzed in accordance with the requirements of Part II A.

- b. When and how to sample. A minimum of one grab sample shall be taken from the discharge associated with industrial activity resulting from a storm event that results in a discharge from the site (defined as a "measurable storm event"), providing the interval from the preceding measurable storm event is at least 72 hours. The 72-hour storm interval is waived if the permittee is able to document that less than a 72-hour interval is representative for local storm events during the sampling period. In the case of snowmelt, the monitoring shall be performed at a time when a measurable discharge occurs at the site. For discharges from a stormwater management structure, the monitoring shall be performed at a time when a measurable discharge occurs from the structure.

The grab sample shall be taken during the first 30 minutes of the discharge. If it is not practicable to take the sample during the first 30 minutes, the sample may be taken during the first three hours of the discharge, provided that the permittee explains why a grab sample during the first 30 minutes was impracticable. This information shall be submitted in the department's electronic discharge monitoring report (e-DMR) system, and maintained with the SWPPP. If the sampled discharge commingles with process or nonprocess water, the permittee shall attempt to sample the stormwater discharge before it mixes with the nonstormwater.

- c. Storm event data. For each monitoring event (except snowmelt monitoring), along with the monitoring results, the permittee shall identify the date and duration (in hours) of the storm events sampled; rainfall total (in inches) of the storm event that generated the sampled runoff; and the duration between the storm event sampled and the end of the previous measurable storm event. For snowmelt monitoring, the permittee shall identify the date of the sampling event.
- d. Monitoring periods.
- (1) Quarterly visual monitoring. The quarterly visual examinations shall be made at least once in each of the following three-month periods each year of permit coverage: January through March, April through June, July through September, and October through December.
  - (2) Benchmark monitoring, effluent limitation monitoring, and impaired waters monitoring (for waters both with and without an approved TMDL). Monitoring shall be conducted at least once in each of the following semiannual periods each year of permit coverage: January through June, and July through December.
- e. Documentation explaining a facility's inability to obtain a sample (including dates and times the outfalls were viewed or sampling was attempted), of no rain event, or of deviation from the "measurable" storm event requirements shall be maintained with the SWPPP. Acceptable documentation includes National Climatic Data Center (NCDC) weather station data, local weather station data, facility rainfall logs, and other appropriate supporting data.
- f. Representative outfalls - substantially identical discharges. If the facility has two or more outfalls that discharge substantially identical effluents, based on similarities of the industrial activities, significant materials, size of drainage areas, and stormwater management practices occurring within the drainage areas of the outfalls, frequency of discharges, and stormwater management practices occurring within the drainage areas of the outfalls, the permittee may conduct monitoring on the effluent of just one of the outfalls and report that the observations also apply to the substantially identical outfall or outfalls. The substantially identical outfall monitoring provisions apply to quarterly visual monitoring, benchmark monitoring, and impaired waters monitoring (both those with and without an approved TMDL). The substantially identical outfall monitoring provisions are not available for numeric effluent limits monitoring.

The permittee shall include the following information in the SWPPP:

- (1) The locations of the outfalls;
  - (2) An evaluation, including available monitoring data, indicating the outfalls are expected to discharge substantially identical effluents, including evaluation of monitoring data where available; and
  - (3) An estimate of the size of each outfall's drainage area in acres.
3. Adverse climatic conditions waiver. When adverse weather conditions prevent the collection of samples, a substitute sample may be taken during a qualifying storm event in the next monitoring period. Adverse weather conditions are those that are dangerous or create inaccessibility for personnel, and may include such things as local flooding, high winds, electrical storms, or situations that otherwise make sampling impracticable, such as drought or extended frozen conditions. Unless specifically stated otherwise, this waiver may be applied to any monitoring required under this permit. Narrative documentation of conditions necessitating the use of the waiver shall be kept with the SWPPP.
  4. Inactive and unstaffed sites (including temporarily inactive sites).
    - a. A waiver of the quarterly visual monitoring, routine facility inspections, and monitoring requirements (including benchmark, effluent limitation, and impaired waters monitoring) may be granted by the board at a facility that is both inactive and unstaffed, as long as the facility remains inactive and unstaffed and there are no industrial materials or activities exposed to stormwater. The owner of such a facility is only required to conduct an annual routine site inspection in accordance with the requirements in Part III B 5.
    - b. An inactive and unstaffed sites waiver request shall be submitted to the board for approval and shall include the name of the facility; the facility's VPDES general permit registration number; a contact person, phone number and email address; the reason for the request; and the date the facility became or will become inactive and unstaffed. The waiver request shall be signed and certified in accordance with Part II K. If this waiver is granted, a copy of the request and the board's written approval of the waiver shall be maintained with the SWPPP.
    - c. If circumstances change and industrial materials or activities become exposed to stormwater, or the facility becomes either active or staffed, the permittee shall notify the department within 30 days, and all quarterly visual monitoring, routine facility inspections, and monitoring requirements shall be resumed immediately.
    - d. The board retains the right to revoke this waiver when it is determined that the discharge is causing, has a reasonable potential to cause, or contributes to a water quality standards violation.
    - e. Inactive and unstaffed facilities covered under Sector G (Metal Mining) and Sector H (Coal Mines and Coal Mining-Related Facilities) are not required to meet the "no industrial materials or activities exposed to stormwater" standard to be eligible for this waiver, consistent with the conditional exemption requirements established in Part IV Sector G and Part IV Sector H.
  5. Reporting monitoring results.
    - a. Reporting to the department. The permittee shall follow the reporting requirements and deadlines below for the types of monitoring that apply to the facility:

TABLE 70-4 MONITORING REPORTING REQUIREMENTS	
Semiannual Monitoring	Submit the results by January 10 and by July 10.
Quarterly Visual Monitoring	Retain results with SWPPP - do not submit unless requested to do so by the department.

Permittees shall submit results for each outfall associated with industrial activity according to the requirements of Part II C.

- b. Significant digits. The permittee shall report at least the same number of significant digits as a numeric effluent limitation or TMDL wasteload allocation for a given parameter; otherwise, at least two significant digits shall be reported for a given parameter. Regardless of the rounding convention used by the permittee (i.e., five always rounding up or to the nearest even number), the permittee shall use the convention consistently and shall ensure that consulting laboratories employed by the permittee use the same convention.
6. Corrective actions.
- a. Data exceeding benchmark concentration values.
    - (1) If the benchmark monitoring result exceeds the benchmark concentration value for that parameter, the permittee shall review the SWPPP and modify it as necessary to address any deficiencies that caused the exceedance. Revisions to the SWPPP shall be completed within 60 days after an exceedance is discovered. When control measures need to be modified or added (distinct from regular preventive maintenance of existing control measures described in Part III C), implementation shall be completed before the next anticipated storm event if possible, but no later than 60 days after the exceedance is discovered, or as otherwise provided or approved by the department. In cases where construction is necessary to implement control measures, the permittee shall include a schedule in the SWPPP that provides for the completion of the control measures as expeditiously as practicable, but no later than three years after the exceedance is discovered. Where a construction compliance schedule is included in the SWPPP, the SWPPP shall include appropriate nonstructural and temporary controls to be implemented in the affected portions of the facility prior to completion of the permanent control measure. Any control measure modifications shall be documented and dated, and retained with the SWPPP, along with the amount of time taken to modify the applicable control measures or implement additional control measures.
    - (2) Natural background pollutant levels. If the concentration of a pollutant exceeds a benchmark concentration value, and the permittee determines that exceedance of the benchmark is attributable solely to the presence of that pollutant in the natural background, corrective action is not required provided that:
      - (a) The concentration of the benchmark monitoring result is less than or equal to the concentration of that pollutant in the natural background;
      - (b) The permittee documents and maintains with the SWPPP the supporting rationale for concluding that benchmark exceedances are in fact attributable solely to natural background pollutant levels. The supporting rationale shall include any data previously collected by the facility or others (including literature studies) that describe the levels of natural background pollutants in the facility's stormwater discharges; and
      - (c) The permittee notifies the department on the benchmark monitoring DMR that the benchmark exceedances are attributable solely to natural background pollutant levels.

Natural background pollutants include those substances that are naturally occurring in soils or groundwater. Natural background pollutants do not include legacy pollutants from earlier activity on the facility's site, or pollutants in run-on from neighboring sources that are not naturally occurring.

- b. Corrective actions. The permittee shall take corrective action whenever:
  - (1) Routine facility inspections, inspections by local, state or federal officials, or any other process, observation or event result in a determination that modifications to the stormwater control measures are necessary to meet the permit requirements;

- (2) There is any exceedance of an effluent limitation (including coal pile runoff), TMDL wasteload allocation, or a reduction required by a local ordinance established by a municipality to meet Chesapeake Bay TMDL requirements; or
- (3) The department determines, or the permittee becomes aware, that the stormwater control measures are not stringent enough for the discharge to meet applicable water quality standards.

The permittee shall review the SWPPP and modify it as necessary to address any deficiencies. Revisions to the SWPPP shall be completed within 60 days following the discovery of the deficiency. When control measures need to be modified or added (distinct from regular preventive maintenance of existing control measures described in Part III C), implementation shall be completed before the next anticipated storm event if possible, but no later than 60 days after the deficiency is discovered, or as otherwise provided or approved by the department. In cases where construction is necessary to implement control measures, the permittee shall include a schedule in the SWPPP that provides for the completion of the control measures as expeditiously as practicable, but no later than three years after the deficiency is discovered. Where a construction compliance schedule is included in the SWPPP, the SWPPP shall include appropriate nonstructural and temporary controls to be implemented in the affected portion of the facility prior to completion of the permanent control measure. The amount of time taken to modify a control measure or implement additional control measures shall be documented in the SWPPP.

Any corrective actions taken shall be documented and retained with the SWPPP. Reports of corrective actions shall be signed in accordance with Part II K.

- c. Follow-up reporting. If at any time monitoring results indicate that discharges from the facility exceed an effluent limitation or a TMDL wasteload allocation, or the department determines that discharges from the facility are causing or contributing to an exceedance of a water quality standard, immediate steps shall be taken to eliminate the exceedances in accordance with the above Part I A 6 b (Corrective actions). Within 30 calendar days of implementing the relevant corrective action, an exceedance report shall be submitted to the department. The following information shall be included in the report:
  - (1) General permit registration number;
  - (2) Facility name and address;
  - (3) Receiving water for each outfall exceeding an effluent limitation of TMDL wasteload allocation;
  - (4) Monitoring data from the event being reported;
  - (5) A narrative description of the situation;
  - (6) A description of actions taken since the event was discovered and steps taken to minimize to the extent feasible pollutants in the discharge; and
  - (7) A local facility contact name, email address, and phone number.

## B. Special conditions.

1. Authorized nonstormwater discharges. Except as provided in this section or in Part IV (9VAC25-151-90 et seq.), all discharges covered by this permit shall be composed entirely of stormwater. The following nonstormwater discharges are authorized by this permit:
  - a. Discharges from emergency firefighting activities;
  - b. Fire hydrant flushings, managed in a manner to avoid an instream impact;
  - c. Potable water, including water line flushings, managed in a manner to avoid an instream impact;
  - d. Uncontaminated condensate from air conditioners, coolers, and other compressors and from the outside storage of refrigerated gases or liquids;

- e. Irrigation drainage;
- f. Landscape watering provided all pesticides, herbicides, and fertilizer have been applied in accordance with the approved labeling;
- g. Routine external building washdown that does not use detergents or hazardous cleaning products;
- h. Pavement wash waters where no detergents or hazardous cleaning products are used and no spills or leaks of toxic or hazardous materials have occurred (unless all spilled material has been removed). Pavement wash waters shall be managed in a manner to avoid an instream impact;
- i. Uncontaminated groundwater or spring water;
- j. Foundation or footing drains where flows are not contaminated with process materials; and
- k. Incidental windblown mist from cooling towers that collects on rooftops or adjacent portions of the facility, but not intentional discharges from the cooling tower (e.g., "piped" cooling tower blowdown or drains).

All other nonstormwater discharges are not authorized and shall either be eliminated or covered under a separate VPDES permit.

2. Releases of hazardous substances or oil in excess of reportable quantities. The discharge of hazardous substances or oil in the stormwater discharges from the facility shall be prevented or minimized in accordance with the SWPPP for the facility. This permit does not authorize the discharge of hazardous substances or oil resulting from an on-site spill. This permit does not relieve the permittee of the reporting requirements of 40 CFR Part 110, 40 CFR Part 117, and 40 CFR Part 302 or § 62.1-44.34:19 of the Code of Virginia.

Where a release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302 occurs during a 24-hour period:

- a. The permittee is required to notify the department in accordance with the requirements of Part II G as soon as he has knowledge of the discharge;
  - b. Where a release enters an MS4, the permittee shall also notify the owner of the MS4; and
  - c. The SWPPP required under Part III shall be reviewed to identify measures to prevent the reoccurrence of such releases and to respond to such releases, and the SWPPP shall be modified where appropriate.
3. Colocated industrial activity. If the facility has industrial activities occurring on-site which are described by any of the activities in Part IV of the permit (9VAC25-151-90 et seq.), those industrial activities are considered to be colocated industrial activities. Stormwater discharges from colocated industrial activities are authorized by this permit, provided that the permittee complies with any and all additional SWPPP and monitoring requirements from Part IV applicable to that particular colocated industrial activity. The permittee shall be responsible for additional SWPPP and monitoring requirements applicable to the colocated industrial activity by examining the narrative descriptions of all discharges covered under this section.
  4. The stormwater discharges authorized by this permit may be combined with other sources of stormwater which are not required to be covered under a VPDES permit, so long as the combined discharge is in compliance with this permit.
  5. There shall be no discharge of waste, garbage, or floating debris in other than trace amounts.

6. Approval for coverage under this general permit does not relieve the permittee of the responsibility to comply with any other applicable federal, state, or local statute, ordinance, or regulation.
7. Discharges to waters subject to TMDL wasteload allocations. Owners of facilities that are a source of the specified pollutant of concern to waters for which a TMDL wasteload allocation has been approved prior to the term of this permit shall incorporate measures and controls into the SWPPP required by Part III that are consistent with the assumptions and requirements of the TMDL. The department will provide written notification to the owner that a facility is subject to the TMDL requirements. The facility's SWPPP shall specifically address any conditions or requirements included in the TMDL that are applicable to discharges from the facility. If the TMDL establishes a specific numeric wasteload allocation that applies to discharges from the facility, the owner shall perform any required monitoring in accordance with Part I A 1 c (3), and implement control measures designed to meet that allocation.
8. Discharges to waters subject to the Chesapeake Bay TMDL.
  - a. Owners of facilities in the Chesapeake Bay watershed shall monitor their discharges for total suspended solids (TSS), total nitrogen (TN), and total phosphorus (TP) to characterize the contributions from their facility's specific industrial sector for these parameters. Total nitrogen is the sum of total Kjeldahl nitrogen (TKN) and nitrite + nitrate and shall be derived from the results of those tests. After the facility is granted coverage under the permit, samples shall be collected during each of the first four monitoring periods (i.e., the first two years of permit coverage). Monitoring periods are specified in Part I A 2. Samples shall be collected and analyzed in accordance with Part I A 2. Monitoring results shall be reported in accordance with Part I A 5 and Part II C, and retained in accordance with Part II B.
  - b. Facilities that were covered under the 2014 industrial stormwater general permit shall comply with the following:
    - (1) Facilities that submitted a Chesapeake Bay TMDL action plan that was approved by the board during the 2014 industrial stormwater general permit term shall continue to implement the approved Chesapeake Bay TMDL action plan during this permit term. An annual report shall be submitted to the department by June 30 of each year describing the progress in meeting the required reductions unless this reporting requirement is waived by the department in accordance with Part I B 8 g. Monitoring in accordance with Part I B 8 a is not required for these facilities during this permit term.
    - (2) Facilities that completed four samples for TSS, TN, and TP during the 2014 industrial stormwater general permit term shall utilize the procedures in Part I B 8 c (2) to calculate their facility stormwater loads. The permittee shall submit a copy of the calculations and Chesapeake Bay TMDL action plan if required under Part I B 8 f to the department within 60 days of coverage under this general permit.
    - (3) Facilities that did not complete four samples for TSS, TN, and TP during the 2014 industrial stormwater general permit term shall be subject to completing the monitoring requirements in Part I B 8 a beginning with the first full monitoring period after receiving permit coverage. Calculations and a Chesapeake Bay TMDL action plan if required under Part I B 8 f shall be submitted no later than 90 days following the completion of the fourth monitoring period to the DEQ regional office serving the area where the industrial facility is located on a form provided by the department and maintained with the facility's SWPPP.
    - (4) Facilities that monitored for TSS, TN, or TP may use the applicable sampling data collected during the 2014 industrial stormwater general permit term to satisfy all or part of the four monitoring periods requirement in accordance with Part I B 8 a.



- c. Chesapeake Bay TMDL wasteload allocations and Chesapeake Bay TMDL action plans.
- (1) EPA's Chesapeake Bay TMDL (December 29, 2010) includes wasteload allocations for VPDES permitted industrial stormwater facilities as part of the regulated stormwater aggregate load. EPA used data submitted by Virginia with the Phase I Chesapeake Bay TMDL Watershed Implementation Plan, including the number of industrial stormwater permits per county and the number of urban acres regulated by industrial stormwater permits, as part of their development of the aggregate load. Aggregate loads for industrial stormwater facilities were appropriate because actual facility loading data were not available to develop individual facility wasteload allocations.

Virginia estimated the loadings from industrial stormwater facilities using actual and estimated facility acreage information and TP, TN, and TSS loading rates from the Northern Virginia Planning District Commission (NVPDC) Guidebook for Screening Urban Nonpoint Pollution Management Strategies (Annandale, VA November 1979), prepared for the Metropolitan Washington Council of Governments. The loading rates used were as follows:

TP - High (80%) imperviousness industrial; 1.5 lb/ac/yr  
TN - High (80%) imperviousness industrial; 12.3 lb/ac/yr  
TSS - High (80%) imperviousness industrial; 440 lb/ac/yr

The actual facility area information and the TP, TN, and TSS data collected for this permit will be used by the board to quantify the nutrient and sediment loads from VPDES permitted industrial stormwater facilities.

- (2) Calculation of facility loads. The permittee shall analyze the nutrient and sediment data collected in accordance with Part I B 8 a and 8 b to determine if pollution reductions are required for this permit term. The permittee shall average the data collected at the facility for each of the pollutants of concern (POC) (e.g., TP, TN, and TSS) and compare the results to the loading rates for TP, TN, and TSS presented in Part I B 8 c (1).

The following formula may be used to determine the loading rate:

$$L = 0.226 \times P \times P_j \times (0.05 + (0.9 \times I_a)) \times C$$

where:

L = the POC loading rate (lb/acre/year)

P = the annual rainfall (inches/year) - The permittee may use either actual annual average rainfall data for the facility location (in inches/year), the Virginia annual average rainfall of 44.3 inches/year, or another method approved by the board.

P<sub>j</sub> = the fraction of annual events that produce runoff - The permittee shall use 0.9 unless the board approves another rate.

I<sub>a</sub> = the impervious fraction of the facility impervious area of industrial activity to the facility industrial activity area

C = the POC average concentration of all facility samples (mg/L) - Facilities with multiple outfalls shall calculate a weighted average concentration for each outfall using the drainage area of each outfall.

For total phosphorus and total suspended solids, all daily concentration data below the quantitation level (QL) for the analytical method used shall be treated as half the QL. All daily concentration data equal to or above the QL for the analytical method used shall be treated as it is reported.

For total nitrogen, if none of the daily concentration data for the respective species (i.e., TKN, nitrate, or nitrite) are equal to or above the QL for the respective analytical methods used, the daily TN concentration value reported shall equal one half of the largest QL used for the respective species. If one of the data is equal to or above the QL, the daily TN concentration value shall be treated as that data point is reported. If more than one of the data is above the QL, the daily TN concentration value shall equal the sum of the data points as reported.

- d. The permittee shall submit a copy of the calculations to the department within 90 days from the end of the last monitoring period that satisfies the monitoring requirement in Part I B 8 a. Calculations shall be submitted to the DEQ regional office serving the area where the industrial facility is located, on a form provided by the department, and maintained with the facility's SWPPP.
- e. Any modification to the facility's industrial acreage or impervious industrial acreage shall require the facility to recalculate facility loading rates. This may require the facility to modify the facility's Chesapeake Bay TMDL action plan or submit a Chesapeake Bay TMDL action plan as appropriate. Any recalculation of facility loading rates or modifications to a Chesapeake Bay TMDL action plan shall be submitted to the department within 90 days of the date on which the permittee completes a site modification. If previous monitoring is no longer representative of the modified facility, monitoring in accordance with Part I B 8 a shall commence within 90 days of the modification and the revised calculations and Chesapeake Bay TMDL action plan if required under Part I B 8 f shall be submitted no later than 90 days following completion of the fourth monitoring period.
- f. Chesapeake Bay TMDL action plan requirements. If the calculated facility loading rate for TP, TN, or TSS is above the loading rates for TP, TN, or TSS presented in Part I B 8 c (1), then the permittee shall develop and submit a Chesapeake Bay TMDL action plan to the department.

The Chesapeake Bay TMDL action plan shall be submitted on a form provided by the department to the regional office serving the area where the industrial facility is located within 90 days following the completion of the fourth monitoring period. A copy of the current Chesapeake Bay TMDL action plan and all facility loading rate calculations shall be maintained with the facility's SWPPP. The Chesapeake Bay TMDL action plan shall include:

- (1) A determination of the total pollutant load reductions for TP, TN, and TSS (as appropriate) necessary to reduce the annual loads from industrial activities. This shall be determined by multiplying the industrial average times the difference between the TMDL loading rates listed in Part I B 8 c (1) and the actual facility loading rates calculated in accordance with Part I B 8 c (2). The reduction applies to the total difference calculated for each pollutant of concern;
  - (2) The means and methods, such as management practices and retrofit programs, that will be utilized to meet the required reductions determined in Part I B 8 f (1) and a schedule to achieve those reductions by June 30, 2024. The schedule should include annual milestones to demonstrate the ongoing progress in meeting those reductions; and
  - (3) The permittee may consider utilization of any pollutant trading or offset program in accordance with §§ 62.1-44.19:20 through 62.1-44.19:23 of the Code of Virginia, governing trading and offsetting, to meet the required reductions.
- g. A permittee required to develop and implement a Chesapeake Bay TMDL Action Plan shall submit an annual report to the department by June 30 of each year describing the progress in meeting the required reductions.

- h. Chesapeake Bay TMDL action plan annual reporting waiver. Upon implementation of the facility's Chesapeake Bay TMDL action plan, permittees may submit a waiver for the annual reporting requirements. The waiver request shall be submitted for board approval to the DEQ regional office serving the area where the industrial facility is located on a form provided by the department. Annual reporting requirements will be in effect until the permittee receives notice from the department that the waiver has been approved. A copy of the waiver approval shall be maintained with the SWPPP. The waiver may be revoked for cause by the board. A waiver request may be approved by the board once the permittee demonstrates that they have achieved all of the required pollutant reductions calculated under Part I B 8 f (1). Pollutant reductions may be achieved using a combination of the following alternatives:
- (1) Reductions provided by one or more of the BMPs from the Virginia Stormwater BMP Clearinghouse listed in 9VAC25-870-65, approved BMPs found on the Virginia Stormwater Clearinghouse website, or BMPs approved by the Chesapeake Bay Program. Any BMPs implemented to provide the required pollutant reductions shall be incorporated in the SWPPP and be permanently maintained by the permittee;
  - (2) Implementation of site-specific BMPs followed by a minimum of four stormwater samples collected in accordance with sampling requirements in Part I B 8 a that demonstrate pollutant loadings have been reduced below those calculated under Part I B 8 c. Any BMPs implemented to provide the required pollutant reductions shall be incorporated in the SWPPP and be permanently maintained by the permittee; or
  - (3) Acquisition of nonpoint source credits certified by the board as perpetual in accordance with § 62.1-44.19:20 of the Code of Virginia.
9. Discharges through a regulated MS4 to waters subject to the Chesapeake Bay TMDL. In addition to the requirements of this permit, any facility with industrial activity stormwater discharges through a regulated MS4 that is notified by the MS4 operator that the locality has adopted ordinances to meet the Chesapeake Bay TMDL shall incorporate measures and controls into its SWPPP to comply with applicable local TMDL ordinance requirements.
10. Expansion of facilities that discharge to waters subject to the Chesapeake Bay TMDL. Virginia's Phase I Chesapeake Bay TMDL Watershed Implementation Plan (November 29, 2010), states that the wasteloads from any expansion of an existing permitted facility discharging stormwater in the Chesapeake Bay watershed cannot exceed the nutrient and sediment loadings that were discharged from the expanded portion of the land prior to the land being developed for the expanded industrial activity.
- a. For any industrial activity area expansions (i.e., construction activities, including clearing, grading, and excavation activities) that commence on or after July 1, 2019, (the effective date of this permit), the permittee shall document in the SWPPP the information and calculations used to determine the nutrient and sediment loadings discharged from the expanded land area prior to the land being developed, and the measures and controls that were employed to meet the no net increase of stormwater nutrient and sediment load as a result of the expansion of the industrial activity. Any land disturbance that is exempt from permitting under the VPDES construction stormwater general permit regulation (9VAC25-880) is exempt from this requirement.
  - b. The permittee may use the VSMP water quality design criteria to meet the requirements of Part I B 10 a. Under this criteria, the total phosphorus load shall not exceed the greater of (i) the total phosphorus load that was discharged from the expanded portion of the land prior to the land being developed for the industrial activity or (ii) 0.41 pounds per acre per year. Compliance with the water quality design criteria may be determined utilizing the Virginia Runoff Reduction Method or another equivalent methodology approved by the board. Design specifications and pollutant removal efficiencies for specific BMPs can be found on the Virginia Stormwater BMP Clearinghouse website.

- c. The permittee may consider utilization of any pollutant trading or offset program in accordance with §§ 62.1-44.19:20 through 62.1-44.19:23 of the Code of Virginia, governing trading and offsetting, to meet the no net increase requirement.
10. Water quality protection. The discharges authorized by this permit shall be controlled as necessary to meet applicable water quality standards. The board expects that compliance with the conditions in this permit will control discharges as necessary to meet applicable water quality standards.
11. Adding or deleting stormwater outfalls. The permittee may add new or delete existing stormwater outfalls at the facility as necessary and appropriate. The permittee shall update the SWPPP and notify the department of all outfall changes within 30 days of the change. The permittee shall submit a copy of the updated SWPPP site map with this notification.
12. Antidegradation requirements for new or increased discharges to high quality waters. Facilities that add new outfalls, or increase their discharges from existing outfalls that discharge directly to high quality waters designated under Virginia's water quality standards antidegradation policy under 9VAC25-260-30 A 2 may be notified by the department that additional control measures, or other permit conditions are necessary to comply with the applicable antidegradation requirements, or may be notified that an individual permit is required in accordance with 9VAC25-31-170 B 3.
13. Termination of permit coverage.
  - a. The owner may terminate coverage under this general permit by filing a complete notice of termination with the department. The notice of termination may be filed after one or more of the following conditions have been met:
    - (1) Operations have ceased at the facility and there are no longer discharges of stormwater associated with industrial activity from the facility;
    - (2) A new owner has assumed responsibility for the facility. A notice of termination does not have to be submitted if a VPDES Change of Ownership Agreement Form has been submitted;
    - (3) All stormwater discharges associated with industrial activity have been covered by an individual VPDES permit; or
    - (4) Termination of coverage is being requested for another reason, provided the board agrees that coverage under this general permit is no longer needed.
  - b. The notice of termination shall contain the following information:
    - (1) Owner's name, mailing address, telephone number, and email address (if available);
    - (2) Facility name and location;
    - (3) VPDES industrial stormwater general permit registration number;
    - (4) The basis for submitting the notice of termination, including:
      - (a) A statement indicating that a new owner has assumed responsibility for the facility;
      - (b) A statement indicating that operations have ceased at the facility, and there are no longer discharges of stormwater associated with industrial activity from the facility;
      - (c) A statement indicating that all stormwater discharges associated with industrial activity have been covered by an individual VPDES permit; or
      - (d) A statement indicating that termination of coverage is being requested for another reason and a description of the reason; and
    - (5) The following certification: "I certify under penalty of law that all stormwater discharges associated with industrial activity from the identified facility that are authorized by this VPDES general permit have been eliminated, or covered under a VPDES individual permit, or that I am no longer the owner of the industrial activity, or permit coverage should be terminated for another reason listed above. I understand

that by submitting this notice of termination, that I am no longer authorized to discharge stormwater associated with industrial activity in accordance with the general permit, and that discharging pollutants in stormwater associated with industrial activity to surface waters is unlawful where the discharge is not authorized by a VPDES permit. I also understand that the submittal of this notice of termination does not release an owner from liability for any violations of this permit or the Clean Water Act."

- c. The notice of termination shall be signed in accordance with Part II K.
- d. The notice of termination shall be submitted to the DEQ regional office serving the area where the industrial facility is located.

## Part II. Conditions Applicable To All VPDES Permits

### A. Monitoring.

1. Samples and measurements taken as required by this permit shall be representative of the monitored activity.
2. Monitoring shall be conducted according to procedures approved under 40 CFR Part 136 or alternative methods approved by the U.S. Environmental Protection Agency, unless other procedures have been specified in this permit.
3. The permittee shall periodically calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at intervals that will ensure accuracy of measurements.
4. Samples taken as required by this permit shall be analyzed in accordance with 1VAC30-45, (Certification for Noncommercial Environmental Laboratories), or 1VAC30-46 (Accreditation for Commercial Environmental Laboratories).

### B. Records.

1. Records of monitoring information shall include:
  - a. The date, exact place, and time of sampling or measurements;
  - b. The individuals who performed the sampling or measurements;
  - c. The dates and times analyses were performed;
  - d. The individuals who performed the analyses;
  - e. The analytical techniques or methods used; and
  - f. The results of such analyses.
2. The permittee shall retain copies of the SWPPP, including any modifications made during the term of this permit, records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the registration statement for this permit, for a period of at least three years from the date that coverage under this permit expires or is terminated. This period of retention shall be extended automatically during the course of any unresolved litigation regarding the regulated activity or regarding control standards applicable to the permittee, or as requested by the board.

### C. Reporting Monitoring Results.

1. The permittee shall submit the results of the monitoring required by this permit not later than the 10th day of the month after monitoring takes place, unless another reporting schedule is specified elsewhere in this permit. Monitoring results shall be submitted to the department's regional office.
2. Monitoring results shall be reported in the department's electronic discharge monitoring report (e-DMR) system. All reports and forms submitted in compliance with this permit shall be submitted electronically by the permittee in accordance with 9VAC25-31-1020.
3. If the permittee monitors any pollutant specifically addressed by this permit more frequently than required by this permit using test procedures approved under 40 CFR Part 136 or using other test procedures approved by the U.S. Environmental Protection Agency or using procedures specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in e-DMR or reporting form specified by the department.
4. Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in this permit.

D. Duty to Provide Information.

The permittee shall furnish to the Department, within a reasonable time, any information which the board may request to determine whether cause exists for modifying, revoking and reissuing, or terminating coverage under this permit or to determine compliance with this permit. The board may require the permittee to furnish, upon request, such plans, specifications, and other pertinent information as may be necessary to determine the effect of the wastes from the discharge on the quality of state waters, or such other information as may be necessary to accomplish the purposes of the State Water Control Law. The permittee shall also furnish to the department upon request, copies of records required to be kept by this permit.

E. Compliance Schedule Reports.

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

F. Unauthorized Discharges.

Except in compliance with this permit, or another permit issued by the Board, it shall be unlawful for any person to:

1. Discharge into state waters sewage, industrial wastes, other wastes, or any noxious or deleterious substances; or
2. Otherwise alter the physical, chemical or biological properties of such state waters and make them detrimental to the public health, or to animal or aquatic life, or to the use of such waters for domestic or industrial consumption, or for recreation, or for other uses.

G. Reports of Unauthorized Discharges.

Any permittee who discharges or causes or allows a discharge of sewage, industrial waste, other wastes or any noxious or deleterious substance into or upon state waters in violation of Part II F; or who discharges or causes or allows a discharge that may reasonably be expected to enter state waters in violation of Part II F, shall notify the department of the discharge immediately upon discovery of the discharge, but in no case later than 24 hours after said discovery. A written report of the unauthorized discharge shall be submitted to the department within five days of discovery of the discharge. The written report shall contain:

1. A description of the nature and location of the discharge;
2. The cause of the discharge;
3. The date on which the discharge occurred;
4. The length of time that the discharge continued;
5. The volume of the discharge;
6. If the discharge is continuing, how long it is expected to continue;
7. If the discharge is continuing, what the expected total volume of the discharge will be; and
8. Any steps planned or taken to reduce, eliminate and prevent a recurrence of the present discharge or any future discharges not authorized by this permit.

Discharges reportable to the department under the immediate reporting requirements of other regulations are exempted from this requirement.

#### H. Reports of Unusual or Extraordinary Discharges.

If any unusual or extraordinary discharge including a bypass or upset should occur from a treatment works and the discharge enters or could be expected to enter state waters, the permittee shall promptly notify, in no case later than 24 hours, the department by telephone after the discovery of the discharge. This notification shall provide all available details of the incident, including any adverse effects on aquatic life and the known number of fish killed. The permittee shall reduce the report to writing and shall submit it to the department within five days of discovery of the discharge in accordance with Part II I 1 b. Unusual and extraordinary discharges include any discharge resulting from:

1. Unusual spillage of materials resulting directly or indirectly from processing operations;
2. Breakdown of processing or accessory equipment;
3. Failure or taking out of service some or all of the treatment works; and
4. Flooding or other acts of nature.

#### I. Reports of Noncompliance.

1. The permittee shall report any noncompliance that may adversely affect state waters or may endanger public health.
  - a. An oral report shall be provided within 24 hours from the time the permittee becomes aware of the circumstances. The following shall be included as information which shall be reported within 24 hours under Part II I:
    - (1) Any unanticipated bypass; and
    - (2) Any upset which causes a discharge to surface waters.
  - b. A written report shall be submitted within five days and shall contain:
    - (1) A description of the noncompliance and its cause;
    - (2) The period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and
    - (3) Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

The board may waive the written report on a case-by-case basis for reports of noncompliance under Part II I if the oral report has been received within 24 hours and no adverse impact on state waters has been reported.

2. The permittee shall report all instances of noncompliance not reported under Part II I 1 in writing, at the time the next monitoring reports are submitted. The reports shall contain the information listed in Part II I 1.
3. The immediate (within 24 hours) reports required in Part II G, H, and I, may be made to the department's regional office. Reports may be made by telephone, FAX, or online at <http://www.deq.virginia.gov/Programs/PollutionResponsePreparedness/MakingaReport.aspx>. For reports outside normal working hours, a message may be left and this shall fulfill the immediate reporting requirement. For emergencies, the Virginia Department of Emergency Management maintains a 24-hour telephone service at 1-800-468-8892.

#### J. Notice of Planned Changes.

1. The permittee shall give notice to the department as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:
  - a. The permittee plans alteration or addition to any building, structure, facility, or installation from which there is or may be a discharge of pollutants, the construction of which commenced:



- (1) After promulgation of standards of performance under § 306 of Clean Water Act which are applicable to such source; or
  - (2) After proposal of standards of performance in accordance with § 306 of Clean Water Act which are applicable to such source, but only if the standards are promulgated in accordance with § 306 within 120 days of their proposal;
  - b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations nor to notification requirements specified elsewhere in this permit; or
  - c. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.
2. The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

#### K. Signatory Requirements.

1. Registration Statements. All registration statements shall be signed as follows:
  - a. For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation; or (ii) the manager of one or more manufacturing, production, or operating facilities, provided the manager is authorized to make management decisions that govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit registration requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;
  - b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or
  - c. For a municipality, state, federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a public agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.
2. Reports, etc. All reports required by permits, and other information requested by the board shall be signed by a person described in Part II K 1 or by a duly authorized representative of that person. A person is a duly authorized representative only if:
  - a. The authorization is made in writing by a person described in Part II K 1;
  - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. A duly authorized representative may thus be either a named individual or any individual occupying a named position; and
  - c. The written authorization is submitted to the department.
3. Changes to authorization. If an authorization under Part II K 2 is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Part II K 2 shall be submitted to the department prior to or together with any reports, or information to be signed by an authorized representative.

4. Certification. Any person signing a document under Part II K 1 or 2 shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

L. Duty to Comply.

The permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the State Water Control Law and the Clean Water Act, except that noncompliance with certain provisions of this permit may constitute a violation of the State Water Control Law but not the Clean Water Act. Permit noncompliance is grounds for enforcement action; for permit coverage termination or denial of a permit coverage renewal.

The permittee shall comply with effluent standards or prohibitions established under § 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish these standards even if this permit has not yet been modified to incorporate the requirement.

M. Duty to Reapply.

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee shall submit a new registration statement at least 60 days before the expiration date of the existing permit, unless permission for a later date has been granted by the board. The board shall not grant permission for registration statements to be submitted later than the expiration date of the existing permit.

N. Effect of a Permit.

This permit does not convey any property rights in either real or personal property or any exclusive privileges, nor does it authorize any injury to private property or invasion of personal rights, or any infringement of federal, state or local law or regulations.

O. State Law.

Nothing in this permit shall be construed to preclude the institution of any legal action under, or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any other state law or regulation or under authority preserved by § 510 of the Clean Water Act. Except as provided in permit conditions on "bypassing" (Part II U), and "upset" (Part II V) nothing in this permit shall be construed to relieve the permittee from civil and criminal penalties for noncompliance.

P. Oil and Hazardous Substance Liability.

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under §§ 62.1-44.34:14 through 62.1-44.34:23 of the State Water Control Law.

Q. Proper Operation and Maintenance.

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes effective plant performance, adequate funding, adequate staffing, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by the permittee only when the operation is necessary to achieve compliance with the conditions of this permit.

R. Disposal of Solids or Sludges.

Solids, sludges or other pollutants removed in the course of treatment or management of pollutants shall be disposed of in a manner so as to prevent any pollutant from such materials from entering state waters.

S. Duty to Mitigate.

The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

T. Need to Halt or Reduce Activity not a Defense.

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

U. Bypass

1. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Part II U 2 and 3.
2. Notice
  - a. Anticipated bypass. If the permittee knows in advance of the need for a bypass, prior notice shall be submitted, if possible at least 10 days before the date of the bypass.
  - b. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Part II I.
3. Prohibition of bypass.
  - a. Bypass is prohibited, and the board may take enforcement action against a permittee for bypass, unless:
    - (1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
    - (2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
    - (3) The permittee submitted notices as required under Part II U 2.
  - b. The board may approve an anticipated bypass, after considering its adverse effects, if the board determines that it will meet the three conditions listed above in Part II U 3 a.

#### V. Upset.

1. An upset constitutes an affirmative defense to an action brought for noncompliance with technology based permit effluent limitations if the requirements of Part II V 2 are met. A determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is not a final administrative action subject to judicial review.
2. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
  - a. An upset occurred and that the permittee can identify the causes of the upset;
  - b. The permitted facility was at the time being properly operated;
  - c. The permittee submitted notice of the upset as required in Part II I; and
  - d. The permittee complied with any remedial measures required under Part II S.
3. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

#### W. Inspection and Entry.

The permittee shall allow the director, or an authorized representative, including an authorized contractor acting as a representative of the administrator, upon presentation of credentials and other documents as may be required by law, to:

1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
4. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act and the State Water Control Law, any substances or parameters at any location.

For purposes of this section, the time for inspection shall be deemed reasonable during regular business hours, and whenever the facility is discharging. Nothing contained herein shall make an inspection unreasonable during an emergency.

#### X. Permit Actions.

Permit coverages may be terminated for cause. The filing of a request by the permittee for a permit termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

#### Y. Transfer of Permits.

1. Permits are not transferable to any person except after notice to the department.
2. Coverage under this permit may be automatically transferred to a new permittee if:
  - a. The current permittee notifies the department within 30 days of the transfer of the title to the facility or property; unless permission for a later date has been granted by the board;
  - b. The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them; and
  - c. The board does not notify the existing permittee and the proposed new permittee of its intent to deny the new permittee coverage under the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in Part II Y 2 b.

Z. Severability.

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

### Part III. Stormwater Pollution Prevention Plan

A stormwater pollution prevention plan (SWPPP) shall be developed and implemented for the facility covered by this permit. The SWPPP is intended to document the selection, design, and installation of control measures, including BMPs, to minimize the pollutants in all stormwater discharges from the facility, and to meet applicable effluent limitations and water quality standards.

The SWPPP requirements of this general permit may be fulfilled, in part, by incorporating by reference other plans or documents such as a spill prevention control and countermeasure (SPCC) plan developed for the facility under § 311 of the Clean Water Act, or best management practices (BMP) programs otherwise required for the facility, provided that the incorporated plan meets or exceeds the plan requirements of Part III B (Contents of the SWPPP). All plans incorporated by reference into the SWPPP become enforceable under this permit. If a plan incorporated by reference does not contain all of the required elements of the SWPPP of Part III B, the permittee shall develop the missing SWPPP elements and include them in the required plan.

#### A. Deadlines for SWPPP preparation and compliance.

1. Facilities that were covered under the 2014 Industrial Stormwater General Permit. Owners of facilities that were covered under the 2014 Industrial Stormwater General Permit who are continuing coverage under this general permit shall update and implement any revisions to the SWPPP within 90 days of the board granting coverage under this permit.
2. New facilities, facilities previously covered by an expiring individual permit, and existing facilities not currently covered by a VPDES permit. Owners of new facilities, facilities previously covered by an expiring individual permit, and existing facilities not currently covered by a VPDES permit who elect to be covered under this general permit shall prepare and implement the SWPPP prior to submitting the registration statement.
3. New owners of existing facilities. Where the owner of an existing facility that is covered by this permit changes, the new owner of the facility shall update and implement any revisions to the SWPPP within 60 days of the ownership change.
4. Extensions. Upon a showing of good cause, the director may establish a later date in writing for the preparation and compliance with the SWPPP.

#### B. Contents of the SWPPP.

The contents of the SWPPP shall comply with the requirements listed below and those in the appropriate sectors of Part IV (9VAC25-151-90 et seq.). These requirements are cumulative. If a facility has colocated industrial activities that are covered in more than one sector of Part IV, that facility's SWPPP shall comply with the requirements listed in all applicable sectors. The following requirements are applicable to all SWPPPs developed under this general permit. The SWPPP shall include, at a minimum, the following items:

1. Pollution prevention team. The SWPPP shall identify the staff individuals by name or title who comprise the facility's stormwater pollution prevention team. The pollution prevention team is responsible for assisting the facility or plant manager in developing, implementing, maintaining, revising and ensuring compliance with the facility's SWPPP. Specific responsibilities of each staff individual on the team shall be identified and listed.
2. Site description. The SWPPP shall include the following:
  - a. A description of the industrial activities at the facility.
  - b. A site map identifying the following:
    - (1) The boundaries of the property and the size of the property in acres;
    - (2) The location and extent of significant structures and impervious surfaces;

- (3) Locations of all stormwater conveyances, including ditches, pipes, swales, and inlets, and the directions of stormwater flow using arrows to indicate which direction stormwater will flow;
  - (4) Locations of all stormwater control measures, including BMPs;
  - (5) Locations of all surface water bodies, including wetlands;
  - (6) Locations of potential pollutant sources identified under Part III B 3;
  - (7) Locations where significant spills or leaks identified under Part III B 3 c have occurred;
  - (8) Locations of stormwater outfalls.
    - (a) An approximate outline of the area draining to each outfall;
    - (b) The drainage area of each outfall in acres;
    - (c) The longitude and latitude of each outfall;
    - (d) The location of any MS4 conveyance receiving discharge from the facility; and
    - (e) Each outfall shall be identified with a unique numerical identification code. For example: Outfall Number 001, Outfall Number 002, etc.;
  - (9) Location and description of all nonstormwater discharges;
  - (10) Location of any storage piles containing salt;
  - (11) Locations and sources of suspected run-on to the site from an adjacent property if the run-on is suspected of containing significant quantities of pollutants; and
  - (12) Locations of all stormwater monitoring points.
- c. Receiving waters and wetlands. The name of all surface waters receiving discharges from the site, including intermittent streams, dry sloughs, and arroyos. Provide a description of wetland sites that may receive discharges from the facility. If the facility discharges through an MS4, identify the MS4 operator, and the receiving water to which the MS4 discharges.
3. Summary of potential pollutant sources. The SWPPP shall identify each separate area at the facility where industrial materials or activities are exposed to stormwater. Industrial materials or activities include material handling equipment or activities, industrial machinery, raw materials, industrial production and processes, intermediate products, byproducts, final products, and waste products. Material handling activities include the storage, loading and unloading, transportation, disposal, or conveyance of any raw material, intermediate product, final product or waste product. For each separate area identified, the description shall include:
- a. Activities in the area. A list of the industrial activities exposed to stormwater.
  - b. Pollutants. A list of the pollutants, pollutant constituents, or industrial chemicals associated with each industrial activity that could potentially be exposed to stormwater. The pollutant list shall include all significant materials handled, treated, stored or disposed that have been exposed to stormwater in the three years prior to the date this SWPPP was prepared or amended. The list shall include any hazardous substances or oil at the facility.
  - c. Spills and leaks. The SWPPP shall clearly identify areas where potential spills and leaks that can contribute pollutants to stormwater discharges can occur and their corresponding outfalls. The SWPPP shall include a list of significant spills and leaks of toxic or hazardous pollutants that actually occurred at exposed areas, or that drained to a stormwater conveyance during the three-year period prior to the date this SWPPP was prepared or amended. The list shall be updated within 60 days of the incident if significant spills or leaks occur in exposed areas of the facility during the term of the permit.
  - d. Sampling data. The SWPPP shall include stormwater discharge sampling data collected during the previous three years.
4. Stormwater controls.
- a. Control measures shall be implemented for all the areas identified in Part III B 3 to prevent or control pollutants in stormwater discharges from the facility. Regulated stormwater discharges from the facility include stormwater run-on that commingles with stormwater discharges associated with industrial activity at the facility. The SWPPP shall describe the type, location and implementation of all control measures for each area where industrial materials or activities are exposed to stormwater.  
Selection of control measures shall take into consideration:

- (1) That preventing stormwater from coming into contact with polluting materials is generally more effective, and less costly, than trying to remove pollutants from stormwater;
  - (2) Control measures generally shall be used in combination with each other for most effective water quality protection;
  - (3) Assessing the type and quantity of pollutants, including their potential to impact receiving water quality, is critical to designing effective control measures;
  - (4) That minimizing impervious areas at the facility can reduce runoff and improve groundwater recharge and stream base flows in local streams (however, care must be taken to avoid groundwater contamination);
  - (5) Flow attenuation by use of open vegetated swales and natural depressions can reduce instream impacts of erosive flows;
  - (6) Conservation or restoration of riparian buffers will help protect streams from stormwater runoff and improve water quality; and
  - (7) Treatment interceptors (e.g., swirl separators and sand filters) may be appropriate in some instances to minimize the discharge of pollutants.
- b. Nonnumeric technology-based effluent limits. The permittee shall implement the following types of control measures to prevent and control pollutants in the stormwater discharges from the facility, unless it can be demonstrated and documented that such controls are not relevant to the discharges.
- (1) Good housekeeping. The permittee shall keep clean all exposed areas of the facility that are potential sources of pollutants to stormwater discharges. The permittee shall perform the following good housekeeping measures to minimize pollutant discharges:
    - (a) The SWPPP shall include a schedule for regular pickup and disposal of waste materials, along with routine inspections for leaks and conditions of drums, tanks, and containers;
    - (b) As feasible, the facility shall sweep or vacuum;
    - (c) Store materials in containers constructed of appropriate materials;
    - (d) Manage all waste containers to prevent a discharge of pollutants;
    - (e) Minimize the potential for waste, garbage, and floatable debris to be discharged by keeping areas exposed to stormwater free of such materials or by intercepting such materials prior to discharge; and
    - (f) Facilities that handle pre-production plastic or plastic waste shall implement BMPs to eliminate stormwater discharges of plastics.
  - (2) Eliminating and minimizing exposure. To the extent practicable, manufacturing, processing, and material storage areas (including loading and unloading, storage, disposal, cleaning, maintenance, and fueling operations) shall be located inside, or protected by a storm-resistant covering to prevent exposure to rain, snow, snowmelt, and runoff. Eliminating exposure at all industrial areas may make the facility eligible for the "Conditional Exclusion for No Exposure" provision of 9VAC25-31-120 E, thereby eliminating the need to have a permit. Unless infeasible, facilities shall implement the following:
    - (a) Use grading, berming, or curbing to prevent runoff of contaminated flows and divert run-on away from potential sources of pollutants;
    - (b) Locate materials, equipment, and activities so that potential leaks and spills are contained, or able to be contained, or diverted before discharge;
    - (c) Clean up spills and leaks immediately, upon discovery of the spills or leaks, using dry methods (e.g., absorbents) to prevent the discharge of pollutants;
    - (d) Store leaking vehicles and equipment indoors or, if stored outdoors, use drip pans and adsorbents;
    - (e) Utilize appropriate spill or overflow protection equipment;
    - (f) Perform all vehicle maintenance or equipment cleaning operations indoors, under cover, or in bermed areas that prevent runoff and run-on and also capture any overspray; and



- (g) Drain fluids from equipment and vehicles that will be decommissioned, and for any equipment and vehicles that remain unused for extended periods of time, inspect at least monthly for leaks.
- (3) Preventive maintenance. The permittee shall have a preventive maintenance program that includes regular inspection, testing, maintenance and repairing of all industrial equipment and systems to avoid situations that could result in leaks, spills and other releases of pollutants in stormwater discharged from the facility. This program is in addition to the specific control measure maintenance required under Part III C (Maintenance).
- (4) Spill prevention and response procedures. The SWPPP shall describe the procedures that will be followed for preventing and responding to spills and leaks, including:
- (a) Preventive measures, such as barriers between material storage and traffic areas, secondary containment provisions, and procedures for material storage and handling;
  - (b) Response procedures, including notification of appropriate facility personnel, emergency agencies, and regulatory agencies, and procedures for stopping, containing and cleaning up spills. Measures for cleaning up hazardous material spills or leaks shall be consistent with applicable Resource Conservation and Recovery Act regulations at 40 CFR Part 264 and 40 CFR Part 265. Employees who may cause, detect or respond to a spill or leak shall be trained in these procedures and have necessary spill response equipment available. If possible, one of these individuals shall be a member of the Pollution Prevention Team;
  - (c) Procedures for plainly labeling containers (e.g., "used oil," "spent solvents," "fertilizers and pesticides," etc.) that could be susceptible to spillage or leakage to encourage proper handling and facilitate rapid response if spills or leaks occur; and
  - (d) Contact information for individuals and agencies that must be notified in the event of a spill shall be included in the SWPPP, and in other locations where it will be readily available.
- (5) Salt storage piles or piles containing salt. Storage piles of salt or piles containing salt used for deicing or other commercial or industrial purposes shall be enclosed or covered to prevent exposure to precipitation. The permittee shall implement appropriate measures (e.g., good housekeeping, diversions, containment) to minimize exposure resulting from adding to or removing materials from the pile. All salt storage piles shall be located on an impervious surface. All runoff from the pile, and runoff that comes in contact with salt, including under drain systems, shall be collected and contained within a bermed basin lined with concrete or other impermeable materials, or within an underground storage tank or tanks, or within an above ground storage tank or tanks, or disposed of through a sanitary sewer (with the permission of the owner of the treatment facility). A combination of any or all of these methods may be used. In no case shall salt contaminated stormwater be allowed to discharge directly to the ground or to surface waters.
- (6) Employee training. The permittee shall implement a stormwater employee training program for the facility. The SWPPP shall include a schedule for all types of necessary training, and shall document all training sessions and the employees who received the training. Training shall be provided at least annually for all employees who work in areas where industrial materials or activities are exposed to stormwater, and for employees who are responsible for implementing activities identified in the SWPPP (e.g., inspectors, maintenance personnel, etc.). The training shall cover the components and goals of the SWPPP, and include such topics as spill response, good housekeeping, material management practices, control measure operation and maintenance, etc. The SWPPP shall include a summary of any training performed.

- (7) Sediment and erosion control. The SWPPP shall identify areas at the facility that, due to topography, land disturbance (e.g., construction, landscaping, site grading), or other factors, have a potential for soil erosion. The permittee shall identify and implement structural, vegetative, and stabilization control measures to prevent or control on-site and off-site erosion and sedimentation. Flow velocity dissipation devices shall be placed at discharge locations and along the length of any outfall channel if the flows would otherwise create erosive conditions.
- (8) Management of runoff. The SWPPP shall describe the stormwater runoff management practices (i.e., permanent structural control measures) for the facility. These types of control measures shall be used to divert, infiltrate, reuse, or otherwise reduce pollutants in stormwater discharges from the site.

Structural control measures may require a separate permit under § 404 of the Clean Water Act and the Virginia Water Protection Permit Program Regulation (9VAC25-210) before installation begins.

- (9) Dust suppression and vehicle tracking of industrial materials. The permittee shall implement control measures to minimize the generation of dust and off-site tracking of raw, final, or waste materials. Stormwater collected on-site may be used for the purposes of dust suppression or for spraying stockpiles. Potable water, well water, and uncontaminated reuse water may also be used for this purpose. There shall be no direct discharge to surface waters from dust suppression activities or as a result of spraying stockpiles.
5. Routine facility inspections. Personnel who possess the knowledge and skills to assess conditions and activities that could impact stormwater quality at the facility and who can also evaluate the effectiveness of control measures shall regularly inspect all areas of the facility where industrial materials or activities are exposed to stormwater, areas where spills or leaks have occurred in the past three years, discharge points, and control measures. At least one member of the pollution prevention team shall participate in the routine facility inspections.

The inspection frequency shall be specified in the SWPPP based upon a consideration of the level of industrial activity at the facility, but shall be at a minimum of once per calendar quarter unless more frequent intervals are specified elsewhere in the permit or written approval is received from the department for less frequent intervals. Inspections shall be performed during operating hours. At least once each calendar year, the routine facility inspection shall be conducted during a period when a stormwater discharge is occurring.

The requirement for routine facility inspections is waived for facilities that have maintained an active VEEP E3/E4 status. Certain sectors in Part IV have additional inspection requirements. If the VEEP E3/E4 waiver language is not included for the sector specific inspections, these additional inspection requirements may not be waived.

Any deficiencies in the implementation of the SWPPP that are found shall be corrected as soon as practicable, but not later than within 60 days of the inspection, unless permission for a later date is granted in writing by the director. The results of the inspections shall be documented in the SWPPP and shall include at a minimum:

- a. The inspection date;
- b. The names of the inspectors;
- c. Weather information and a description of any discharges occurring at the time of the inspection;
- d. Any previously unidentified discharges of pollutants from the site;
- e. Any control measures needing maintenance or repairs;
- f. Any failed control measures that need replacement;

- g. Any incidents of noncompliance observed; and
- h. Any additional control measures needed to comply with the permit requirements.

C. Maintenance.

The SWPPP shall include a description of procedures and a regular schedule for preventive maintenance of all control measures, and shall include a description of the back-up practices that are in place should a runoff event occur while a control measure is off-line. The effectiveness of nonstructural control measures shall also be maintained by appropriate means (e.g., spill response supplies available and personnel trained, etc.).

All control measures identified in the SWPPP shall be maintained in effective operating condition and shall be observed at least annually when a stormwater discharge is occurring to ensure that they are functioning correctly. Where discharge locations are inaccessible, nearby downstream locations shall be observed. The observations shall be documented in the SWPPP.

If routine facility inspections required by Part III B 5 identify control measures that are not operating effectively, repairs or maintenance shall be performed before the next anticipated storm event. If maintenance prior to the next anticipated storm event is not possible, maintenance shall be scheduled and accomplished as soon as practicable. In the interim, back-up measures shall be employed and documented in the SWPPP until repairs or maintenance is complete. Documentation shall be kept with the SWPPP of maintenance and repairs of control measures, including the dates of regular maintenance, dates of discovery of areas in need of repair or replacement, dates for repairs, dates that the control measures returned to full function, and the justification for any extended maintenance or repair schedules.

D. Nonstormwater discharges.

1. Discharges of certain sources of nonstormwater listed in Part I B 1 are allowable discharges under this permit. All other nonstormwater discharges are not authorized and shall be either eliminated or covered under a separate VPDES permit.
2. Annual outfall evaluation for unauthorized discharges.
  - a. The SWPPP shall include documentation that all stormwater outfalls associated with industrial activity have been evaluated annually for the presence of unauthorized discharges. The documentation shall include:
    - (1) The date of the evaluation;
    - (2) A description of the evaluation criteria used;
    - (3) A list of the outfalls or on-site drainage points that were directly observed during the evaluation;
    - (4) A description of the results of the evaluation for the presence of unauthorized discharges; and
    - (5) The actions taken to eliminate unauthorized discharges if any were identified.
  - b. The permittee may request in writing to the department that the facility be allowed to conduct annual outfall evaluations at 20% of the outfalls. If approved, the permittee shall evaluate at least 20% of the facility outfalls each year on a rotating basis such that all facility outfalls will be evaluated during the period of coverage under this permit.

E. Signature and SWPPP review.

1. Signature and location. The SWPPP, including revisions to the SWPPP to document any corrective actions taken as required by Part I A 6, shall be signed in accordance with Part II K, dated, and retained on-site at the facility covered by this permit in accordance with Part II B 2. All other changes to the SWPPP, and other permit compliance documentation, shall be signed and dated by the person preparing the change or documentation. For inactive and unstaffed facilities, the plan may be kept at the nearest office of the permittee.
2. Availability. The permittee shall retain a copy of the current SWPPP required by this permit at the facility, and it shall be immediately available to the department, EPA, or the operator of an MS4 receiving discharges from the site at the time of an on-site inspection or upon request.
3. Required modifications. The permittee shall modify the SWPPP whenever necessary to address all corrective actions required by Part I A 6 a (Data exceeding benchmark concentration values) or Part I A 6 b (Corrective actions). Changes to the SWPPP shall be made in accordance with the corrective action deadlines in Part I A 6 a and Part I A 6 b, and shall be signed and dated in accordance with Part III E 1.

The director may notify the permittee at any time that the SWPPP, control measures, or other components of the facility's stormwater program do not meet one or more of the requirements of this permit. The notification shall identify specific provisions of the permit that are not being met, and may include required modifications to the stormwater program, additional monitoring requirements, and special reporting requirements. The permittee shall make any required changes to the SWPPP within 60 days of receipt of such notification, unless permission for a later date is granted in writing by the director, and shall submit a written certification to the director that the requested changes have been made.

F. Maintaining an updated SWPPP.

1. The permittee shall review and amend the SWPPP as appropriate whenever:
  - a. There is construction or a change in design, operation, or maintenance at the facility that has a significant effect on the discharge, or the potential for the discharge, of pollutants from the facility;
  - b. Routine inspections or compliance evaluations determine that there are deficiencies in the control measures, including BMPs;
  - c. Inspections by local, state, or federal officials determine that modifications to the SWPPP are necessary;
  - d. There is a significant spill, leak, or other release at the facility;
  - e. There is an unauthorized discharge from the facility; or
  - f. The department notifies the permittee that a TMDL has been developed and applies to the permitted facility, consistent with Part I B.
2. SWPPP modifications shall be made within 60 calendar days after discovery, observation or event requiring a SWPPP modification. Implementation of new or modified control measures (distinct from regular preventive maintenance of existing control measures described in Part III C) shall be initiated before the next storm event if possible, but no later than 60 days after discovery, or as otherwise provided or approved by the director. The amount of time taken to modify a control measure or implement additional control measures shall be documented in the SWPPP.
3. If the SWPPP modification is based on a significant spill, leak, release, or unauthorized discharge, include a description and date of the incident, the circumstances leading to the incident, actions taken in response to the incident, and measures to prevent the recurrence of such releases. Unauthorized discharges are subject to the reporting requirements of Part II G of this permit.

Part IV. Sector Specific Permit Requirements

The permittee must only comply with the additional requirements of Part IV (9VAC25-151-90 et seq.) that apply to the sectors of industrial activity located at the facility. These sector specific requirements are in addition to the requirements specified in Parts I, II and III of this permit. All numeric effluent limitations and benchmark monitoring concentration values reflect two significant digits, unless otherwise noted.

9VAC25-151-390. Sector AF – Facilities limited to total suspended solids benchmark monitoring requirements.

- A. Discharges covered under this section. The requirements listed under this section apply to stormwater discharges associated with industrial activity from facilities with SIC Codes 4011, 4013, 4111-4173, 4212-4231, 4311, and 5171.
- B. Benchmark monitoring and reporting requirements. Facilities or stormwater discharges included in this sector are required to monitor their stormwater discharges for the pollutants of concern listed in Table 390.

Table 390 Sector AF- Benchmark Monitoring Requirements	
Pollutants of Concern	Benchmark Concentration
Facilities Limited to Total Suspended Solids Benchmark Monitoring Requirements	
Total Suspended Solids (TSS)	100 mg/L

**Appendix 5. *Publicly Owned Stormwater Management Facility Maintenance Logs***

Inspected Spring 2020

Public Works				
BMP ID	Location	Type of BMP	Maintenance Required?	Notes
223	Spring Street	Filtterra	NO	
224	Spring Street	Filtterra	NO	
225	Spring Street	Filtterra	NO	
246	Meadow Branch Avenue	Filtterra	NO	
247	Meadow Branch Avenue	Filtterra	NO	
248	Meadow Branch Avenue	Filtterra	NO	
249	Meadow Branch Avenue	Filtterra	NO	
250	Meadow Branch Avenue	Filtterra	NO	
251	Meadow Branch Avenue	Filtterra	NO	
252	Meadow Branch Avenue	Filtterra	NO	
253	Meadow Branch Avenue	Filtterra	NO	
254	Meadow Branch Avenue	Filtterra	NO	
255	Meadow Branch Avenue	Filtterra	NO	
256	Meadow Branch Avenue	Filtterra	NO	
257	Meadow Branch Avenue	Filtterra	NO	
258	Meadow Branch Avenue	Filtterra	NO	
259	Meadow Branch Avenue	Filtterra	MINOR	Yard clippings
260	Meadow Branch Avenue	Filtterra	NO	
261	Meadow Branch Avenue	Filtterra	NO	
262	Meadow Branch Avenue	Filtterra	NO	
263	Meadow Branch Avenue	Filtterra	NO	
264	Meadow Branch Avenue	Filtterra	NO	
265	Meadow Branch Avenue	Filtterra	NO	
266	Meadow Branch Avenue	Filtterra	NO	
267	Meadow Branch Avenue	Filtterra	NO	
268	Meadow Branch Avenue	Filtterra	NO	
16	Mosby ROW	Underground Detention	NO	
40	100 West Tevis Street (Frederick Douglas School)	Detention Basin	MINOR	
25	1826 Tilghman Lane (Cottages at Willow Lawn)	Detention Basin	MINOR	
67	230 Hope Drive	Detention Basin	NO	
100	2024 Harvest Drive (Park Place)	Detention Basin	MINOR	Yard clippings, debris, and leaves. Some woody growth near outlet pipe.
110	330 Amherst Street (Selma Medical)	Detention Basin	MINOR	Grate may need to be adjusted or replaced.
143	2505 Goldenfield Lane	Detention Basin	MINOR	Trash, debris, yard clippings, and tree branches.
144	2653 Windwood Drive	Detention Basin	MINOR	Trash, debris, yard clippings, and tree branches.
146	841 Whittier Ponding Basin	Detention Basin	MINOR	Trash, debris, yard clippings, and tree branches.
93	1511 Stone House Court	Constructed Wetlands	MINOR	Trash, debris, yard clippings, and tree branches.

Legend	
Blue	In Compliance
Yellow	In Compliance, but requires minor maintenance if available
Red	Not In Compliance, requires maintenance

Parks and Recreation				
BMP ID	Location	Type of BMP	Maintenance Required?	Notes
59	1400 South Pleasant Valley (S. U.)	Bioretention	NO	Trash, debris, leaves, and yard clippings.
60	1400 South Pleasant Valley (S. U.)	Bioretention	NO	Trash, debris, leaves, and yard clippings. Pipe clogged.
41	627 North Pleasant Valley (Friendship Fire Hall)	Detention Basin	MINOR	Trash, debris, leaves, and yard clippings. Pipe clogged.
107	702 Kennedy Drive (Rolling Hills Park)	Detention Basin	NO	Leaves and yard clippings
93	1511 Stone House Court	Constructed Wetlands	MINOR	Trash, debris, leaves, and yard clippings.

**Appendix 6. Good Housekeeping and *Pollution Prevention Standard Operating Procedures (SOP)***



**Phase II MS4 General Permit  
Permit No. VAR040053**

**Pollution Prevention / Good Housekeeping  
For Municipal Operations**

**Standard Operating Procedures**



2013-2018

Prepared By:  
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## Section 1 Purpose and Scope

Per the requirements of the General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4 Permit), the City of Winchester shall develop and implement daily good housekeeping procedures, in accordance with Sec. II(B)(6)(a) and Table 1, for all applicable municipal operations within 24 months of permit coverage.

The scope of work includes daily good housekeeping procedures development in accordance with the MS4 Permit requirements for inclusion in the City's MS4 Program Plan.

## Section 2 Background

Municipal operations such as vehicle/equipment storage and maintenance, grounds maintenance, and parking lot maintenance can be a source of stormwater pollution if good housekeeping practices are not implemented during active municipal operations. The Pollution Prevention/Good Housekeeping components of the MS4 Permit require municipalities to re-evaluate municipal operations and storm infrastructure management to develop written procedures that minimize or prevent pollutant discharge from their daily operations. The daily good housekeeping procedures assists the City of Winchester in meeting the MS4 Permit requirements and encourages City employees to use best management practices (BMPs) in their daily municipal operations.

Per Sec. II(B)(6)(a) of the MS4 Permit, the written procedures are designed to minimize or prevent pollutant discharge from (i) daily operations such as road, street, parking lot maintenance; (ii) equipment maintenance; and (iii) application, storage, transport, and disposal of pesticides, herbicides, and fertilizers. These written procedures, at a minimum, are designed to:

1. Prevent illicit discharges;
2. Ensure the proper disposal of waste materials, including landscape wastes;
3. Prevent the discharge of municipal vehicle wash water into the MS4 without authorization under a separate VPDES permit;
4. Prevent the discharge of wastewater into the MS4 without authorization under a separate VPDES permit;
5. Require implementation of best management practices when discharging water pumped from utility construction and maintenance activities;
6. Minimize the pollutants in stormwater runoff from bulk storage areas (e.g. - salt storage, topsoil stockpiles) through the use of best management practices;
7. Prevent pollutant discharge into the MS4 from leaking municipal automobiles and equipment;
8. Ensure that the application of materials, including fertilizers and pesticides, is conducted in accordance with the manufacturer's recommendations.

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To address the MS4 Permit requirements, six general operations within the City were identified and good housekeeping procedures were written for activities under each operation. These operations include:

1. Municipal Facilities/Operations
2. Parking Lot Maintenance
3. Vehicle/Equipment Maintenance
4. Grounds Maintenance
5. Municipal Operations
6. Utility Maintenance

The six City operations and associated procedures are described in Section 3 through Section 8. Unless otherwise stated, the City's Engineering Division, led by the City Engineer, is responsible for ensuring good housekeeping practices are implemented for all municipal facilities and operations. At the beginning of each section pertinent City departments responsible for implementing the good housekeeping procedures are identified.

Each standard operating procedure by itself is not intended to meet every requirement per Sec. II(B)(6)(a)(1-8); but the document as a whole meets all requirements listed.

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### **Section 3 Standard Operating Procedures - Municipal Facilities**

Municipal facilities have the potential to produce pollutants from their day to day operations. It is imperative to implement good housekeeping procedures on all municipal facilities.

Included in this section are general good housekeeping practices and general spill/leak cleanup procedures that are to be implemented on all municipal facilities by each facility supervisor. Facility inspections are to be completed and records maintained as specified in the following procedures for inclusion in the facility's Stormwater Pollution Prevention Plan (SWPPP) binder.

The City's Engineering Division will work in close coordination with each facility supervisor to ensure good housekeeping procedures are being applied and to ensure the City of Winchester remains compliant with the MS4 Permit requirements.

Purpose: To protect stormwater from pollutants by implementing general good housekeeping practices.

Practices:

- All operations and activities at the City yard facility are to be in accordance with the Stormwater Pollution Prevention Plan (SWPPP) developed under the VPDES General Permit for Discharges of Stormwater from Industrial Activities registration number VAR050822.
- Do not dispose of leaves, grass clippings, tree trimmings, trash, oil, fuel, sediment, or any other pollutant into a storm drain or water body.
- Keep open, exposed areas clean and protected from precipitation.
- Keep equipment, stockpiles, chemicals, paints, etc. covered.
- Post signs and labels in problem areas and areas containing hazardous materials.
- Consider additional control measures in conjunction with coverings; including curbing, grading, or elevating materials to divert stormwater run-on and to contain stormwater run-off.
- Identify and label any storm drain inlets at or near the facility to notify employees and contractors not to dispose of any materials or wastes.
- Do not wash down or hose down any outdoor work areas or trash/waste container storage areas except where wash water will only enter the sanitary sewer following treatment.
- Recycle wastes, used oil, solvents, grease rags, wash water, and other spent liquids. Store materials to be recycled under cover with secondary containment.
- Install secondary containment devices where appropriate. Secondary controls include curbing, drip pans, basins, sumps, oil/water separators, catch basin inserts, oil pads/skimers, and impervious work areas.
- Use oil/water separators, or other commercially-available devices to minimize oil and grease discharge to stormwater runoff.
- Stabilize or cover exposed denuded areas to minimize erosion and sedimentation during rain events. This can be done by applying mulch or permanent vegetation that will hold the soils in place.
- Install erosion and sediment controls in accordance with the *Virginia Erosion and Sediment Control Handbook (VESCH)* as needed during construction and utility maintenance activities.
- Do not use chemicals when cleaning outside of buildings. Filter building wash water before it enters the storm drain.
- If possible, dispose of building wash water at approved location connected to sanitary sewer.

Inspections/Maintenance/ Spill Response /Reporting:

- Schedule routine inspections focusing on areas that have a greater potential to spill, leak, discharge into stormwater runoff.
- Monitor floor drains and storm inlets and/or catch basins, and inspect, remove/replace as appropriate.
- Inspect oil/water separators and floor drain systems periodically to determine maintenance needs.
- Inspect equipment and storage areas at regularly scheduled days/times for leaks and spills. If leaks or spills occur, clean up in accordance with SOP 3.2.
- Keep up-to-date records of site inspections including; by whom, when, and where inspections were done, what was found, and any actions that were taken as a result of the inspections.

Training:

- The City shall provide daily good housekeeping training for City owned/operated facilities for all applicable City employees in accordance with the City of Winchester Stormwater Training Plan.

Purpose: To protect stormwater from spilled pollutants by implementing proper spill cleanup procedures and preventative measures.

Practices:

- Do not use water to clean up spills/leaks.
- Do not wash spills/leaks into storm drain, ditch, creek, stream, pond, wetland or any other water body.
- Do not leave spill/leak without cleaning it up.
- Stop the source of the spill/leak immediately, if safe to do so.
- Contain any spilled/leaked liquids, if safe to do so.
- Clean up spill/leak in accordance with spill kit directions.
- Inspect City vehicles/equipment before leaving City property yard.
- Sweep up granules and dispose of properly.
- Install control measures on nearby storm drains and water bodies if spill could potentially reach the stormwater systems.
- Position mats to contain leaks from vehicles and equipment until they can be repaired.
- Use secondary containment under or around petroleum and chemical storage containers.
- Notify supervisor of any spills greater than five (5) gallons or any spill that reaches the storm drain. If a supervisor is unavailable, call the stormwater hotline (540)-542-1346 or the Police Department's non-emergency line (540)-662-4131. Immediately call 911 if a spill presents a threat to health or safety, or is considered an emergency.

Inspections/Maintenance/ Spill Response /Reporting:

- Develop and maintain a site specific spill prevention/spill response plan.
- Maintain a spill kit in areas where petroleum or hazardous materials are stored.
- Maintain spill kits on all City owned equipment/vehicles that are used for municipal operations.
- Notify supervisor of any spills greater than five (5) gallons or any spill that reaches the storm drain. If a supervisor is unavailable, call the stormwater hotline (540)-542-1346 or the Police Department's non-emergency line (540)-662-4131. Immediately call 911 if a spill presents a threat to health or safety, or is considered an emergency.

Training:

- Train applicable employees in site specific spill response procedures and equipment.
- The City shall provide daily good housekeeping training for City owned/operated facilities for all applicable City employees in accordance with the City of Winchester Stormwater Training Plan.



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## **Section 4 Standard Operating Procedures – Road, Street, and Parking Lot Maintenance**

Road, street, and parking lot maintenance activities have the potential to produce pollutants that may discharge into stormwater runoff if good housekeeping procedures are not implemented in and around municipal parking lots. Potential sources of these pollutants may include parked cars, dumpsters, trash cans, and material stockpiles.

Included in this section are good housekeeping practices for municipal road, street, and parking lot maintenance operations. The procedures are to be implemented on all City owned/operated roads, streets, and parking lots and all construction activities associated with these facilities.

The City's Department of Parks and Recreation (DPR) is responsible for ensuring that all applicable DPR employees comply with the following procedures for parking lots associated with City parks and recreation facilities. Likewise, the City's Department of Public Works (DPW) is responsible for ensuring that the Streets Division staff comply with these procedures for maintenance activities associated with roads and streets. If applicable, all inspections for municipally owned parks and recreation parking lots are to be completed and records maintained for inclusion in the facility's SWPPP binder.

The City's Engineering Division will work in close coordination with the DPR and DPW to ensure good housekeeping procedures are being applied to all municipally owned/operated roads, streets, and parking lots and during construction/maintenance operations to ensure that the City of Winchester remains compliant with the MS4 Permit requirements.

Purpose: To protect stormwater from trash and debris by properly cleaning and maintaining roads, streets, and parking lots through general practices.

Practice:

- Sweep all City maintained roads and streets in accordance with the City's established street sweeping schedule.
- Dispose of street sweepings properly and never store street sweepings in areas where storm water could transport fines to the storm drain system or a waterbody.
- Locate trash cans and dumpsters in areas that are readily accessible to users.
- Do not hose down parking lots or sidewalks within parking lots.
- Do not sweep trash, sediment, or any other pollutants to or down a storm drain or water body.
- Do not place trash cans or dumpsters near a storm drain or water body.
- Do not place hazardous waste in a dumpster or trash can.
- Do not wash out dumpsters. Return to owner for cleaning at owner's facility. If municipally owned containers must be washed, do so in an approved location where wastewater is either recycled or treated before discharging to the sanitary sewer with approval.
- Locate trash cans or dumpsters on a flat concrete surface that does not drain towards a storm drain or water body.
- Ensure all trash cans and dumpsters within parking lots remain covered and have no leaks.
- Request/use dumpsters with properly plugged drain holes whenever possible.
- Pick up trash and debris and dispose of in covered trash can or dumpster.
- Empty trash cans and dumpsters scheduled days/times. Do not overfill trash cans or dumpsters.
- Provide properly-labeled recycling bins in an area readily accessible to users to reduce the amount of garbage disposed.

Inspections/Maintenance/ Spill Response /Reporting:

- Inspect parking lots for trash and debris at regularly scheduled days/times.
- Inspect trash cans and dumpsters at regularly scheduled days/times for leaks, corrosion, broken/missing lids or leaking drain valves.
- Maintain street sweeping equipment for maximum effectiveness.
- Immediately repair or replace any damaged trash cans or dumpsters.
- Regularly inspect parking lots for leaks and spills. If leaks or spills occur, clean up in accordance with SOP 3.2.
- Keep up-to-date records of site inspections including; by whom, when, and where inspections were done, what was found, and any actions that were taken as a result of the inspections. Document all relevant inspection activities on the proper forms provided in the SWPPP.

Training:

- The City shall provide daily good housekeeping training for City owned/operated facilities for all applicable City employees in accordance with the City of Winchester Stormwater Training Plan.

Purpose: To protect stormwater from salt/deicers and sand by properly storing and applying the materials.

Practice:

- Do not store salt, sand, deicer, or snow near storm drain or water body.
- Do not dispose of salt, sand, deicer, or snow in a storm drain or water body.
- Do not use nitrogen or phosphorus as deicing agents.
- Apply appropriate amount of salt, sand, or deicer as needed to be effective.
- When loading salt, sand, or deicer, minimize salt spillage by not exceeding the capacity of equipment (i.e. front end loader, truck bed).
- When unloading salt, sand and deicer materials move excess materials that may have fallen outside of desired storage area to the desired storage area.
- Operate equipment at low speed for effective spreading.
- Control spread patterns to concentrate material where most effective.
- Consider use of deicing alternatives such as calcium magnesium acetate, potassium acetate, sand, etc. in sensitive areas.
- If using sand, use coarse, clean (washed) sand, which is free of fine particles and dust and easier to clean in the spring.
- Locate salt, sand, or deicer stockpiles on flat, covered, impervious sites that are protected from runoff and divert run-on around stockpile. Store salt, sand, or deicer in accordance with SOP 5.1.
- Provide diversion where runoff leaves salt storage area to direct runoff to holding tank or stormwater treatment device.
- Where possible, remove snow manually without use of salt/deicer.

Inspections/Maintenance/ Spill Response /Reporting:

- Regularly inspect salt/deicer storage area to ensure the area remains dry and the materials remain within the designated storage area.
- During the winter months, regularly inspect spreader equipment and calibrate to manufacturer's specifications to maximize the effectiveness of the equipment.
- Maintain accurate logs of amount of salt/deicing material applied to each parking lot.
- Keep up-to-date records of inspections including; by whom, when, and where inspections were done, what was found, and any actions that were taken as a result of the inspections. Document all relevant inspection activities on the proper forms provided in the SWPPP.

Training:

- The City shall provide daily good housekeeping training for City owned/operated facilities for all applicable City employees in accordance with the City of Winchester Stormwater Training Plan.

Purpose: To protect stormwater from trash, debris, sediments, oil and grease, solvents, detergents, fertilizers, and other pollutants by routinely inspecting, cleaning, and maintaining storm drain systems.

Practice:

- Do not allow defective storm pipes or structures to go unrepaired.
- Do not discharge contaminated stormwater, storm drain flush water, or surface debris into storm drain or water body.
- Regularly clean storm drain systems, preferably in late winter and early spring. Give priority to areas with relatively flat grades as they rarely achieve high enough flows to flush out stormwater.
- When cleaning storm drains by flushing, place hose into the storm drain system at the catch basin and discharge the hose upstream.
- Use sandbags in the storm drain systems, as needed to divert and minimize wash water discharging into the system.
- If flushing out pipes, use vacuum truck to vacuum up any flush water and debris downstream from flush inlet.
- Discharge flush water and debris properly. Debris should be collected and taken to a permitted disposal site and flush water should be discharged to the sanitary sewer with approval.
- Regularly clean storm drain structures by removing trash, sediment, leaves, grass clippings, etc. from the inlet throats, grate tops, and structure sumps. Properly dispose of debris. Do not allow debris to accumulate.
- Use appropriate erosion and sediment control practices when performing repairs. Refer to SOP 4.4 for erosion and sediment control practices.

Inspections/Maintenance/ Spill Response /Reporting:

- Inspect catch basins for structural integrity, cracks, and leaks or other condition issues. Repair any structures found to be leaking or damaged as soon as possible.
- Create a checklist for catch basins to help classify which catch basins require maintenance and generally how often. Prioritize catch basins that need repair.
- Report any suspected illicit connections or dumping to supervisor.
- Keep up-to-date records of inspections including; by whom, when, and where inspections were done, what was found, and any actions that were taken as a result of the inspections.

Training:

- Train applicable employees on proper storm drain system maintenance and cleaning practices.
- The City shall provide daily good housekeeping training for City owned/operated facilities for all applicable City employees in accordance with the City of Winchester Stormwater Training Plan. Document all relevant inspection activities on the proper forms provided in the SWPPP.

Standard Operating Procedure for: <b>ROADS, STREETS, &amp; PARKING LOT MAINTENANCE - EROSION &amp; SEDIMENT CONTROL</b>	<b>SOP 4.4</b>
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Purpose: To protect stormwater from pollutants during construction or maintenance operations by implementing proper erosion and sediment control practices.

Practice:

- Do not stockpile materials near storm drains or water bodies.
- Do not remove erosion control measures before construction or maintenance operations are complete and stabilized.
- Do not dispose of sediment or other captured pollutants in a storm drain or a water body.
- Prior to moving control measures, inspect site and ensure all accumulated debris or other pollutants are cleaned up and removed.
- Minimize the land disturbance and stabilize the disturbed area once construction or maintenance is complete.
- Divert clean water around construction or maintenance site.
- Install erosion control devices in accordance with the VESCH.
  - Install inlet protection on all storm drain inlets near the construction or maintenance operations, per Chapter 3.07 of the VESCH; or approved equivalent.
  - Contain material stockpiles (salt, topsoil, gravel) to prevent pollutant runoff. Stockpiles should be temporary and removed once construction or maintenance is complete and stabilized.
  - If needed, install sediment traps and basins per Chapters 3.13 and 3.14 of the VESCH to protect downstream channels and water bodies from sediment runoff.
  - Cover bare soil with mulch or other approved cover to prevent sediment runoff.
  - Use an appropriately sized sediment dewatering device when dewatering construction or maintenance area. Dispose of captured sediment at a properly permitted location prior to removing storm drain protection.
- Regularly inspect and maintain erosion and sediment control devices.

Inspections/Maintenance/ Spill Response /Reporting:

- Inspect, maintain, and repair control measures in accordance with the VESCH and the Virginia Erosion and Sediment Control Regulations and the Virginia Erosion and Sediment Control Law.
- Keep up-to-date records of inspections including; by whom, when, and where inspections were done, what was found, and any actions that were taken as a result of the inspections. Document all relevant inspection activities on the proper forms provided in the SWPPP.

Training:

- The City shall provide daily good housekeeping training for City owned/operated facilities for all applicable City employees in accordance with the City of Winchester Stormwater Training Plan.

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## **Section 5 Standard Operating Procedures – Vehicle / Equipment Maintenance**

Vehicle and equipment maintenance operations include fueling, washing, repairing, maintaining, and storage for large and small vehicles (fire trucks, emergency vehicles, and utility vehicles) and large and small equipment (lawn mowers, weed-eaters, chemical spreaders). Both operations have the potential to produce pollutant discharge if good housekeeping procedures are not implemented.

Included in this section are good housekeeping practices for vehicle and equipment maintenance operations. The procedures are to be implemented on all City owned/operated facilities where vehicles and equipment are stored and maintained.

The DPR is responsible for ensuring all applicable DPR employees comply with the following procedures. Inspections are to be completed and records maintained as specified in the following procedures for inclusion in the facility's SWPPP binder. If applicable, all inspections for municipally owned parks and recreation parking lots are to be completed and records maintained for inclusion in the facility's SWPPP binder.

The City's Engineering Division will work in close coordination with the DPR to ensure good housekeeping procedures are being implemented where vehicles and equipment are being stored and maintained to ensure that the City remains compliant with the MS4 Permit requirements.

Purpose: To protect stormwater from solvents, antifreeze, battery acid, motor oil, fuel, grease, brake fluid, metals, and sediment by properly storing and maintaining the vehicles and equipment.

Practice:

- Do not park vehicles or place equipment over, on, or near a storm drain or water body.
- Do not store vehicles or equipment near storm drains or water bodies.
- Do not dispose of fluids in storm drains or water bodies.
- Whenever possible, store vehicles and equipment inside to minimize the potential for pollutant discharge in stormwater runoff. Where indoor storage is not possible, store on paved areas and under a covered facility.
- If storing vehicles and equipment inside, ensure floor drains have been properly connected and do not outfall into storm drain system. If the drain does outfall to a storm drain system, floor drain should be sealed.
- Store drums, tanks, and containers in low-traffic areas and on pallets.
- Store cracked batteries in leak-proof secondary containers.
- Store drip pans and draining boards in designated and marked holding tubs for reuse.
- Store limited amounts of solvents, antifreeze, motor oil, fuel, grease, etc. to prevent surplus or expiration of fluids. Store in a dry controlled area.
- Store salt, sand, or deicer in limited amounts under cover. If stockpiled outdoors, cover with tarp to minimize stormwater runoff and install fabric barrier around to capture polluted runoff.
- Vehicle maintenance activities must be performed inside the fleet maintenance garages.
- Use drip pans and other containment devices to prevent spills when performing maintenance.
- Move leaking vehicles and equipment indoors or under cover as soon as possible and use a drip pan to contain any leaks as needed. If possible, drain the leaking fluid and tag the vehicle/equipment to alert others of the leak.
- Clean equipment prior to placing in storage. Equipment shall be washed in a controlled location in accordance with SOP 5.2.
- Clean trucks, equipment and tools in designated equipment wash facilities where wash water will not drain to a storm drain, ditch, creek, stream, pond, wetland or any other water body.
- Use non-hazardous cleaners when possible.
- Use steam cleaning, pressure washing, or aqueous washers instead of solvents.
- Drain all liquid filters before disposal or recycling and dispose of properly.
- Pour drip pan fluids in appropriate waste/recycle containers as the first step in clean up after repair work is completed.
- Dispose of or recycle all fluids properly.

Inspections/Maintenance/ Spill Response /Reporting:

- Inspect parking areas for stains, leaks, and spills at regularly scheduled days/times.
- Inspect equipment, drums, tanks, and containers for leaks, condition, proper storage and proper labeling.
- Maintain vehicles and equipment on a regular basis to prevent leaks.
- Sweep maintenance areas at regularly scheduled days/times to remove dirt/debris.
- Pickup and dispose of waste materials and scrap equipment at regularly scheduled days/times.
- If leaks or spills occur, clean up in accordance with SOP 3.2.

- Keep up-to-date records of site inspections including; by whom, when, and where inspections were done, what was found, and any actions that were taken as a result of the inspections.

Training:

- The City shall provide daily good housekeeping training for City owned/operated facilities for all applicable City employees in accordance with the City of Winchester Stormwater Training Plan.



Purpose: To protect stormwater from detergents, oils, grease, and heavy metals by properly washing vehicles and equipment.

Practice:

- All vehicles must be washed in the City Yards wash bay.
- Clean trucks, equipment and tools in designated equipment wash facilities where wash water will not drain to a storm drain, ditch, creek, stream, pond, wetland or any other water body.
- Do not release vehicle/equipment wash water into a storm drain or water body without prior authorization under a separate VPDES permit.
- If no wash facility is available, clean equipment over a layer of absorbent material spread on a paved surface and/or heavy plastic sheeting and install curbs, berms, or dikes around outdoor wash area to control and contain wastewater. Use wet/dry vacuum or vacuum truck to collect wash water and discharge to the sanitary sewer.
- Use drain guards (filter inserts) or approved equivalent on nearby storm drain inlets to catch sediments and other pollutants that might enter the storm drains as a result of vehicle washing.
- Avoid detergents whenever possible. If detergents are necessary, a phosphate-free, non-toxic, biodegradable soap is recommended.
- Minimize water use when washing and rinsing.

Inspections/Maintenance/ Spill Response /Reporting:

- Inspect and maintain washing equipment such as hoses, wands, and nozzles at regularly scheduled days/times to ensure said devices are delivering proper rate of water and shutoff automatically when not in use.
- Where wash racks are used, inspect for leaks, overspray, or other signs of ineffective containment. Immediately correct any observed defects. Clean periodically to remove particulate matter and other pollutants.
- Inspect plumbing, recycling, and pretreatment systems at regularly scheduled days/times to ensure they are functioning properly.
- Keep up-to-date records of site inspections including; by whom, when, and where inspections were done, what was found, and any actions that were taken as a result of the inspections.

Training:

- The City shall provide daily good housekeeping training for City owned/operated facilities for all applicable City employees in accordance with the City of Winchester Stormwater Training Plan.

Purpose: To protect stormwater from gasoline and diesel fuel by properly maintaining fueling areas and by properly fueling vehicles and equipment.

Practice:

- Do not fuel vehicle or equipment near storm drain or water body.
- Do not hose down or bury fuel spill.
- Do not “top off” fuel tanks. This will minimize the possibility of spills.
- Use a permitted off-site facility such as a fuel/gas station to refuel vehicles and equipment, whenever possible.
- If refueling onsite, use a designated fueling area. Designated fueling area should contain a spill kit, spill response practices, and a covered garbage can for proper cleanup and disposal of spilled fuel.
- Protect fuel storage tanks whenever possible to prevent polluting stormwater runoff.
- Cover nearby storm drains during loading/transfer of fuel storage tanks.
- Use overflow protection devices on tanks and enclose fuel tanks with secondary containment.
- When fueling small equipment from portable containers, fuel in a designated area away from storm drains and water bodies. Use a funnel to minimize spills.
- Fuel carefully to minimize drips to the ground.
- Use absorbent material under small equipment during fueling to collect any drips, overflow, or leaks.
- For new or remodeled facilities, the fuel-dispensing area should be covered and paved with an impervious surface. The surface should be sloped to prevent ponding and contain a grade break that allows for polluted runoff to drain inward to a contained area and the remaining runoff to be diverted away from the fueling, storage, and disposal area.

Inspections/Maintenance/ Spill Response /Reporting:

- Inspect fueling equipment at regularly scheduled days/times for corrosion and structural failure, cracks in foundations, and physical damage to container systems.
- Maintain clean fuel dispensing areas using dry cleanup methods.
- Maintain fuel storage tanks in accordance with local, state, and federal laws.
- Regular maintenance is required if oil/water separators are used.
- Inspect fuel storage area and tanks at regularly scheduled days/times for leaks, overfills due to operator error and spills during pumping from truck to storage facility or vice versa. If leaks or spills occur, clean up in accordance with SOP 3.2.
- Keep up-to-date records of site inspections including; by whom, when, and where inspections were done, what was found, and any actions that were taken as a result of the inspections. Document all relevant inspection activities on the proper forms provided in the SWPPP.

Training:

- Train applicable employees and subcontractors on proper fueling methods and spill cleanup materials.
- The City shall provide daily good housekeeping training for City owned/operated facilities for all applicable City employees in accordance with the City of Winchester Stormwater Training Plan.

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## Section 6 Standard Operating Procedures - Grounds Maintenance

Grounds maintenance activities such as mowing, tree trimming, irrigating, fertilizing, spraying pesticides, etc. have the potential to produce pollutant discharge if good housekeeping procedures are not implemented during grounds maintenance operations.

Included in this section are good housekeeping practices for grounds maintenance operations. The procedures are to be implemented on all City owned/operated facilities where vegetated areas are maintained and fertilizers, pesticides, and herbicides are applied, handled, and stored.

The DPR is responsible for ensuring all applicable DPR employees comply with the following procedures. If applicable, all inspections for municipally owned parks and recreation facilities are to be completed and records maintained for inclusion in the facility's SWPPP binder.

The City's Engineering Division will work in close coordination with the DPR to ensure good housekeeping procedures are being implemented during grounds maintenance operations to ensure that the City remains compliant with the MS4 Permit requirements.

**Purpose:** To protect stormwater from untreated chemicals by properly storing and disposing of pesticides, herbicides, and fertilizers.

**Practice:**

- Do not store pesticides, herbicides, and fertilizers near storm drains or water bodies.
- Do not dispose of pesticides, herbicides, and fertilizers near or in storm drains or water bodies.
- Store pesticides, herbicides, and fertilizers in accordance with manufacturer's specifications.
- Where possible, store pesticides, herbicides, and fertilizers in an enclosed, controlled area. (i.e. locked storage shed or cabinet)
- Use proper containers for storing chemicals and clearly label.
- Use and clearly label secondary containers.
- Store Material Safety Data Sheets (MSDS) near chemical storage areas.
- Order only the amount needed to prevent surplus or expired chemicals.
- Order chemicals just prior to usage to reduce storage time.
- Use entire order of chemicals to minimize disposal.
- If disposal is necessary dispose of fertilizers and pesticides in accordance with manufacturer's specifications and applicable regulations.
- Follow all applicable federal and state regulations for storing pesticides, herbicides, and fertilizers.
- Maintain dog park signs, enforce dog park rules as stated on signage and clean up after dogs as appropriate.
- Maintain "Do Not Feed Geese" signs and clean up after geese as appropriate.

**Inspections/Maintenance/ Spill Response /Reporting:**

- Annually check expiration dates and dispose of expired products in accordance with the manufacturer's specifications.
- Keep an up-to-date inventory of all pesticides, herbicides and fertilizers stored. The list should include the name of the product, the manufacturer, the number of bags/containers and expiration date.
- Compile a binder of all Material Safety Data Sheets (MSDS) for pesticide, herbicides and fertilizers and have a general location to store it.
- Keep an up-to-date list of all Certified Pesticide Applicators.
- Keep an up-to-date list of pesticides, herbicides and fertilizers being applied. The list should include the name of the product, employee who applied the product, date of application, amount applied and location.
- Inspect storage areas at regularly scheduled days/times for leaks and spills. If leaks or spills occur, clean up in accordance with SOP 3.2.
- Keep up-to-date records of site inspections including; by whom, when, and where inspections were done, what was found, and any actions that were taken as a result of the inspections.

**Training:**

- All applicable employees who handle or apply pesticides and herbicides shall be certified in accordance with the Virginia Pesticide Control Act through Virginia Department of Agriculture and Consumer Services (VDACS).
- The City shall provide daily good housekeeping training for City owned/operated facilities for all applicable City employees in accordance with the City of Winchester Stormwater Training Plan.

Purpose: To protect stormwater from untreated chemicals by properly handling and applying pesticides, herbicides, and fertilizers.

Practice:

- Do not apply pesticides, herbicides, and fertilizers before a heavy rainfall.
- Do not dispose of pesticides, herbicides, and fertilizers in storm drains or water bodies.
- City employees who use or supervise the use of any pesticide on any area in the performance of their official duties must be certified as either commercial applicators not for hire or a registered technician.
- City employees who use or supervise the use of any fertilizer on any area in the performance of their official duties must be a certified fertilizer applicator.
- Use proper Personal Protection Equipment (PPE) when handling and applying pesticides, herbicides, and fertilizers.
- All employees handling, mixing, and applying pesticides, herbicides, and fertilizers should be knowledgeable of the corresponding MSDS for pesticides, herbicides, and fertilizers.
- Mix only enough chemical for immediate use.
- Follow manufacturer's recommendations for handling, mixing, and applying pesticides, herbicides, and fertilizers.
- Follow all federal and state regulations when handling, mixing, and applying pesticides, herbicides, and fertilizers.
- Mix pesticides, herbicides, and fertilizers in designated areas and away from storm drains or water bodies.
- Employees applying pesticides, herbicides, and fertilizers should read the MSDS for each product they use.
- Calibrate application equipment to ensure proper amount of product is applied.
- Use caution when broadcasting product near a waterway or storm drain structure.
- If fertilizer is broadcast or spilled on a sidewalk, street or driveway, sweep up the excess and dispose of in accordance with manufacturer's specifications.
- Promptly cleanup any spills or leakage. Use dry absorbent for liquids and sweep up solid product. Dispose of waste in accordance with manufacturer's specifications. Do not rinse with water.
- Use fertilizers with no phosphorous content.
- Pesticide application equipment should have an emergency shut-off switch.
- Use the least toxic product or method available to do the job.
- Use biodegradable products when available.
- Spot treat problem areas with pesticides rather than treating larger areas.
- Avoid broadcast spraying of pesticides or herbicides.
- Use the granular form of fertilizers, herbicides, and pesticides to minimize application losses. If using liquids, be aware of wind direction to avoid wind drift of chemicals.
- Wash equipment in accordance with SOP 5.2.
- Apply products when ground is thawed; if applicable, fertilizer in accordance with any pertinent Nutrient Management Plan (NMP), apply pesticides and herbicides only as needed.

Inspections/Maintenance/ Spill Response /Reporting:

- Annually check expiration dates and dispose of expired products in accordance with the manufacturer's specifications.

- Keep an up-to-date inventory of all pesticides, herbicides, and fertilizers stored. The list should include the name of the product, the manufacturer, the number of bags/containers and expiration date.
- Compile a binder of all MSDS for pesticides, herbicides, and fertilizers and have a general location to store it.
- Keep an up-to-date list of all Certified Pesticide Applicators.
- Keep an up-to-date list of pesticides, herbicides, and fertilizers being applied. The list should include the name of the product, employee who applied the product, date of application, amount applied and location.
- Regularly inspect storage areas for leaks and spills. If leaks or spills occur, clean up in accordance with SOP 3.2.
- Keep up-to-date records of site inspections including; by whom, when, and where inspections were done, what was found, and any actions that were taken as a result of the inspections.

Training:

- All applicable employees who handle or apply pesticides and herbicides shall be certified in accordance with the Virginia Pesticide Control Act through Virginia Department of Agriculture and Consumer Services (VDACS).
- The City shall provide daily good housekeeping training for City owned/operated facilities for all applicable City employees in accordance with the City of Winchester Stormwater Training Plan.

Purpose: To protect stormwater from organic matter, sediments, nutrients, and other pollutants by using proper mowing and irrigation techniques and by properly disposing of landscape waste.

Practice:

- Do not dispose of leaves, clippings, or compost in storm drain or water body.
- Do not pile leaves, clippings, and compost piles near a storm drain or water body.
- Do not dump gas from lawn mowing equipment, waste, or contaminated water in storm drain or water body.
- Do not refuel or change mower oil near storm drains.
- Mow only as low as needed for the area's intended use. Where possible, mow once or twice a year to allow for meadow growth.
- Use a bag to catch grass clippings and appropriately dispose of clippings.
- Water at appropriate times (no rain in forecast and cooler time of day) and do not overwater. Overwatering can result in excess runoff.
- If used for composting, use appropriate compost bin away from storm sewer or water body.
- If temporary stockpile is necessary, cover leaves, clippings, and compost piles with tarp or enclose with a barrier so that runoff does not enter storm drain system or water body.
- Do not pile tree trimmings. Dispose of properly at a yard waste facility, chip material and use as mulch, or burn in controlled area as regulated under City Ordinances.

Inspections/Maintenance/ Spill Response /Reporting:

- Store and maintain lawn care equipment in controlled location per SOP 5.1.
- Wash lawn care equipment in controlled location per SOP 5.2.
- Fill gas tanks in a controlled location per SOP 5.3.
- Regularly inspect lawn care equipment and storage areas for leaks and spills. If leaks or spills occur, clean up in accordance with SOP 3.2.
- Keep up-to-date records of site inspections including; by whom, when, and where inspections were done, what was found, and any actions that were taken as a result of the inspections.

Training:

- The City shall provide daily good housekeeping training for City owned/operated facilities for all applicable City employees in accordance with the City of Winchester Stormwater Training Plan.

Purpose:

To protect stormwater from bacteria, organic matter, disinfectants, and suspended solids by properly placing and maintaining portable toilets.

Practices:

- Do not place toilets on top of storm drain inlets.
- Do not dispose of waste or pollutants in storm drains or water bodies.
- Portable toilets should be placed away from all storm drains and streets.
- Portable toilets should not be located adjacent to any stream or lake.
- Portable toilets shall be placed on a level ground surface that provides unobstructed access to users and servicing pump trucks.
- Portable toilets should, wherever possible, be located upon natural ground and not on or within 5 feet of a paved surface such as asphalt, concrete, or similar.
- If portable toilets must be placed on a paved surface exposed to rainwater or stormwater runoff, extra care must be taken during servicing to ensure any waste water spilled onto the paved surface is rinsed and adequately collected so as not to leave any residue. A wet shop vacuum or similar would provide for adequate collection.
- To prevent spills, portable toilets should not be moved more often than is absolutely necessary.
- Portable toilets should be anchored down to prevent from tipping over.
- Owner identification and contact information must be effectively displayed in a prominent location on the exterior of each unit for reporting purposes.
- Collected portable toilet waste must be disposed of at a properly permitted wastewater disposal facility by a capable servicing company. Users of portable toilets should make all reasonable efforts to ensure that the waste hauler is disposing of waste at a permitted location.
- Damaged toilets must be repaired and/or replaced immediately.

Inspections/Maintenance/ Spill Response /Reporting:

- Clean and remove waste from portable toilets each week. Additional cleaning may be necessary depending on the volume of use.
- Portable toilet rinsing (excluding the inside of portable toilet waste tank) may be completed on site when the following conditions are met:
  - Rinse water is controlled to prevent it from entering into a storm drain;
  - No more than one (1) gallon of rinse water is used per portable toilet (i.e. low volume high-pressure cleaners, or bucket and rag. No common household hoses.);
  - Rinsing is completed away from a street or storm drain;
  - Where the portable toilet must be located on a paved surface, any rinse water that comes in contact with the paved surface must be adequately collected;
  - Where the portable toilet is located on a non-paved surface, rinsing should be completed at least 5 feet away from a paved surface and rinsing wastewater is drained to the ground at a rate that allows it to immediately soak into the ground;
  - Rinse water generated during the cleaning of portable toilet waste tanks must not be discharged to the ground or to a storm drain and must be retained within the tank;
  - Portable toilet wastewater (human waste/sewage) must never be disposed of on-site.



- Inspect portable toilets daily to ensure proper functionality and to detect leaks or spills. In the event of a toilet unit being tipped over, immediately lift the unit back to its original position and inspect for spills, leakage, or damage to the unit. If leaks or spills occur, clean up in accordance with SOP 3.2.
- Keep up-to-date records of site inspections including; by whom, when, and where inspections were done, what was found, and any actions that were taken as a result of the inspections. Document all relevant inspection activities on the proper forms provided in the SWPPP.

Training:

- The City shall provide daily good housekeeping training for City owned/operated facilities for all applicable City employees in accordance with the City of Winchester Stormwater Training Plan.

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## Section 7 Standard Operating Procedures – Municipal Operations

Municipal operations such as paving, concrete replacement, refuse collection etc. have the potential to produce pollutant discharge if good housekeeping procedures are not implemented during municipal operations.

Included in this section are good housekeeping practices for municipal operations. The procedures are to be implemented during all City operations outside of City owned facilities.

Purpose: To protect stormwater from contaminants during municipal operations.

Practice:

- Concrete
  - Collect concrete slurry and dispose of waste and water or allow slurry to dry and sweep up direct waste
  - Require concrete trucks to wash out in a designated location where wash water will not drain to a storm drain, ditch, creek, stream, pond, wetland or any other water body.
- Paving and Pavement Repair
  - When milling, do not allow grindings to accumulate where they can wash into the storm drain, ditch, creek, stream, pond, wetland or any other water body.
  - Mix only the amount of patching material necessary to complete the repair.
  - Locate stockpiles of asphalt patching material on a paved surface. Cover stockpiles to prevent contact with rain.
  - Use less harmful products rather than diesel for asphalt patching and cleanup activities.
  - Promptly sweep up absorbent material and dispose of in accordance with established procedures.
- Street Sweeping
  - Keep street sweepers maintained and in operation.
  - Sweep as close to the curb as possible.
  - Maintain an effective speed.
  - Keep accurate logs of the lane miles swept and/or the amount of material collected.
- Leaf Collection
  - Remove leaves from gutters, ditches and around inlets.
  - Dispose of leaves at City Yards composting area.
- Refuse Collection
  - Do not pick up hazardous material
  - Empty accumulated liquids from trash collection activities at a properly permitted landfill.

Inspections/Maintenance/ Spill Response /Reporting:

- Store and maintain municipal equipment in controlled location per SOP 5.1.
- Wash municipal equipment in controlled location per SOP 5.2.
- Fill gas tanks in a controlled location per SOP 5.3.
- Regularly inspect equipment used for municipal operations for leaks and spills. If leaks or spills occur, clean up in accordance with SOP 3.2.
- Keep up-to-date records of site inspections including; by whom, when, and where inspections were done, what was found, and any actions that were taken as a result of the inspections.

Training:

- The City shall provide daily good housekeeping training for City owned/operated facilities for all applicable City employees in accordance with the City of Winchester Stormwater Training Plan.

## **Section 8 Standard Operating Procedures - Utility Maintenance**

Utility maintenance activities such as fire hydrant testing, waterline repair, and sanitary sewer repair have the potential to produce pollutant discharge if good housekeeping procedures are not implemented during the described activities.

The City's Engineering Division will work in close coordination with the Department of Public Utilities (DPU) to ensure good housekeeping procedures are being followed during utility maintenance operations to ensure that the City remains compliant with the MS4 Permit requirements.

Purpose: To protect stormwater from contaminants during water line maintenance operations.

Practice:

- Install inlet controls and filtering devices for planned and previously approved discharges into storm drain.
- Prior to discharge, inspect discharge flow path and clear/cleanup any debris or pollutants found (i.e. remove trash, leaves, sediment, and wipe up liquids, including oil spills).
- Stop unplanned discharges as quickly as possible.
- Notify DPU of unplanned discharge and discharge extent.
- Identify unplanned discharge location and repair as needed.
- Inspect unplanned discharge flow path and repair damaged areas as needed.

Inspections/Maintenance/ Spill Response /Reporting:

- Store and maintain equipment in controlled location per SOP 5.1.
- Wash municipal equipment in controlled location per SOP 5.2.
- Fill gas tanks in a controlled location per SOP 5.3.
- Regularly inspect equipment used for utility operations for leaks and spills. If leaks or spills occur, clean up in accordance with SOP 3.2.
- Keep up-to-date records of site inspections including; by whom, when, and where inspections were done, what was found, and any actions that were taken as a result of the inspections.

Training:

- The City shall provide daily good housekeeping training for City owned/operated facilities for all applicable City employees in accordance with the City of Winchester Stormwater Training Plan.

Purpose: To protect stormwater from contaminants during sewer line maintenance operations.

Practice:

- Remove tree roots and other identified obstructions in sewer lines.
- Immediate clearing of blockage or repair is required where an overflow is currently occurring or for urgent problems that may cause an imminent overflow (e.g. pump station failures, sewer line ruptures, sewer line blockages).
- Clean sewer lines on a regular basis to remove grease, grit, and other debris that may lead to sewer backups.
- Review previous sewer maintenance records to help identify “hot spots” or areas with frequent maintenance problems and locations of potential system failure.
- Identify and track sanitary sewer discharges. Identify dry weather infiltration and inflow first. Wet weather overflow connections are very difficult to locate.
- Locate wet weather overflows and leaking sanitary sewers using conventional source identification techniques such as monitoring and field screening. Techniques used to identify other illicit connection sources can also be used for sewer system evaluation surveys.
- Implement community awareness programs for monitoring sanitary sewer wet weather overflows. A citizen’s hotline for reporting observed overflow conditions should be established to supplement field screening efforts.
- When a spill, leak, and/or overflow occurs and when disinfecting a sewage contaminated area, take every effort to ensure that the sewage, disinfectant and/or sewage treated with the disinfectant is not discharged to the storm drain system or receiving waters.

Inspections/Maintenance/ Spill Response /Reporting:

- Store and maintain equipment in controlled location per SOP 5.1.
- Wash equipment in controlled location per SOP 5.2.
- Regularly inspect equipment used for utility operations for leaks and spills. If leaks or spills occur, clean up in accordance with SOP 3.2.
- During routine maintenance and inspection note the condition of sanitary sewer structures and identify areas that need repair or maintenance.
- Establish routine maintenance program. Cleaning should be conducted at an established minimum frequency and more frequently for problem areas such as restaurants that are identified
- Keep up-to-date records of site inspections including; by whom, when, and where inspections were done, what was found, and any actions that were taken as a result of the inspections.

Training:

- The City shall provide daily good housekeeping training for City owned/operated facilities for all applicable City employees in accordance with the City of Winchester Stormwater Training Plan.

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## Section 9 Resources

1. Environmental Protection Agency (EPA). (August 2014). *Pollution Prevent/Good Housekeeping for Municipal Operators National Menu of BMPs*. Retrieved from <http://water.epa.gov/polwaste/npdes/swbmp/Pollution-Prevention-Good-Housekeeping-for-Municipal-Operatators.cfm>
2. New Hampshire Department of Environmental Services (NHDES). (August 2014). *Guidelines and Standard Operating Practices: Illicit Discharge Detection and Elimination and Pollution Prevent/Good Housekeeping for Stormwater Phase II Communities in New Hampshire Manual*. Retrieved from [http://des.nh.gov/organization/divisions/water/stormwater/documents/nh\\_idde\\_sop.pdf](http://des.nh.gov/organization/divisions/water/stormwater/documents/nh_idde_sop.pdf)
3. City of Lansing, MI. (August 2014). *MS4 NPDES Application Attachment C-City of Lansing Standard Operating Procures*. Retrieved from <http://www.lansingmi.gov/media/view/7 Attachment C SOPs/3013>
4. California Stormwater Quality Association (CASQA). (August 2014). *Municipal BMP Handbook*. Retrieved from <https://www.casqa.org/resources/bmp-handbooks/municipal-bmp-handbook>
5. Gwinnett County, GA Public Utilities. (August 2014). *Water Quality Guidelines; WQ-04 Portable Toilet Management*. Retrieved from <http://www.gwinnettcounty.com/portal/gwinnett/Departments/PublicUtilities/StormwaterManagement/WaterQualityProtection/WaterQualityGuidelines>

**Appendix 7. *SWPPP for Parks Maintenance Building at Jim Barnett Park***



# Stormwater Pollution Prevention Plan

**for:**

Winchester Parks and Recreation Maintenance Building  
1001 East Cork Street  
Winchester, VA 22601  
540-662-4946

## **SWPPP Contact(s):**

City of Winchester Parks and Recreation Department  
Lynn Miller, Director  
[Lynn.Miller@winchesterva.gov](mailto:Lynn.Miller@winchesterva.gov)

## **SWPPP Preparation Date:**

06/30/2017

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## SECTION 1: FACILITY DESCRIPTION AND CONTACT INFORMATION.

### 1.1 Facility Information.

#### Facility Information

Name of Facility: Winchester Parks and Recreation Maintenance Building

Street: 1001 East Cork Street

City: Winchester State: VA ZIP Code: 22601

County or Similar Subdivision: City of Winchester

#### Latitude/Longitude

Latitude:

39.1691° N (decimal degrees)

Longitude:

-78.1540° W (decimal degrees)

Method for determining latitude/longitude (check one):

USGS topographic map (specify scale: \_\_\_\_\_)  GPS

Other (please specify): City of Winchester Pictometry

Horizontal Reference Datum (check one):

NAD 27  NAD 83  WGS 84

Estimated area of industrial activity at site exposed to stormwater: 0.72 (acres)

#### Discharge Information

Does this facility discharge stormwater into a municipal separate storm sewer system

(MS4)?  Yes  No

If yes, name of MS4 operator: City of Winchester

Name(s) of surface water(s) that receive stormwater from your facility: Abrams Creek

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Does this facility discharge industrial stormwater directly into any segment of an "impaired water" (see definition in 2015 MSGP, Appendix A)?  Yes  No

## 1.2 Contact Information/Responsible Parties.

### Facility Operator(s):

Name: [City of Winchester Parks and Recreation Department](#)  
Address: [1001 East Cork Street](#)  
City, State, Zip Code: [Winchester, VA 22601](#)  
Telephone Number: [\(540\) 662-4946](#)  
Fax number: [\(540\) 678-8791](#)

### Facility Owner(s):

Name: [City of Winchester Virginia](#)  
Address: [15 North Cameron Street](#)  
City, State, Zip Code: [Winchester, VA 22601](#)  
Telephone Number: [\(540\) 667-1815](#)

### SWPPP Contact(s):

SWPPP Contact Name (Primary): [Tommy Lambert, Parks Superintendent](#)  
Telephone number: [\(540\) 662-4946](#)  
Email address: [Thomas.Lambert@winchesterva.gov](mailto:Thomas.Lambert@winchesterva.gov)  
SWPPP Contact Name (Backup): [Lynn Miller, Parks Director](#)  
Telephone number: [\(540\) 662-4946](#)  
Email address: [Lynn.Miller@winchesterva.gov](mailto:Lynn.Miller@winchesterva.gov)

## 1.3 Stormwater Pollution Prevention Team.

Staff Names	Individual Responsibilities
<a href="#">Lynn Miller</a>	<a href="#">Parks Department Director</a>
<a href="#">Matt Little</a>	<a href="#">Parks Assistant Director</a>
<a href="#">Tommy Lambert</a>	<a href="#">Parks Superintendent</a>
<a href="#">Robert Brown</a>	<a href="#">Stormwater Engineer</a>
<a href="#">Kelly Henshaw</a>	<a href="#">City Engineer</a>
<a href="#">[Repeat as necessary]</a>	<a href="#">[Repeat as necessary]</a>

#### 1.4 *Site Description.*

The parks maintenance building area is located in the southwestern corner of Jim Barnett Park and borders Interstate 81 to the east. It is used for the storage and maintenance of a variety of grounds keeping equipment and vehicles. It also serves as a storage area for various chemicals, paints, fuels, and other potential pollutants used for park maintenance. In general, materials are stored indoors and machinery is stored outdoors with no cover. Maintenance also generally occurs indoors. There is no stormwater infrastructure in this area of the park, so all drainage is via overland sheet flow and natural swales.

This SWPPP applies only to the maintenance building and its surrounding parking areas.

#### 1.5 *General Location Map.*

The general location map for this facility can be found in Attachment A.

#### 1.6 *Site Map.*

The site map for this facility can be found in Attachment B.

### **SECTION 2: POTENTIAL POLLUTANT SOURCES.**

Section 2 will describe all areas at your facility where industrial materials or activities are exposed to stormwater or from which allowable non-stormwater discharges originate. Industrial materials or activities include, but are not limited to: material handling equipment or activities; industrial machinery; raw materials; industrial production and processes; and intermediate products, by-products, final products, and waste products. Material handling activities include, but are not limited to: the storage, loading and unloading, transportation, disposal or conveyance of any raw material, intermediate product, final product or waste product. For structures located in areas of industrial activity, you must be aware that the structures themselves are potential sources of pollutants. This could occur, for example, when metals such as aluminum or copper are leached from the structures as a result of acid rain.

For each area identified, the SWPPP must include industrial activities, potential pollutants, spills and leaks, unauthorized non-stormwater discharges, salt storage, stormwater sampling data and descriptions of control measures.

#### 2.1 *Potential Pollutants Associated with Industrial Activity.*

Industrial Activity	Associated Pollutants
Vehicle storage	Motor oil, anti-freeze, hydraulic fluid, hydrocarbons
Material storage	Fertilizer, salt, de-icer, herbicide, pesticide, paint
Fueling Facility	Hydrocarbons

## 2.2 Spills and Leaks.

### Areas of Site Where Potential Spills/Leaks Could Occur

Location	Discharge Points
Vehicle / Material Storage Area	Outfall #1
Maintenance Garage	"
Oil / Chemical Barrels	"
Parts Cleaning Station	"

### Description of Past Spills/Leaks

Date	Description	Discharge Points
Insert date of spill/leak	Insert description of spill/leak (where it occurred, what happened, types of pollutants, extent of damage)	Specify which discharge point(s) were affected
[Repeat as necessary]	[Repeat as necessary]	[Repeat as necessary]
[Repeat as necessary]	[Repeat as necessary]	[Repeat as necessary]
[Repeat as necessary]	[Repeat as necessary]	[Repeat as necessary]

## 2.3 Unauthorized Non-stormwater Discharges Documentation.

Description of this facility's unauthorized non-stormwater discharge evaluation:

- Date of evaluation: *Insert the date(s) of your evaluation.*
- Description of the evaluation criteria used: *Describe the method used to conduct the evaluation and determine which non-stormwater discharges are authorized or unauthorized.*
- List of the drainage points that were directly observed during the evaluation: *Insert drainage points observed.*
- Action(s) taken, such as a list of control measures used to eliminate unauthorized discharge(s), or documentation that a separate NPDES permit was obtained. For example, a floor drain was sealed, a sink drain was re-routed to the sanitary sewer or an NPDES permit application was submitted for an unauthorized cooling water discharge: *Describe actions taken to eliminate unauthorized non-stormwater discharges and the corresponding drainage point affected.*

## 2.4 Salt Storage.

Salt and other de-icing chemicals are stored in bags under cover

## 2.5 *Sampling Data Summary.*

No stormwater sampling has been done on the site.

## SECTION 3: STORMWATER CONTROL MEASURES.

### 3.1 *Non-numeric Technology-based Effluent Limits (BPT/BAT/BCT)*

You must comply with the following non-numeric effluent limits (except where otherwise specified in Part 8) as well as any sector-specific non-numeric effluent limits in Part 8.

#### **3.1.1 Minimize Exposure.**

Vehicle Maintenance – All vehicle maintenance takes place inside the garage buildings. Used motor oil is stored in a 275-gallon tank and used antifreeze is stored in a similar 200-gallon tank. Both of these tanks are above ground tanks surrounded by secondary containment areas. Both tanks are covered to minimize the amount of stormwater that might enter the containment areas.

#### **3.1.2 Good Housekeeping.**

Trash generated on-site is collected and in a lidded dumpster and collected weekly.

Waste oil and antifreeze tanks are visually inspected for leaks and spills regularly.

Used batteries are stored inside and collected as needed for recycling by the battery vendor.

#### **3.1.3 Maintenance.**

Vehicles stored on the Parks Maintenance site are to be given regular maintenance and inspected regularly for any fluid leaks.

Floor drains in the garages are to be kept clear and functioning at all times to prevent fluids from leaving the buildings.

Waste oil and antifreeze storage tanks are to be emptied on a monthly basis, or as needed, to prevent overfilling. Containment areas area around the tanks is to be monitored and cleaned out if fluids are present.

#### **3.1.4 Spill Prevention and Response.**

- Plainly label containers (e.g., "Used Oil," "Spent Solvents," "Fertilizers and Pesticides") that could be susceptible to spillage or leakage to encourage proper handling and facilitate rapid response if spills or leaks occur;\*



- Implement procedures for material storage and handling, including the use of secondary containment and barriers between material storage and traffic areas, or a similarly effective means designed to prevent the discharge of pollutants from these areas;
- Develop training and train all staff on procedures to quickly stop, contain and clean up leaks, spills, and other releases. As appropriate, execute such procedures as soon as possible;
- Keep spill kits on-site, located near areas where spills may occur or where a rapid response can be made; and
- Notify appropriate facility personnel when a leak, spill or other release occurs.

### Prevention

The used oil and antifreeze tanks are labeled with their contents and each is surrounded by a secondary containment area.

### Response

Dry cleanup methods are used; absorbents such as "Stay-Dri" are applied to spills. After the spill has been absorbed, the absorbent is swept up and placed in a storage drum to be recycled.

In the event that a spill occurs and sewage, industrial waste, other wastes or any noxious or deleterious substance discharges into or upon state waters in violation of Part II F; or a discharge may reasonably be expected to enter state waters in violation of Part II F, notify the Virginia DEQ of the discharge immediately upon discovery of the discharge, but in no case later than 24 hours after said discovery. A written report of the unauthorized discharge shall be submitted to the department within five days of discovery of the discharge. The written report shall contain:

1. A description of the nature and location of the discharge;
2. The cause of the discharge;
3. The date on which the discharge occurred;
4. The length of time that the discharge continued;
5. The volume of the discharge;
6. If the discharge is continuing, how long it is expected to continue;
7. If the discharge is continuing, what the expected total volume of the discharge will be; and
8. Any steps planned or taken to reduce, eliminate and prevent a recurrence of the present discharge or any future discharges not authorized by this permit.

Discharges reportable to the department under the immediate reporting requirements of other regulations are exempted from this requirement.

### Contacts:

DEQ Valley Regional Office  
Pollution Response Coordinator – Jennifer Welcher  
(540) 574-7800

Virginia Department of Emergency Management  
1-800-468-8892

### **3.1.5 Erosion and Sediment Controls.**

All areas of the site are stabilized, and no land disturbance activities are anticipated. If any construction occurs on site, erosion and sediment controls will be reviewed as part of the site plan approval process and implemented in accordance with the Virginia Erosion and Sediment Control Handbook.

### **3.1.6 Management of Runoff.**

Currently, there are no controls on site to reduce the amount of stormwater runoff beyond the maintenance of vegetated areas.

### **3.1.7 Salt Storage Piles or Piles Containing Salt.**

Salt is currently stored in the main building in individual bags.

### **3.1.8 Dust Generation and Vehicle Tracking of Industrial Materials.**

The gravel areas of the site are currently stable with low levels of dust. If dust becomes a problem, the gravel areas shall be sprayed with water or other approved non-toxic dust control material.

## **SECTION 4: SCHEDULES AND PROCEDURES.**

### **4.1 *Good Housekeeping.***

- Roll off dumpster shall be collected when full
- All liquid materials stored in drums shall be inspected for leaks whenever used or at least weekly
- Dry material stored in containers or bags shall be inspected for leaks when they are used or moved
- Flammable material shall be stored and inspected as required by OSHA, the Winchester Fire Marshall, or other applicable agencies

### **4.2 *Maintenance.***

- Any spill containment measures shall be inspected daily and emptied as needed
- Vehicles shall be inspected before each use for fluid leaks and repaired as needed

#### **4.3 Spill Prevention and Response Procedures.**

Listed under 3.1.4 above

#### **4.4 Erosion and Sediment Control.**

Listed under 3.1.5 above

#### **4.5 Employee Training.**

Employee training is covered under the City of Winchester's MS4 Program Plan

#### **4.6 Inspections and Assessments.**

##### **4.6.1 Routine Facility Inspections.**

Routine facility inspections shall be conducted at least quarterly. At least one routine facility inspection per year should occur while runoff is discharging from the site.

For routine facility inspections to be performed at your site, your SWPPP must include a description of the following:

1. **Person(s) or positions of person(s) responsible for inspection.** Park Superintendent, Stormwater Engineer, City Engineer
2. **Schedules for conducting inspections.** Routine facility inspections shall be conducted at least quarterly. At least one routine facility inspection per year should occur while runoff is discharging from the site.
3. **List areas where industrial materials or activities are exposed to stormwater.** Outdoor vehicle and equipment storage
4. **List areas identified in the SWPPP (section 1 of the SWPPP Template) and any others that are potential pollutant sources (see Part 5.2.3).** All outdoor storage areas; fueling area; areas around buildings where indoor spills may escape the building perimeter
5. **Areas where spills and leaks have occurred in the past 3 years.** No spills have been documented in the past three years

## **SECTION 5: SWPPP CERTIFICATION.**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant

penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: \_\_\_\_\_ Title: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## SECTION 6: SWPPP MODIFICATIONS.

### Instructions (see 2015 MSGP Part 5.3):

Your SWPPP is a “living” document and is required to be modified and updated, as necessary, in response to corrective actions. See Part 4 of the 2015 MSGP.

- If you need to modify the SWPPP in response to a corrective action, then the certification statement in section 7 of this SWPPP template must be re-signed.
- For any other SWPPP modification, you should keep a log with a description of the modification, the name of the person making it, and the date and signature of that person.

## SWPPP ATTACHMENTS

Attach the following documentation to the SWPPP:

### ***Attachment A – General Location Map***

*Include a copy of your general location map in Attachment A.*

### ***Attachment B – Site Map***

*Include a copy of your site map(s) in Attachment B.*





**CITY OF WINCHESTER**  
**VIRGINIA**  
 PUBLIC SERVICES DEPARTMENT  
 15 N. CAMERON STREET  
 WINCHESTER, VA 22601  
 PHONE: 540-667-1815  
 FAX: 540-662-3351

**PARKS MAINTENANCE BUILDING  
 LOCATION MAP**

SCALE: DATE:  
 1"=500' 6/30/17

SHEET 1 OF 1





**Appendix 8. *Updated Nutrient Management Plan***



# Nutrient Management Plan

## Friendship Park

Prepared For:

Tommy Lambert  
City of Winchester  
Rouss City Hall, 15 N. Cameron Street  
Winchester, VA 22601  
540-667-1815

Prepared By:

Parker Osterloh, Timmons Group  
1001 Boulders Parkway, Suite 300  
Richmond, VA 23225  
804-200-6457  
Certification Code: #920  
Total Managed Area Acreage: 1.2

The purpose of this Nutrient Management Plan is to ensure minimum movement of Nitrogen and phosphorous from the specified area of application to surface and groundwaters where they can potentially have a detrimental effect on water quality as well as ensuring plants have optimum soil nutrient availability for maximum productivity and quality. By following this soil test based plan you are helping to protect waters of the Chesapeake Bay.

If you have any questions, please contact your plan writer, local Virginia Cooperative Extension Agent, or the Department of Conservation and Recreation Nutrient Management Program.

# Nutrient Management Plan For:

## Friendship Park

### Landowner Information:

Company Name	City of Winchester
Customer Name	Tommy Lambert
Mailing Address	Rouss City Hall, 15 N. Cameron Street
City, State Zip	Winchester, VA 22601
Phone	540-667-0815
Email	Thomas.lambert@winchester.gov

### Planner Information:

Planner Name	Parker Osterloh
Mailing Address	1001 Boulders Parkway, Suite 300
City, State Zip	Richmond, VA 23225
Phone	804-200-6457
Fax	804-560-1016
Email	Parker.osterloh@timmons.com
Certification Code	#920

### Location Information:

Physical Address	623 North Pleasant Valley Road
City, State Zip	Winchester, Virginia 22601
Latitude	39° 11' 26.4" N
Longitude	78° 09' 02.6" W
VAHU6 Watershed Code	PU17 Abrams Creek
County	City of Winchester

### Acreage:

Total	52,822 square feet (1.2 acres)
-------	--------------------------------

Plan Start Date	3/15/2019
Plan End Date	3/15/2022

Planner Signature:



# Narrative

This nutrient management plan has been prepared by Timmons Group, on behalf of the City of Winchester. Friendship Park is located on North Pleasant Valley Road in Winchester, Virginia, within a residential development north of Bruce Street and south of Green Street (see [Figure 1: Vicinity Map](#)). The park has one soccer field and is relatively flat with gentle slopes on the northern and eastern sides of the soccer field. No wetlands were found to be present within the site limits during the January 31, 2019 site visit and no wetlands or streams were depicted within the site limits as shown on [Figure 2: Environmental Inventory Map](#). There were no wells, subsurface tile drains, springs, sinkholes, rock outcrops, land with slopes steeper than 15%, or qualifying soil types observed onsite and therefore, no environmentally sensitive areas were identified onsite. However, it was noted that a stream channel flows northeast through the southern portion of the park into a wetland system located east of the soccer field. Special attention should be paid to this area when applying fertilizer to avoid product being broadcast onto the surrounding slope where nutrients could runoff.

Using aerial photography and through discussions with City of Winchester staff, a 1.2-acre area (52,822 sq ft) was identified as managed turf where fertilizer is applied. Managed turf on the soccer field (Friendship Field) is comprised of a cool season grass mixture.

This plan is effective for three years (until March 15, 2022) or until significant changes to maintenance practices occur. Should the City of Winchester decide to fertilize any locations within Friendship Park outside of this managed area, this nutrient management plan should be updated with recommendations for the additional area(s). Other significant changes would include: changing turf species in the athletic field, renovating the athletic field and the existing underlying soil, creation of an additional athletic field, expansion of the area to be included under this nutrient management plan, or other changes that could alter nutrient recommendations and timing.

One management area was determined for Friendship Park. Management Area 1 (Friendship Field) is shown on [Figure 3: Nutrient Management Areas Map](#). Based on the City of Winchester, Virginia average first killing frost date of October 15th (Fall), the average last killing frost date of April 15th (Spring), and the cool season turf identified onsite, fertilizer applications on this management area should occur within the cool season application period of March 4th to November 26th. Nutrient application instructions are identified in the nutrient management worksheet of this plan.

Applications of nutrients should not occur on frozen or snow-covered ground. Any fertilizer that makes its way onto impervious surfaces should be swept or blown back into pervious turfgrass-covered areas. Do not use fertilizers as ice melt. Nutrient applications should not be completed when significant runoff producing events are anticipated.

**Every fertilizer application should be recorded in the record sheet provided.** Any questions or concerns with fertilizer products or record keeping should be brought to the plan writer's attention.

# Nutrient Management Worksheet

Property:	Friendship Park												
Prepared:	3/15/19						Species:	Cool Season					
Expires:	3/15/22												
Management Area	Application Month/Day	# of Apps	Application Interval	Fertilizer Product	% Slow Release N	NPK Value of Fertilizer Product	Total NPK lbs/1,000 square feet			Required lbs/1,000 ft <sup>2</sup> of Fertilizer Product to Meet Target Application Rate	Total Required lbs per area		
						N - P <sub>2</sub> O <sub>5</sub> - K <sub>2</sub> O	N	-	P <sub>2</sub> O <sub>5</sub>	-	K <sub>2</sub> O		
Management Area 1: Friendship Field acreage = approximately 1.2  Maximum 4.2-1.5-5	4/15 - 5/15	1		SCU (30-0-10)	50%	30 - 0 - 10	0.50	-	0.00	-	0.17	1.7	87
	6/1 - 6/15	1		custom blend SCU (10-15-10)	25%	10 - 15 - 10	0.50	-	0.75	-	0.50	5.0	261
	8/15 - 8/31	1		custom blend SCU (10-15-10)	25%	10 - 15 - 10	0.50	-	0.75	-	0.50	5.0	261
	9/15 - 11/30	3	> 30 days	SCU (30-0-10)	50%	30 - 0 - 10	0.90	-	0.00	-	0.30	3.0	157
	*Recommended Total Annual NPK Application							4.2	-	1.50	-	2.07	
Notes	The annual application of total nitrogen <b>should not exceed 4.2 lbs N per 1000 sq ft</b> (maximum for intensively managed cool season athletic fields). During the months of September, October, and November, total nitrogen should not exceed 0.9 lbs per 1000 sq ft of slow or controlled release fertilizer sources or 0.7 lbs per 1000 sq ft of water soluble nitrogen (WSN) per application, with a minimum of 30 days between applications. During the months of April, May, June, and August, total nitrogen should not exceed 0.5 lbs per 1000 sq ft per application, with a minimum of 30 days between applications. Applications should fall within the cool season application window identified in the narrative of this plan. No liming ammendments are recommended to correct for soil pH. Note: Do not apply more than 5 lbs of elemental sulfur per 1000 sq ft per application or more than 10 lbs of elemental sulfur per 1000 sq ft per year. Timing between applications should be minimum of 3 months. Warm temperature and moist soil are needed for sulfur to reduce soil pH. To reduce soil pH apply 10 pounds of elemental sulfur per 1000 sq ft. Soil tests can be conducted annually to determine if additional sulfur or lime is needed to maintain the soil pH during years 2 and 3 of this nutrient management plan implementation.												
Comments	* Recommendations are targeted based on pH of 6.2 for optimal nutrient availability and growth of turfgrass *												

# Soil Test Summary

Customer Name:	City of Winchester – Friendship Park
Testing Lab:	Waypoint Analytical
Sample Date:	January 29, 2019
Planner Name	Parker Osterloh, Timmons Group
Certification Number	#920

Managed Area ID	AREA (sq ft)	Soil pH	Buffer pH	Lab Test P (ppm)	VT (H/M/L)	Lab Test K (ppm)	VT (H/M/L)	Species
Friendship Field	52,822	7.6	-	11.85	M	143.14	H+	Tall Fescue/Kentucky Bluegrass Mix

Notes: H = High, M = Medium, L = Low

# Soil Test Reports

Soil samples were taken from the managed turfgrass at the soccer field at Friendship Park on January 29, 2019 . Soil samples were analyzed by Waypoint Analytical (formerly A&L Eastern Laboratories). Standard soil test results provide values for pH, phosphorus, calcium, magnesium, potassium, cation exchange capacity, and organic matter. The soil samples collected are valid for the life of this plan (three years) or upon a major renovation or redesign of the park, whichever occurs sooner.

## **A. Management Area 1 - 1.2 acres (Friendship Field)**

The phosphorus level was Medium (M) for the athletic field. Applications of phosphorus are recommended, not to exceed 1.5 lb/1,000 sq ft annually. See additional notes on the nutrient application worksheet. The potassium level was High Plus (H+) for the athletic field. Applications of potassium are recommended, approximately 0.5 lb/1,000 sq ft annually. Nitrogen applications are recommended as 4.2 lbs/1,000 sq ft annually based on maximum nitrogen per application rates. The annual maximum nitrogen application rate for cool season grasses on intensively managed athletic fields is 4.5 lbs/1,000 sq ft (See the Nutrient Management Worksheet for additional detail).

# Standards and Criteria

## Section VI. Turfgrass Nutrient Recommendations for Home Lawns, Office Parks, Public Lands and Other Similar Residential/Commercial Grounds

### Definitions

For the purposes of this section, the following definitions, as presented by the Association of American Plant Food Control Officials (AAPFCO), apply:

“Enhanced efficiency fertilizer” describes fertilizer products with characteristics that allow increased plant nutrient availability and reduce the potential of nutrient losses to the environment when compared to an appropriate reference product.

“Slow or controlled release fertilizer” means a fertilizer containing a plant nutrient in a form which delays its availability for plant uptake and use after application, or which extends its availability to the plant significantly longer than a reference “rapidly available nutrient fertilizer” such as ammonium nitrate, urea, ammonium phosphate or potassium chloride. A slow or controlled release fertilizer must contain a minimum of 15 percent slowly available forms of nitrogen.

“Water soluble nitrogen”, “WSN” and “readily available nitrogen” means: Water soluble nitrogen in either ammonical, urea, or nitrate form that does not have a controlled release, or slow response.

### Recommended Season of Application For Nitrogen Fertilizers - Applies to all Turf

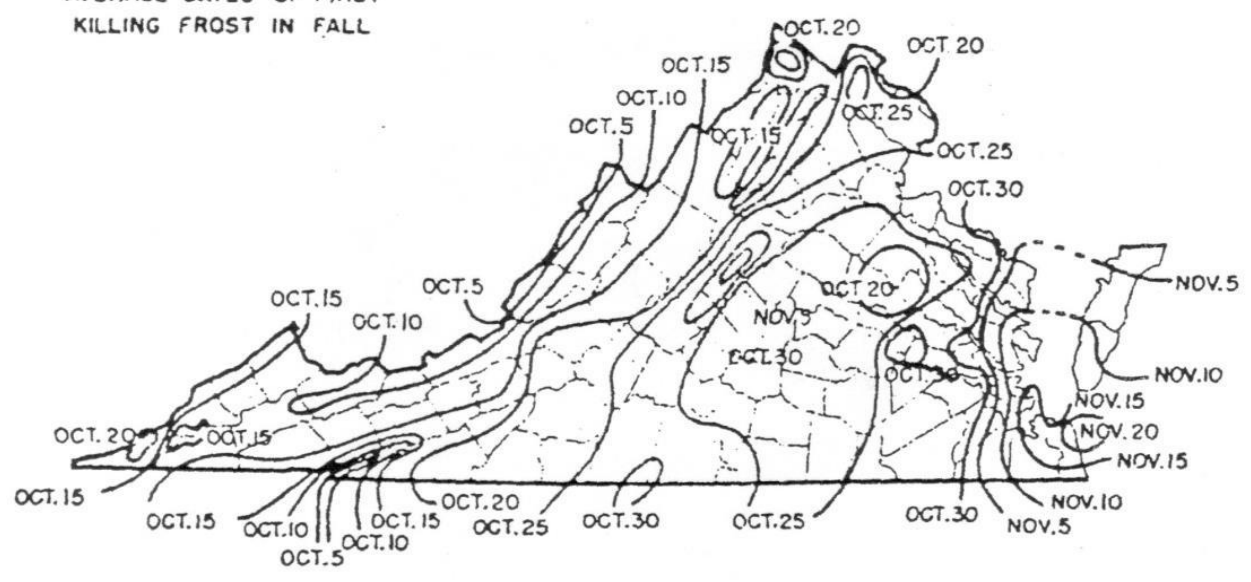
A nitrogen fertilization schedule weighted toward fall application is recommended and preferred for agronomic quality and persistence of cool season turfgrass; however, the acceptable window of applications is much wider than this for nutrient management. The nutrient management recommended application season for nitrogen fertilizers to cool season turfgrasses begins six weeks prior to the last spring average killing frost date and ends six weeks past the first fall average killing frost date (see Figures 6-1 & 6-2). Applications of nitrogen during the intervening late fall and winter period should be avoided due to higher potential leaching or runoff risk, but where necessary, apply no more than 0.5 pounds per 1,000 ft<sup>2</sup> of water soluble nitrogen within a 30 day period. Higher application rates may be used during this late fall and winter period by using materials containing slowly available sources of nitrogen, if the water soluble nitrogen contained in the fertilizer does not exceed the recommended maximum of 0.5 pounds per 1,000 ft<sup>2</sup> rate. Do not apply nitrogen or phosphorus fertilizers when the ground is frozen.

The acceptable nitrogen fertilizer application season for non-overseeded warm season turfgrass begins no earlier than the last spring average killing frost date and ends no later than one month prior to the first fall average killing frost date (see Figures on next sheet).



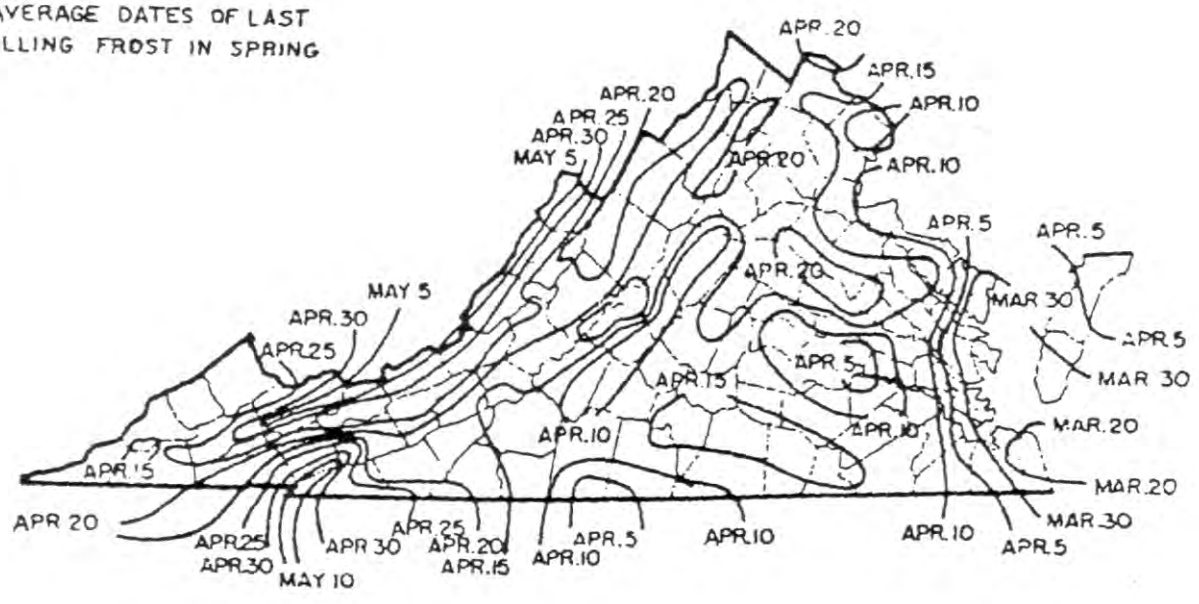
### VIRGINIA

AVERAGE DATES OF FIRST  
KILLING FROST IN FALL



### VIRGINIA

AVERAGE DATES OF LAST  
KILLING FROST IN SPRING



### **Per Application Rates**

Do not apply more than 0.7 pounds of water soluble nitrogen per 1,000 ft<sup>2</sup> within a 30 day period. For cool season grasses, do not apply more than 0.9 pounds of total nitrogen per 1,000 ft<sup>2</sup> within a 30 day period. For warm season grasses, do not apply more than 1.0 pounds of total nitrogen per 1,000 ft<sup>2</sup> within a 30 day period. Lower per application rates of water soluble nitrogen sources or use of slowly available nitrogen sources should be utilized on very permeable sandy soils, shallow soils over fractured bedrock, or areas near water wells.

### **Use of Slowly Available Forms of Nitrogen**

For slow or controlled release fertilizer sources, or enhanced efficiency fertilizer sources, no more than 0.9 pounds of nitrogen per 1,000 ft<sup>2</sup> may be applied to cool season grasses within a 30 day period and no more than 1.0 pounds of nitrogen per 1,000 ft<sup>2</sup> may be applied to warm season grasses within a 30 day period.

Provided the fertilizer label guarantees that the product can be used in such a way that it will not release more than 0.7 pounds of nitrogen per 1,000 ft<sup>2</sup> in a 30 day period, no more than 2.5 pounds of nitrogen per 1,000 ft<sup>2</sup> may be applied in a single application. Additionally, total annual applications shall not exceed 80 percent of the annual nitrogen rates for cool or warm season grasses.

### **Phosphorus and Potassium Nutrient Needs (Established Turf)**

Apply phosphorus (P<sub>2</sub>O<sub>5</sub>) and potassium (K<sub>2</sub>O) fertilizers as indicated necessary by a soil test using the following guidelines:

\* For the lower soil test level within a rating, use the higher side of the range and for higher soil test level

within a rating use the lower side of the recommendation range. (For example the recommendation for a

P<sub>2</sub>O<sub>5</sub> soil test level of L- would be 3 pounds per 1,000 ft<sup>2</sup>.)

Do not use high phosphorus ratio fertilizers such as 10-10-10 or 5-10-10, unless soil tests indicate phosph

orus availability below the M+ level.

### **Recommendations for Establishment of Turf**

These recommendations are for timely planted turfgrass, that is, the seed or vegetative material (sod, plugs, and /or sprigs), are planted at a time of the year when temperatures and moisture are adequate to maximize turfgrass establishment. These recommended establishment periods would be late summer to early fall for cool-season turfgrasses and late spring through mid-summer for warm-season turfgrasses.

## **Nitrogen Applications**

At the time of establishment, apply no more than 0.9 pounds per 1,000 ft<sup>2</sup> of total nitrogen for cool season grasses or 1.0 pounds per 1,000 ft<sup>2</sup> of total nitrogen for warm season grasses, using a material containing slowly available forms of nitrogen, followed by one or two applications beginning 30 days after planting, not to exceed a total of 1.8 pounds per 1,000 ft<sup>2</sup> total for cool season grasses and 2.0 pounds per 1,000 ft<sup>2</sup> for warm season grasses for the establishment period. Applications of WSN cannot exceed more than 0.7 pounds per 1,000 ft<sup>2</sup> within a 30 day period.

## **Phosphorus and Potassium Recommendations for Establishment**

\* For the lower soil test level within a rating, use the higher side of the range and for higher soil test level within a rating use the lower side of the recommendation range.

## **Nitrogen Management on Athletic Fields - Cool Season Grasses**

- This program is intended for those fields which are under heavy use.
- Nitrogen recommendations are based on the assumption that there is adequate soil moisture to promote good turf growth at the time of application. If no rainfall has occurred since the last application, further applications should be delayed until significant soil moisture is available.

### **Notes:**

- Soluble nitrogen rates of 0.25 pounds per 1,000 ft<sup>2</sup> or less which may be a component of a pesticide or minor element application may be applied any time the turf is actively growing, but must be considered with the total annual nitrogen application rate.
  - WSN = water soluble nitrogen; WIN = water insoluble nitrogen
- (a) Intensive managed areas must be irrigated.
  - (b) The beginning and ending dates for application of nitrogen shall be determined using guidance and frost date maps contained in the preceding Season of Application for Nitrogen section, using Figures 6-1 and 6-2.
  - (c) Rates up to 0.9 pounds per 1,000 ft<sup>2</sup> of total nitrogen can be applied using a material containing slowly available forms of nitrogen, with a minimum of 30 days between applications.
  - (d) Make this application only if turf use warrants additional nitrogen for sustaining desirable growth and /or color.

## **Nitrogen Management on Athletic Fields - Warm Season Grasses**

The following comments apply to both Naturally Occurring or Modified Sand based Fields and Predominantly Silt/Clay Soil Fields:

- Annual nitrogen rates for warm season grasses shall not exceed **4 pounds** in areas which have the average first killing frost on or before October 20, and shall not exceed **5 pounds** in areas which have the average first killing frost after October 20 as shown in Figure 6-1. Nitrogen rates and timings for overseeding warm season grasses are not included in these rates.
- April 15 - May 15 applications should not be made until after complete green-up of turf.
- Nitrogen applications June through August should be coordinated with anticipated rainfall if irrigation is not available.

Use the lower end of the ranges for non-irrigated fields and the higher end of the ranges should be used on fields with irrigation.

Nitrogen rates towards the higher end of the ranges may be applied on heavily used fields to accelerate recovery, however per application and annual rates cannot be exceeded.

For overseeded warm season grasses, an additional 0.7 pounds per 1,000ft<sup>2</sup> of WSN may be applied in the Fall after the perennial ryegrass overseeding is well established. The WSN must be applied as two applications not to exceed 0.35 pounds per 1,000 ft<sup>2</sup> of nitrogen each, with a minimum of 15 days between applications. Additional WSN application of 0.5 pounds per 1,000 ft<sup>2</sup> may be made in February-March to overseeded perennial ryegrass if growth and color indicate need. Alternatively, split applications of 0.5 pounds of nitrogen per 1,000 ft<sup>2</sup> each with a minimum of 15 days between applications may be applied using a material containing slowly available nitrogen sources.

# Reference Materials and Notes

**Virginia Nutrient Management Standards and Criteria, Revised July 2014, Department of Conservation and Recreation, Division of Soil and Water Conservation**

**ESRI Aerial Photography**

# Fertilizer Application Records

Customer Information					Management Area Information			
Name:	City of Winchester				Management Area ID:	Friendship Field		
Address:	623 North Pleasant Valley Road				Management Area Size:	52,822 sq ft		
	Winchester, VA 22601				Plant Species:	Tall Fescue/Bluegrass Mixture		
Phone #:	540-667-1815				Notes:			
Date (M/D/Y)	Supervisor/Applicator	Weather Conditions			Fertilizer Analysis	Rate	Amount Fertilizer Used	Application Equipment Used
		Temp	Wind Speed	Precip				
When was the last time your fertilizer equipment was calibrated??? For information on calibration see Chapter 10 of the "Urban Nutrient Management Handbook". Available for download at <a href="http://pubs.ext.vt.edu/430/430-350/430-350.html">http://pubs.ext.vt.edu/430/430-350/430-350.html</a>								

Soil Test Results



7621 Whitepine Road, Richmond, VA 23237  
 Main 804-743-9401 • Fax 804-271-6446  
 www.waypointanalytical.com

**SOIL ANALYSIS**

Client : <b>TIMMONS GROUP</b> Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	Grower : City of Winchester NMPs  PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received: 01/31/2019 Date Analysis : 02/01/2019 Page : 15 of 30
---	--	--

Lab Number : 08487

Field Id :

Sample Id : Friendship

Test	Results	SOIL TEST RATINGS					Calculated Cation Exchange Capacity
		Very Low	Low	Medium	Optimum	Very High	
Soil pH	7.6						16.6 meq/100g
Buffer pH							
Phosphorus (P)	33 ppm						Calculated Cation Saturation
Potassium (K)	202 ppm						
Calcium (Ca)	2718 ppm						%K 3.1
Magnesium (Mg)	296 ppm						%Ca 81.9
Sulfur (S)							%Mg 14.9
Boron (B)							%H 0.0
Copper (Cu)							Hmeq 0.0
Iron (Fe)							
Manganese (Mn)							
Zinc (Zn)							K : Mg Ratio
Sodium (Na)							0.20
Soluble Salts							Ca : Mg Ratio
Organic Matter	6.4 % ENR 150						5.50
Nitrate Nitrogen							

**SOIL FERTILITY GUIDELINES**

Crop : Lawn

Rec Units: LB/1000 SF

(lbs)	LIME	(tons)	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	Mg	S	B	Cu	Mn	Zn	Fe
0			4.0	0.5	0	0						
Crop :												Rec Units:

Comment :

*Paucic McGroary*

Analysis prepared by: Waypoint Analytical Virginia, Inc.

Paucic McGroary

**SOIL ANALYSIS**

Client : TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	Grower : City of Winchester NMPs  PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 16 of 30
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Lab Number : 08487

Field Id :

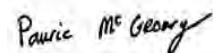
Sample Id : Friendship

SUGGESTED FERTILIZATION PROGRAM							
First Application		Second Application		Third Application		Fourth Application	
#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer
8	16-4-8	8	16-4-8	6	21-3-7		

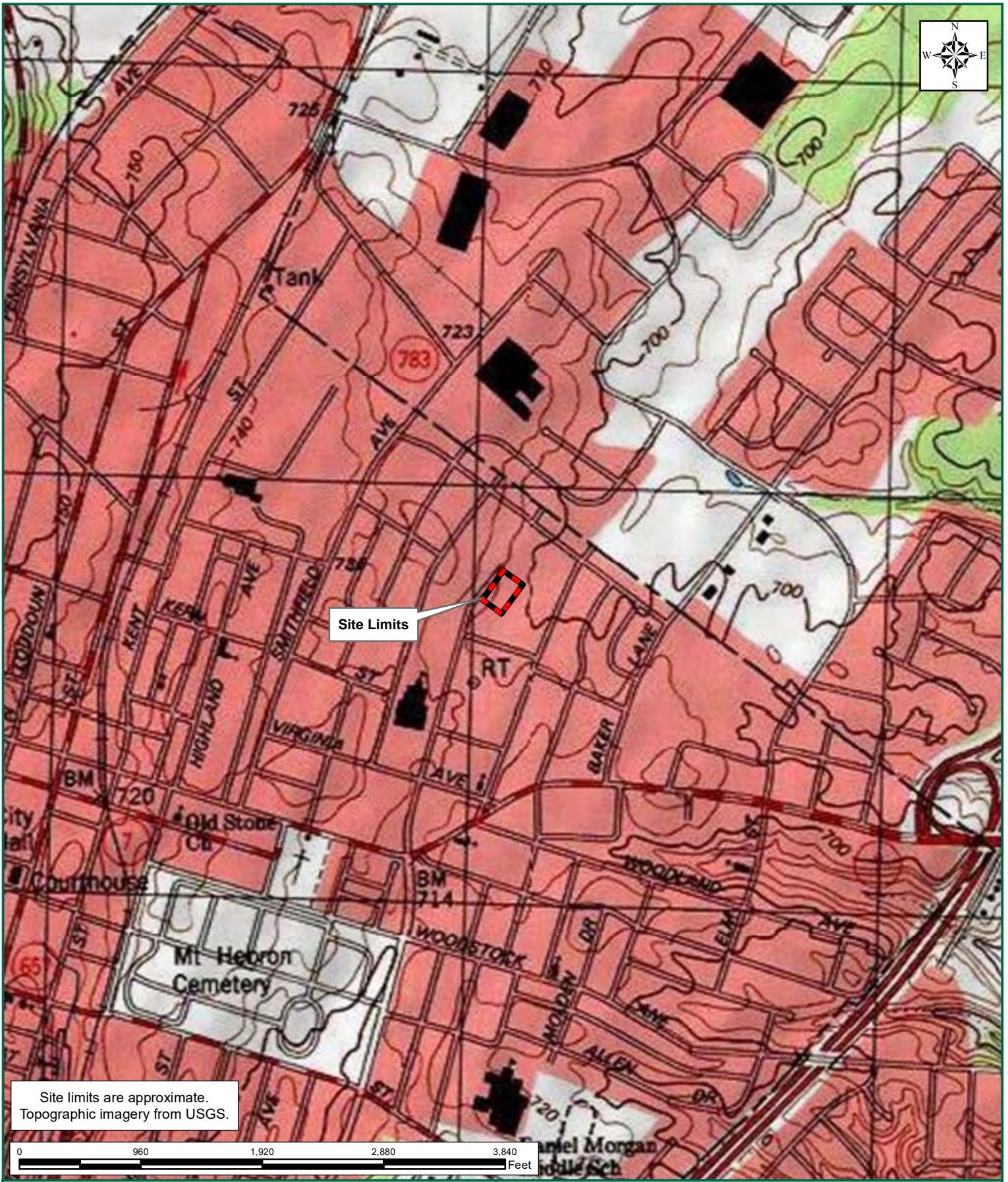
Comments:

**Lawn**

- Cation Exchange Capacity may be over-estimated due to high pH and free lime in the soil.
- The amount of fertilizer recommended on the first page is the total amount needed for the entire growing season. Split into 3-4 applications to keep the lawn green and prevent fertilizer loss. You should not apply more than 0.7 lbs of soluble nitrogen per 1000 square feet in a 30 day period. Or more than 0.9 lbs of nitrogen per 1000 square feet if you are using a slow or controlled release product in a 30 day period. Custom blend is best to meet exactly the requirement, if this is impossible, the above specific fertilizer application is a general guideline, if the specified grades can not be found, replace with fertilizer having similar N:P:K ratio. The best time to apply fertilizer for cool season grass (bluegrass, fescue, ryegrass) is in the Fall when the grass is growing. For Mid-Atlantic region the time is from late August to November. For Northeast region the time is from mid August to October. Fall application should start as soon as the day time high temperature is below 80-85F, apply with the interval of one month. If you start application late in the Fall and do not finish all three applications, repeat the same applications in the Fall of next year. Spring application is recommended when exceptional fertilizer loss due to heavy spring rain leaching and the grasses look pale green. Spring application can start as soon as the grass starts to grow in April. In the case of exceptional warm spring, the application can be made earlier.
- To reduce soil pH apply 2.5 pounds of elemental sulfur per 1000 square feet for every 0.1 of pH unit above 7.2. For example, a soil pH of 7.4 requires 5 pounds of elemental sulfur (0.2 \* 2.5). Do not apply more than 5 lbs per 1000 square feet per application or more than 10 lbs of elemental sulfur per 1000 square feet per year. Timing between applications should be minimum of 3 months. Warm temperature and moist soil are needed for sulfur to reduce soil pH. If sulfur is applied in winter or under drought conditions, it will take longer for the the soil pH to be lowered.
- Use ammonium sulfate as all or portion of the N requirement to reduce pH.

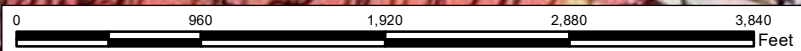






Site Limits

Site limits are approximate.  
Topographic imagery from USGS.



**WINCHESTER NUTRIENT MANAGEMENT PLANS - FRIENDSHIP PARK**  
 CITY OF WINCHESTER, VIRGINIA  
**FIGURE 1: VICINITY MAP**

**TIMMONS GROUP**  
 YOUR VISION ACHIEVED THROUGH OURS.

TIMMONS GROUP JOB NUMBER: 36284.007  
 PROJECT STUDY LIMITS: 1.2 ACRES  
 LATITUDE: 39° 11' 26.4" N  
 LONGITUDE: 78° 09' 02.6" W

U.S.G.S. QUADRANGLE(S): WINCHESTER  
 DATE(S): 2013  
 WATERSHED(S): CONOCOHEAGUE-OPEQUON  
 HYDROLOGIC UNIT CODE(S): 02070004

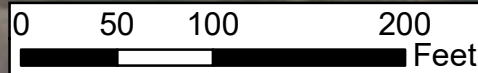
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**Legend**

-  Friendship Park - 1.2 Acres
-  NHD Streams
-  National Wetland Inventory



Project Limits are approximate.  
 NWI from US Fish and Wildlife Service.  
 National Hydrography Dataset from USGS.  
 Aerial imagery from ESRI online.



# TIMMONS GROUP

WINCHESTER NUTRIENT MANAGEMENT PLANS - FRIENDSHIP PARK  
 CITY OF WINCHESTER, VIRGINIA

FIGURE 2: ENVIRONMENTAL INVENTORY MAP

THIS DRAWING PREPARED AT THE  
 CORPORATE OFFICE  
 1001 Boulders Parkway, Suite 300 / Richmond, VA 23225  
 TEL 804.202.6500 FAX 804.560.7648 www.timmons.com

DATE	REVISION DESCRIPTION
03/11/2016	

YOUR VISION ACHIEVED THROUGH OURS  
 Site Development | Residential | Infrastructure | Technology | Environmental

JOB NUMBER  
36284.007  
 SHEET NO.  
1 OF 1

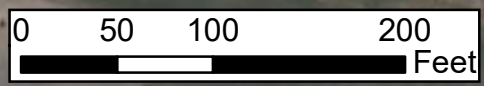
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**Legend**

- Project Study Limits - 1.2 Acres
- Management Area 1 - 1.2 Acres



**TIMMONS GROUP**

WINCHESTER NUTRIENT MANAGEMENT PLANS - FRIENDSHIP PARK  
CITY OF WINCHESTER, VIRGINIA

**FIGURE 3: NUTRIENT MANAGEMENT AREAS MAP**

THIS DRAWING PREPARED AT THE  
CORPORATE OFFICE  
1001 Boulders Parkway, Suite 300 / Richmond, VA 23225  
TEL 804.202.6500 FAX 804.560.7648 www.timmons.com

Site Development | Residential | Infrastructure | Technology | Environmental

DATE: 03/30/2016  
DRAWN BY: B. NORRIS  
DESIGNED BY: B. NORRIS  
CHECKED BY: E. VIRTS  
SCALE: 1" = 100'

JOB NUMBER: 36284.007  
SHEET NO. 1 OF 1

DATE	REVISION DESCRIPTION

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Matthew J. Strickler  
Secretary of Natural Resources

Clyde E. Cristman  
Director



Rochelle Altholz  
Deputy Director of  
Administration and Finance

Russell W. Baxter  
Deputy Director of  
Dam Safety & Floodplain  
Management and Soil & Water  
Conservation

Thomas L. Smith  
Deputy Director of Operations

**COMMONWEALTH of VIRGINIA**  
DEPARTMENT OF CONSERVATION AND RECREATION

Mr. Lambert  
Rouss City Hall, 15 N Cameron St.  
Winchester VA, 22601

4/17/2019

Subject: Friendship Park Nutrient Management Plan Review

The following nutrient management plan has been reviewed by Nick Yakish and confirmed by the Virginia Department of Conservation & Recreation to be developed in accordance with the Code of Virginia 10.1-104.2. Please note that this plan has not been reviewed for compliance with more restrictive requirements from other specific legislative, regulatory or incentive programs.

Plan Name	Planner	Acres	Start Date	Expiration Date
Friendship Park	Parker Osterloh	1.2	3/15/2019	3/15/2022

A copy of this letter should be kept with your nutrient management plan. Initiation of plan revision is recommended by the Department to occur at least six months prior to the expiration date. If you have any questions concerning this letter or reviews, please contact me via phone or email.

Sincerely,

A handwritten signature in black ink, appearing to read "Nick Yakish".

Nick Yakish  
Urban Nutrient Management Coordinator  
Department of Conservation and Recreation  
600 East Main St., 24<sup>th</sup> Floor  
Richmond, Virginia 23219  
(804) 389-5439  
nicholas.yakish@dcr.virginia.gov

# Nutrient Management Plan

## Harvest Ridge Park

Prepared For:

Tommy Lambert  
City of Winchester  
Rouss City Hall, 15 N. Cameron Street  
Winchester, Virginia 22601  
540-667-1815

Prepared By:

Parker Osterloh, Timmons Group  
1001 Boulders Parkway, Suite 300  
Richmond, VA 23225  
804-200-6457  
Certification Code: #920  
Total Managed Area Acreage: 1.0

The purpose of this Nutrient Management Plan is to ensure minimum movement of Nitrogen and phosphorous from the specified area of application to surface and groundwaters where they can potentially have a detrimental effect on water quality as well as ensuring plants have optimum soil nutrient availability for maximum productivity and quality. By following this soil test based plan you are helping to protect waters of the Chesapeake Bay.

If you have any questions, please contact your plan writer, local Virginia Cooperative Extension Agent, or the Department of Conservation and Recreation Nutrient Management Program.

# Nutrient Management Plan For:

## Harvest Ridge Park

### Landowner Information:

Company Name	City of Winchester
Customer Name	Tommy Lambert
Mailing Address	Rouss City Hall, 15 N. Cameron Street
City, State Zip	Winchester, Virginia 22601
Phone	540-667-1815
Email	Thomas.lambert@winchesterva.gov

### Planner Information:

Planner Name	Parker Osterloh
Mailing Address	1001 Boulders Parkway, Suite 300
City, State Zip	Richmond, VA 23225
Phone	804-200-6457
Fax	804-560-1016
Email	Parker.osterloh@timmons.com
Certification Code	#920

### Location Information:

Physical Address	805 Crestview Terrace
City, State Zip	Winchester, VA 22601
Latitude	39° 09' 32.5"
Longitude	-77° 11' 33.1"
VAHU6 Watershed Code	PU17 Abrams Creek
County	City of Winchester

### Acreage:

Total	43,560 square feet (1 acres)
-------	------------------------------

Plan Start Date	3/15/19
Plan End Date	3/15/2022

Planner Signature:



# Narrative

This nutrient management plan has been prepared by Timmons Group, on behalf of the City of Winchester. Harvest Ridge Park is located on Crestview Terrace in Winchester, Virginia, within a residential development between Stoneridge Road and Windwood Drive (see [Figure 1: Vicinity Map](#)). The park has one soccer field and is relatively flat except for a small area with steeper slopes of less than 15% along the southwest park border. No wetlands were found to be present within the nutrient management area (Area) during the January 29, 2019 site visit and no wetlands or streams were depicted within the site limits as shown on [Figure 2: Environmental Inventory Map](#). There were no wells, subsurface tile drains, springs, sinkholes, rock outcrops, land with slopes steeper than 15%, or qualifying soil types observed within the Area and therefore, no environmentally sensitive areas were identified.

Using aerial photography and through discussions with City of Winchester staff, a 1.0-acre area (43,560 sq ft) was identified as turf where fertilizer could be applied, although this field has never been fertilized in the past. The turf on the soccer field (Harvest Ridge Field) at Harvest Ridge Park is comprised of a cool season grass.

This plan is effective for three years (until March 15, 2022) or until significant changes to maintenance practices occur. Should the City of Winchester decide to fertilize any locations within Harvest Ridge Park outside of these managed areas, this nutrient management plan should be updated with recommendations for the additional area(s). Other significant changes would include: changing turf species in the athletic fields, renovating an athletic field and the existing underlying soil, creation of an additional athletic field, expansion of the area to be included under this nutrient management plan, or other changes that could alter nutrient recommendations and timing.

One management area was determined for Harvest Ridge Park. Management Area 1 (Harvest Ridge Field) is shown on [Figure 3: Nutrient Management Areas Map](#). Based on the City of Winchester, Virginia average first killing frost date of October 15th (Fall), the average last killing frost date of April 15th (Spring), and the cool season turf identified onsite, fertilizer applications on this management area should occur within the cool season application period of March 4th to November 26th. Nutrient application instructions are identified in the nutrient management worksheet of this plan.

Applications of nutrients should not occur on frozen or snow-covered ground. Any fertilizer that makes its way onto impervious surfaces should be swept or blown back into pervious turfgrass-covered areas. Do not use fertilizers as ice melt. Nutrient applications should not be completed when significant runoff producing events are anticipated.

**Every fertilizer application should be recorded in the record sheet provided.** Any questions or concerns with fertilizer products or record keeping should be brought to the plan writer's attention.



# Nutrient Management Worksheet

Property:	Harvest Ridge Park												
Prepared:	3/15/19						Species:	Cool Season					
Expires:	3/15/22												
Management Area	Application Month/Day	# of Apps	Application Interval	Fertilizer Product	% Slow Release N	NPK Value of Fertilizer Product	Total NPK lbs/1,000 square feet			Required lbs/1,000 ft <sup>2</sup> of Fertilizer Product to Meet Target Application Rate	Total Required lbs per area		
						N - P <sub>2</sub> O <sub>5</sub> - K <sub>2</sub> O	N	-	P <sub>2</sub> O <sub>5</sub>	-	K <sub>2</sub> O		
Management Area 1: Harvest Ridge Field acreage = approximately 1.0  Maximum 4.2-1-0	4/15 - 5/15	1		SCU (30-0-10)	50%	30 - 0 - 10	0.50	-	0.00	-	0.17	1.7	73
	6/1 - 6/15	1		custom blend SCU (10-10-10)	25%	10 - 10 - 10	0.50	-	0.50	-	0.00	5.0	218
	8/15 - 8/31	1		custom blend SCU (10-10-10)	25%	10 - 10 - 10	0.50	-	0.50	-	0.00	5.0	218
	9/15 - 11/30	3	> 30 days	SCU (30-0-10)	50%	30 - 0 - 10	0.90	-	0.00	-	0.30	3.0	131
	*Recommended Total Annual NPK Application							4.2	-	1.00	-	1.07	
Notes	The annual application of total nitrogen <b>should not exceed 4.2 lbs N per 1000 sq ft</b> (maximum for intensively managed cool season athletic fields). During the months of September, October, and November, total nitrogen should not exceed 0.9 lbs per 1000 sq ft of slow or controlled release fertilizer sources or 0.7 lbs per 1000 sq ft of water soluble nitrogen (WSN) per application, with a minimum of 30 days between applications. During the months of April, May, June, and August, total nitrogen should not exceed 0.5 lbs per 1000 sq ft per application, with a minimum of 30 days between applications. Applications should fall within the cool season application window identified in the narrative of this plan.												
Sulfur Recommendations	* Recommendations are targeted based on a soil pH of 6.2 for optimal nutrient availability and growth of turfgrass *  Use sulfur coated urea to reduce soil pH.												

# Soil Test Summary

Soil Test Summary								
Customer Name:	City of Winchester - Harvest Ridge Park							
Testing Lab:	Waypoint Analytical							
Sample Date:	January 29, 2019							
Planner Name	Marjorie Siwy, Timmons Group							
Certification Number	#844							
Managed Area ID	AREA (sq ft)	Soil pH	Buffer pH	Lab Test P (ppm)	VT (H/M/L)	Lab Test K (ppm)	VT (H/M/L)	Species
Harvest Ridge Field	43,560	7.0	-	16.8	M+	164.7	VH	Tall Fescue
Notes:	VH = Very High, H = High, M = Medium, and L = Low							

# Soil Test Reports

Soil samples were taken from the turfgrass at the athletic field at Harvest Ridge Park on January 29, 2019. Soil samples were analyzed by Waypoint Analytical (formerly A&L Eastern Laboratories). Standard soil test results provide values for pH, phosphorus, calcium, magnesium, potassium, cation exchange capacity, and organic matter. The soil samples collected are valid for the life of this plan (three years) or upon a major renovation or redesign of the park, whichever occurs sooner.

## **A. Management Area 1 - 1.0 acre (Harvest Ridge Field)**

The phosphorus level was Medium+ (M+) for the athletic field. Applications of phosphorus are recommended, not to exceed 1.0 lb/1,000 sq ft annually. See additional notes on the nutrient application worksheet. The potassium level was Very High (VH) for the athletic field. Maximum applications of potassium are recommended 0 lb/1,000 sq ft annually. This potassium recommendation exceeds that derived from the soil analysis. However, potassium is not an environmentally regulated nutrient and application of surplus potassium will only increase strength and vigor of turfgrass roots. Nitrogen applications are recommended as 4.2 lbs/1,000 sq ft annually based on maximum nitrogen per application rates. The annual maximum nitrogen application rate for cool season grasses on intensively managed athletic fields is 4.2 lbs/1,000 sq ft (see the Nutrient Management Worksheet for additional detail).

# Standards and Criteria

## Section VI. Turfgrass Nutrient Recommendations for Home Lawns, Office Parks, Public Lands and Other Similar Residential/Commercial Grounds

### Definitions

For the purposes of this section, the following definitions, as presented by the Association of American Plant Food Control Officials (AAPFCO), apply:

“Enhanced efficiency fertilizer” describes fertilizer products with characteristics that allow increased plant nutrient availability and reduce the potential of nutrient losses to the environment when compared to an appropriate reference product.

“Slow or controlled release fertilizer” means a fertilizer containing a plant nutrient in a form which delays its availability for plant uptake and use after application, or which extends its availability to the plant significantly longer than a reference “rapidly available nutrient fertilizer” such as ammonium nitrate, urea, ammonium phosphate or potassium chloride. A slow or controlled release fertilizer must contain a minimum of 15 percent slowly available forms of nitrogen.

“Water soluble nitrogen”, “WSN” and “readily available nitrogen” means: Water soluble nitrogen in either ammonical, urea, or nitrate form that does not have a controlled release, or slow response.

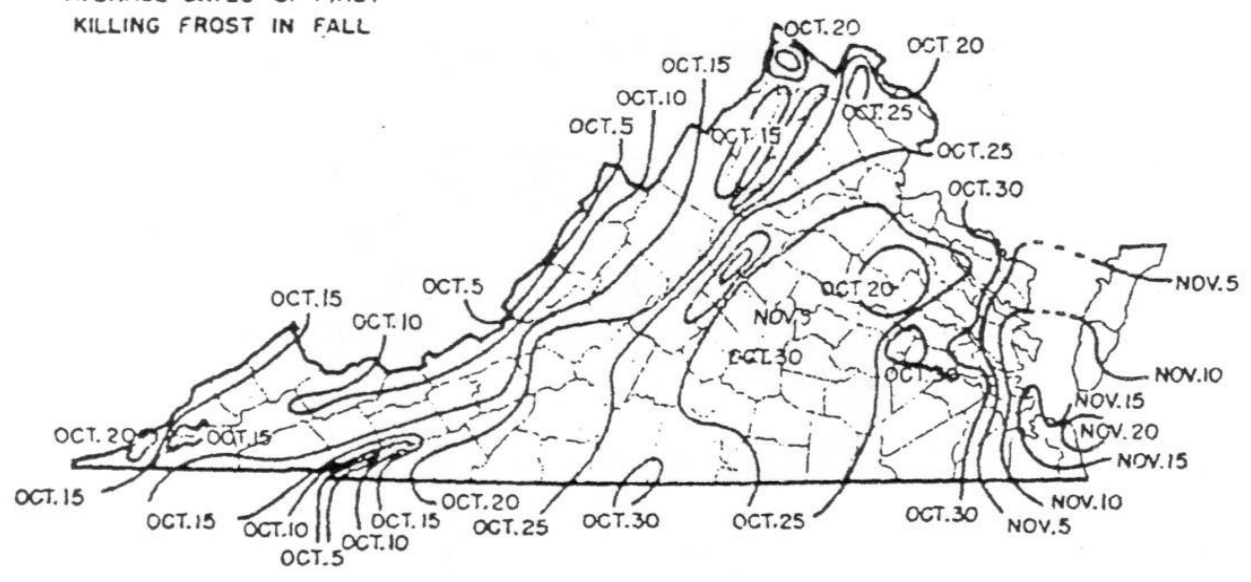
### Recommended Season of Application For Nitrogen Fertilizers - Applies to all Turf

A nitrogen fertilization schedule weighted toward fall application is recommended and preferred for agronomic quality and persistence of cool season turfgrass; however, the acceptable window of applications is much wider than this for nutrient management. The nutrient management recommended application season for nitrogen fertilizers to cool season turfgrasses begins six weeks prior to the last spring average killing frost date and ends six weeks past the first fall average killing frost date (see Figures 6-1 & 6-2). Applications of nitrogen during the intervening late fall and winter period should be avoided due to higher potential leaching or runoff risk, but where necessary, apply no more than 0.5 pounds per 1,000 ft<sup>2</sup> of water soluble nitrogen within a 30 day period. Higher application rates may be used during this late fall and winter period by using materials containing slowly available sources of nitrogen, if the water soluble nitrogen contained in the fertilizer does not exceed the recommended maximum of 0.5 pounds per 1,000 ft<sup>2</sup> rate. Do not apply nitrogen or phosphorus fertilizers when the ground is frozen.

The acceptable nitrogen fertilizer application season for non-overseeded warm season turfgrass begins no earlier than the last spring average killing frost date and ends no later than one month prior to the first fall average killing frost date (see Figures on next sheet).

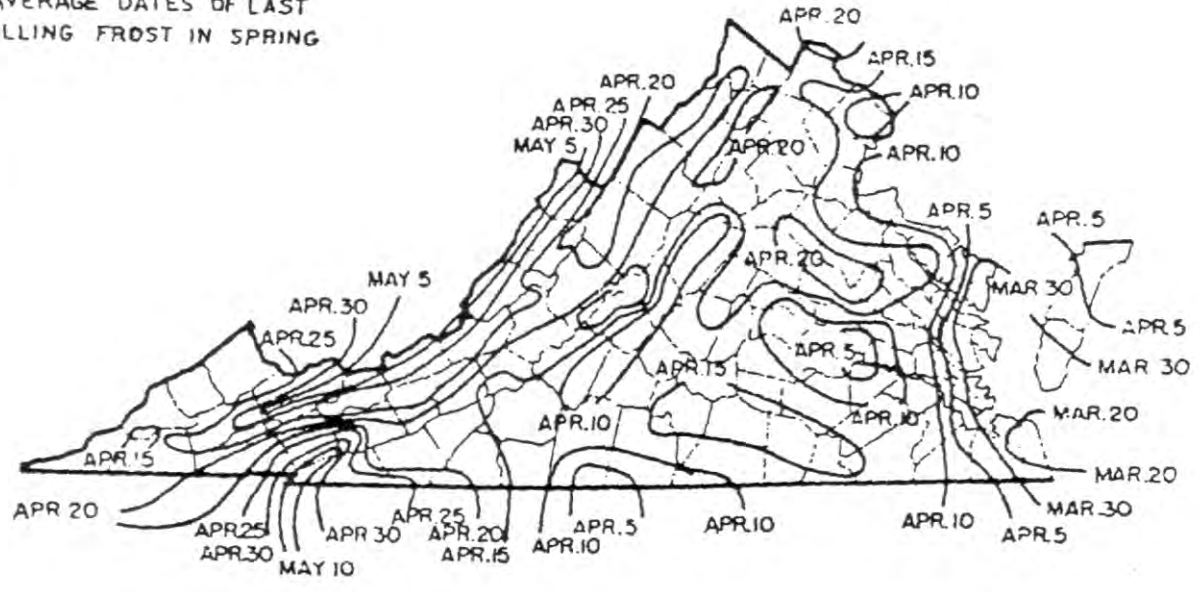
### VIRGINIA

AVERAGE DATES OF FIRST  
KILLING FROST IN FALL



### VIRGINIA

AVERAGE DATES OF LAST  
KILLING FROST IN SPRING



### **Per Application Rates**

Do not apply more than 0.7 pounds of water soluble nitrogen per 1,000 ft<sup>2</sup> within a 30 day period. For cool season grasses, do not apply more than 0.9 pounds of total nitrogen per 1,000 ft<sup>2</sup> within a 30 day period. For warm season grasses, do not apply more than 1.0 pounds of total nitrogen per 1,000 ft<sup>2</sup> within a 30 day period. Lower per application rates of water soluble nitrogen sources or use of slowly available nitrogen sources should be utilized on very permeable sandy soils, shallow soils over fractured bedrock, or areas near water wells.

### **Use of Slowly Available Forms of Nitrogen**

For slow or controlled release fertilizer sources, or enhanced efficiency fertilizer sources, no more than 0.9 pounds of nitrogen per 1,000 ft<sup>2</sup> may be applied to cool season grasses within a 30 day period and no more than 1.0 pounds of nitrogen per 1,000 ft<sup>2</sup> may be applied to warm season grasses within a 30 day period.

Provided the fertilizer label guarantees that the product can be used in such a way that it will not release more than 0.7 pounds of nitrogen per 1,000 ft<sup>2</sup> in a 30 day period, no more than 2.5 pounds of nitrogen per 1,000 ft<sup>2</sup> may be applied in a single application. Additionally, total annual applications shall not exceed 80 percent of the annual nitrogen rates for cool or warm season grasses.

### **Phosphorus and Potassium Nutrient Needs (Established Turf)**

Apply phosphorus (P<sub>2</sub>O<sub>5</sub>) and potassium (K<sub>2</sub>O) fertilizers as indicated necessary by a soil test using the following guidelines:

\* For the lower soil test level within a rating, use the higher side of the range and for higher soil test level

within a rating use the lower side of the recommendation range. (For example the recommendation for a

P<sub>2</sub>O<sub>5</sub> soil test level of L- would be 3 pounds per 1,000 ft<sup>2</sup>.)

Do not use high phosphorus ratio fertilizers such as 10-10-10 or 5-10-10, unless soil tests indicate phosph

orus availability below the M+ level.

### **Recommendations for Establishment of Turf**

These recommendations are for timely planted turfgrass, that is, the seed or vegetative material (sod, plugs, and /or sprigs), are planted at a time of the year when temperatures and moisture are adequate to maximize turfgrass establishment. These recommended establishment periods would be late summer to early fall for cool-season turfgrasses and late spring through mid-summer for warm-season turfgrasses.

### **Nitrogen Applications**

At the time of establishment, apply no more than 0.9 pounds per 1,000 ft<sup>2</sup> of total nitrogen for cool season grasses or 1.0 pounds per 1,000 ft<sup>2</sup> of total nitrogen for warm season grasses, using a material containing slowly available forms of nitrogen, followed by one or two applications beginning 30 days after planting, not to exceed a total of 1.8 pounds per 1,000 ft<sup>2</sup> total for cool season grasses and 2.0 pounds per 1,000 ft<sup>2</sup> for warm season grasses for the establishment period. Applications of WSN cannot exceed more than 0.7 pounds per 1,000 ft<sup>2</sup> within a 30 day period.

### **Phosphorus and Potassium Recommendations for Establishment**

\* For the lower soil test level within a rating, use the higher side of the range and for higher soil test level within a rating use the lower side of the recommendation range.

### **Nitrogen Management on Athletic Fields - Cool Season Grasses**

- This program is intended for those fields which are under heavy use.
- Nitrogen recommendations are based on the assumption that there is adequate soil moisture to promote good turf growth at the time of application. If no rainfall has occurred since the last application, further applications should be delayed until significant soil moisture is available.

#### **Notes:**

- Soluble nitrogen rates of 0.25 pounds per 1,000 ft<sup>2</sup> or less which may be a component of a pesticide or minor element application may be applied any time the turf is actively growing, but must be considered with the total annual nitrogen application rate.

- WSN = water soluble nitrogen; WIN = water insoluble nitrogen

(a) Intensive managed areas must be irrigated.

(b) The beginning and ending dates for application of nitrogen shall be determined using guidance and frost date maps contained in the preceding Season of Application for Nitrogen section, using Figures 6-1 and 6-2.

(c) Rates up to 0.9 pounds per 1,000 ft<sup>2</sup> of total nitrogen can be applied using a material containing slowly available forms of nitrogen, with a minimum of 30 days between applications.

(d) Make this application only if turf use warrants additional nitrogen for sustaining desirable growth and /or color.

### **Nitrogen Management on Athletic Fields - Warm Season Grasses**

The following comments apply to both Naturally Occurring or Modified Sand based Fields and Predominantly Silt/Clay Soil Fields:

- Annual nitrogen rates for warm season grasses shall not exceed **4 pounds** in areas which have the average first killing frost on or before October 20, and shall not exceed **5 pounds** in areas which have the average first killing frost after October 20 as shown in Figure 6-1. Nitrogen rates and timings for overseeding warm season grasses are not included in these rates.
- April 15 - May 15 applications should not be made until after complete green-up of turf.
- Nitrogen applications June through August should be coordinated with anticipated rainfall if irrigation is not available.

Use the lower end of the ranges for non-irrigated fields and the higher end of the ranges should be used on fields with irrigation.

Nitrogen rates towards the higher end of the ranges may be applied on heavily used fields to accelerate recovery, however per application and annual rates cannot be exceeded.

For overseeded warm season grasses, an additional 0.7 pounds per 1,000ft<sup>2</sup> of WSN may be applied in the Fall after the perennial ryegrass overseeding is well established. The WSN must be applied as two applications not to exceed 0.35 pounds per 1,000 ft<sup>2</sup> of nitrogen each, with a minimum of 15 days between applications. Additional WSN application of 0.5 pounds per 1,000 ft<sup>2</sup> may be made in February-March to overseeded perennial ryegrass if growth and color indicate need. Alternatively, split applications of 0.5 pounds of nitrogen per 1,000 ft<sup>2</sup> each with a minimum of 15 days between applications may be applied using a material containing slowly available nitrogen sources.



# Reference Materials and Notes

**Virginia Nutrient Management Standards and Criteria, Revised July 2014, Department of Conservation and Recreation, Division of Soil and Water Conservation**

**ESRI Aerial Photography**

# Fertilizer Application Records

Customer Information					Management Area Information			
Name:	City of Winchester				Management Area ID:	Harvest Ridge Field		
Address:	805 Crestview Terrace				Management Area Size:	43,560 sq ft		
	Winchester, VA 22601				Plant Species:	Tall Fescue		
Phone #:	703-777-0343				Notes:			
Date (M/D/Y)	Supervisor/Applicator	Weather Conditions			Fertilizer Analysis	Rate	Amount Fertilizer Used	Application Equipment Used
		Temp	Wind Speed	Precip				
When was the last time your fertilizer equipment was calibrated??? For information on calibration see Chapter 10 of the "Urban Nutrient Management Handbook". Available for download at <a href="http://pubs.ext.vt.edu/430/430-350/430-350.html">http://pubs.ext.vt.edu/430/430-350/430-350.html</a>								

## SOIL ANALYSIS

Client : TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	Grower : City of Winchester NMPs  PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 29 of 30
--	--	---

Lab Number : 08494

Field Id :

Sample Id : Harvest Ridge

Test	Results	SOIL TEST RATINGS					Calculated Cation Exchange Capacity
		Very Low	Low	Medium	Optimum	Very High	
Soil pH	7.0						<b>11.8</b> meq/100g
Buffer pH							
Phosphorus (P)	44 ppm						<b>Calculated Cation Saturation</b> %K 5.0 %Ca 85.0 %Mg 10.2 %H 0.0 Hmeq 0.0  <b>K : Mg Ratio</b> 0.50 <b>Ca : Mg Ratio</b> 8.33
Potassium (K)	232 ppm						
Calcium (Ca)	2007 ppm						
Magnesium (Mg)	144 ppm						
Sulfur (S)							
Boron (B)							
Copper (Cu)							
Iron (Fe)							
Manganese (Mn)							
Zinc (Zn)							
Sodium (Na)							
Soluble Salts							
Organic Matter	5.6 % ENR 145						
Nitrate Nitrogen							

## SOIL FERTILITY GUIDELINES

Crop : Lawn

Rec Units: LB/1000 SF

(lbs)	LIME	(tons)	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	Mg	S	B	Cu	Mn	Zn	Fe
0			4.0	0.5	0	0						
Crop :												Rec Units:

Comment :

*Pauric McGroary*

**SOIL ANALYSIS**

Client : TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	Grower : City of Winchester NMPs  PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 30 of 30
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Lab Number : 08494

Field Id :

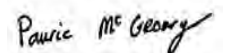
Sample Id : Harvest Ridge

SUGGESTED FERTILIZATION PROGRAM							
First Application		Second Application		Third Application		Fourth Application	
#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer
8	16-4-8	8	16-4-8	6	21-3-7		

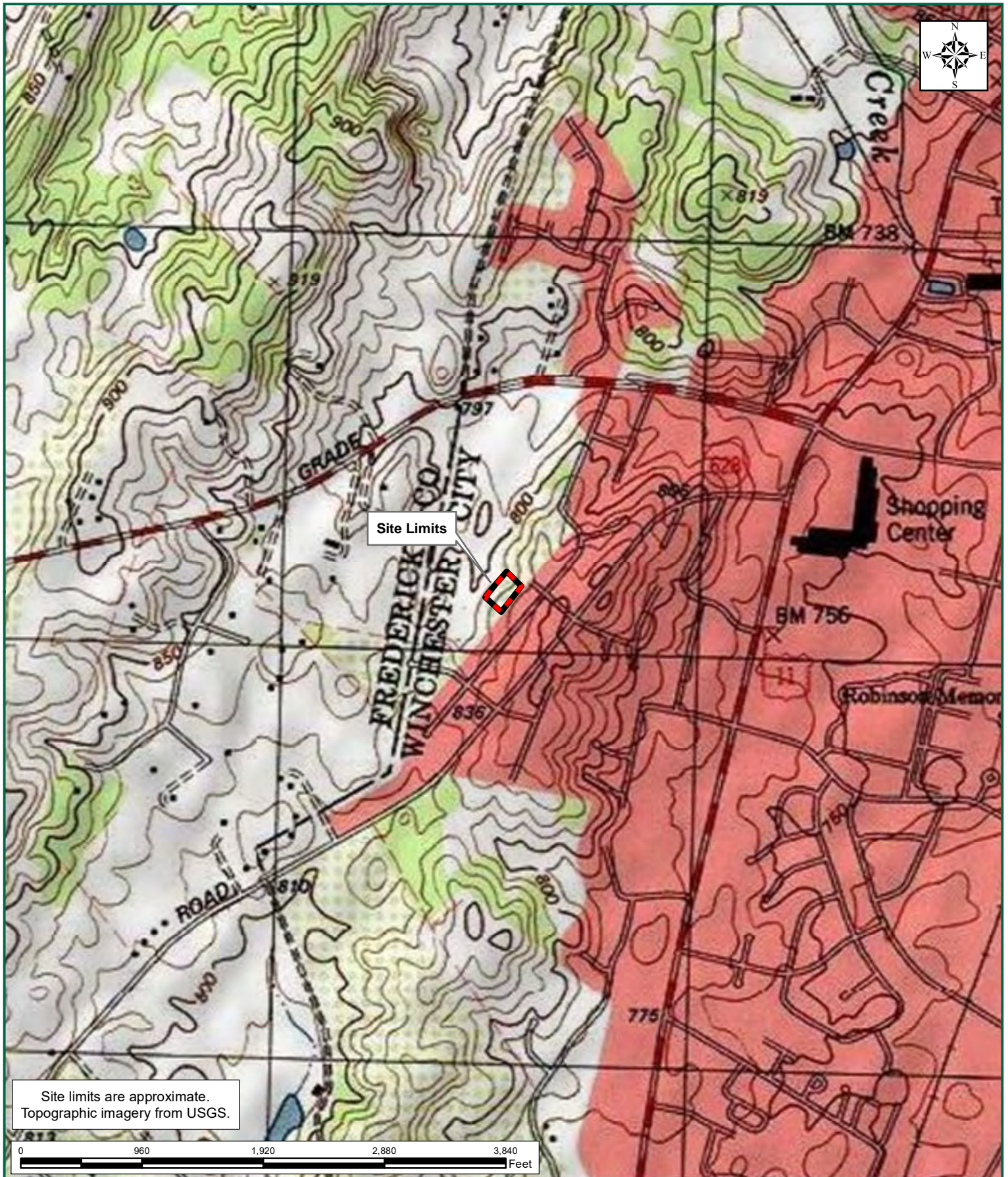
Comments:

**Lawn**

The amount of fertilizer recommended on the first page is the total amount needed for the entire growing season. Split into 3-4 applications to keep the lawn green and prevent fertilizer loss. You should not apply more than 0.7 lbs of soluble nitrogen per 1000 square feet in a 30 day period. Or more than 0.9 lbs of nitrogen per 1000 square feet if you are using a slow or controlled release product in a 30 day period. Custom blend is best to meet exactly the requirement, if this is impossible, the above specific fertilizer application is a general guideline, if the specified grades can not be found, replace with fertilizer having similar N:P:K ratio. The best time to apply fertilizer for cool season grass (bluegrass, fescue, ryegrass) is in the Fall when the grass is growing. For Mid-Atlantic region the time is from late August to November. For Northeast region the time is from mid August to October. Fall application should start as soon as the day time high temperature is below 80-85F, apply with the interval of one month. If you start application late in the Fall and do not finish all three applications, repeat the same applications in the Fall of next year. Spring application is recommended when exceptional fertilizer loss due to heavy spring rain leaching and the grasses look pale green. Spring application can start as soon as the grass starts to grow in April. In the case of exceptional warm spring, the application can be made earlier.







Site limits are approximate.  
Topographic imagery from USGS.

**WINCHESTER NUTRIENT MANAGEMENT PLANS - HARVEST RIDGE PARK**  
 CITY OF WINCHESTER, VIRGINIA  
**FIGURE 1: VICINITY MAP**

**TIMMONS GROUP**  
 YOUR VISION ACHIEVED THROUGH OURS.

TIMMONS GROUP JOB NUMBER: 36284.007  
 PROJECT STUDY LIMITS: 1.0 ACRES  
 LATITUDE: 39° 09' 32.5" N  
 LONGITUDE: 78° 11' 33.1" W

U.S.G.S. QUADRANGLE(S): WINCHESTER  
 DATE(S): 2013  
 WATERSHED(S): CONOCOHEAGUE-OPEQUON  
 HYDROLOGIC UNIT CODE(S): 02070004

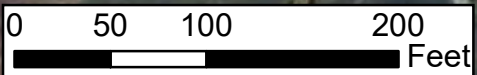
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**Legend**

-  Project Study Limits - 1.0 Acres
-  NHD Streams
-  National Wetland Inventory



Project Limits are approximate.  
 NWI from US Fish and Wildlife Service.  
 National Hydrography Dataset from USGS.  
 Aerial imagery from ESRI online.



# TIMMONS GROUP

WINCHESTER NUTRIENT MANAGEMENT PLANS - HARVEST RIDGE PARK  
 CITY OF WINCHESTER, VIRGINIA

FIGURE 2: ENVIRONMENTAL INVENTORY MAP

THIS DRAWING PREPARED AT THE  
 CORPORATE OFFICE  
 1001 Boulders Parkway, Suite 300 / Richmond, VA 23225  
 TEL 804.202.6500 FAX 804.560.7648 www.timmons.com

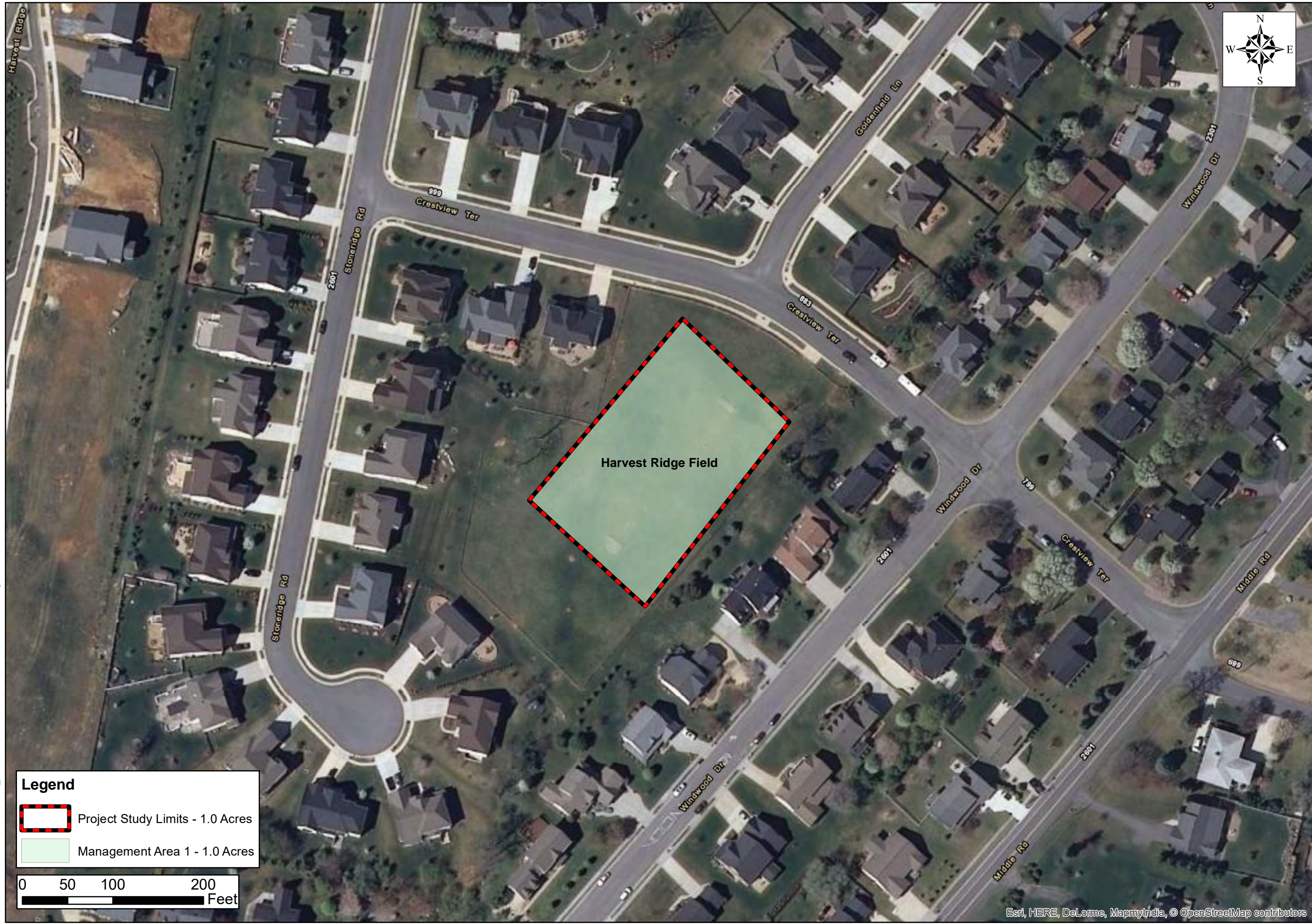
YOUR VISION ACHIEVED THROUGH OURS	
Site Development	Residential
Infrastructure	Technology
Environmental	
DATE	REVISION DESCRIPTION
03/10/2016	
DRAWN BY	
B. NORRIS	
DESIGNED BY	
B. NORRIS	
CHECKED BY	
E. VIRTS	
SCALE	
1" = 100'	

JOB NUMBER  
 36284.007

SHEET NO.  
 1 OF 1

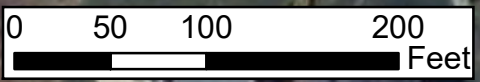
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**Legend**

- Project Study Limits - 1.0 Acres
- Management Area 1 - 1.0 Acres



**TIMMONS GROUP**

WINCHESTER NUTRIENT MANAGEMENT PLANS - HARVEST RIDGE PARK  
CITY OF WINCHESTER, VIRGINIA

**FIGURE 3: NUTRIENT MANAGEMENT AREAS MAP**

JOB NUMBER  
36284.007

SHEET NO.  
1 OF 1

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CORPORATE OFFICE  
1001 Boulders Parkway, Suite 300 / Richmond, VA 23225  
TEL 804.202.6500 FAX 804.560.7648 www.timmons.com

Site Development | Residential | Infrastructure | Technology | Environmental

DATE	REVISION DESCRIPTION
03/30/2016	

DRAWN BY  
B. NORRIS

DESIGNED BY  
B. NORRIS

CHECKED BY  
E. VIRTS

SCALE  
1" = 100'

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Matthew J. Strickler  
Secretary of Natural Resources

Clyde E. Cristman  
Director



Rochelle Altholz  
Deputy Director of  
Administration and Finance

Russell W. Baxter  
Deputy Director of  
Dam Safety & Floodplain  
Management and Soil & Water  
Conservation

Thomas L. Smith  
Deputy Director of Operations

**COMMONWEALTH of VIRGINIA**  
DEPARTMENT OF CONSERVATION AND RECREATION

Mr. Lambert  
Rouss City Hall, 15 N Cameron St.  
Winchester VA, 22601

4/17/2019

Subject: Harvest Ridge Park Nutrient Management Plan Review

The following nutrient management plan has been reviewed by Nick Yakish and confirmed by the Virginia Department of Conservation & Recreation to be developed in accordance with the Code of Virginia 10.1-104.2. Please note that this plan has not been reviewed for compliance with more restrictive requirements from other specific legislative, regulatory or incentive programs.

Plan Name	Planner	Acres	Start Date	Expiration Date
Harvest Ridge Park	Parker Osterloh	1.0	3/15/2019	3/15/2022

A copy of this letter should be kept with your nutrient management plan. Initiation of plan revision is recommended by the Department to occur at least six months prior to the expiration date. If you have any questions concerning this letter or reviews, please contact me via phone or email.

Sincerely,

A handwritten signature in black ink, appearing to read 'Nick Yakish'.

Nick Yakish  
Urban Nutrient Management Coordinator  
Department of Conservation and Recreation  
600 East Main St., 24<sup>th</sup> Floor  
Richmond, Virginia 23219  
(804) 389-5439  
nicholas.yakish@dcr.virginia.gov

600 East Main Street, 24<sup>th</sup> Floor | Richmond, Virginia 23219 | 804-786-6124

*State Parks • Soil and Water Conservation • Outdoor Recreation Planning  
Natural Heritage • Dam Safety and Floodplain Management • Land Conservation*



# Nutrient Management Plan

## Jim Barnett Park

Prepared For:

Tommy Lambert  
City of Winchester  
Rouss City Hall, 15 N. Cameron Street  
Winchester, VA 22601  
540-667-1815

Prepared By:

Parker Osterloh, Timmons Group  
1001 Boulders Parkway, Suite 300  
Richmond, VA 23225  
804-200-6457  
Certification Code: #920  
Total Managed Area Acreage: 13.1

The purpose of this Nutrient Management Plan is to ensure minimum movement of Nitrogen and phosphorous from the specified area of application to surface and groundwaters where they can potentially have a detrimental effect on water quality as well as ensuring plants have optimum soil nutrient availability for maximum productivity and quality. By following this soil test based plan you are helping to protect waters of the Chesapeake Bay.

If you have any questions, please contact your plan writer, local Virginia Cooperative Extension Agent, or the Department of Conservation and Recreation Nutrient Management Program.

# Nutrient Management Plan For:

## Jim Barnett Park

### Landowner Information:

Company Name	City of Winchester
Customer Name	Tommy Lambert
Mailing Address	Rouss City Hall, 15 N. Cameron Street
City, State Zip	Winchester, VA 22601
Phone	540-667-1815
Email	Thomas.lambert@winchesterva.gov

### Planner Information:

Planner Name	Parker Osterloh
Mailing Address	1001 Boulders Parkway, Suite 300
City, State Zip	Richmond, VA 23225
Phone	804-200-6457
Fax	804-560-1016
Email	Parker.osterloh@timmons.com
Certification Code	#920

### Location Information:

Physical Address	1001 East Cork Street
City, State Zip	Winchester, VA 22601
Latitude	39° 10' 27.9" N
Longitude	78° 09' 06.2" W
VAHU6 Watershed Code	PU17 Abrams Creek
County	City of Winchester

### Acreage:

Total	570,636 square feet (13.1 acres)
Management Area 1	383,328 square feet (8.8 acres)
Management Area 2	141,134 square feet (3.24 acres)
Management Area 3	41,817 square feet (0.96 acres)

Plan Start Date	3/15/2019
Plan End Date	3/15/2022

Planner Signature:



Nutrient Management Plan  
Jim Barnett Park  
3/15/2019

# Narrative

This nutrient management plan has been prepared by Timmons Group, on behalf of the City of Winchester. Jim Barnett Park is located on East Cork Street in Winchester, Virginia, east of South Pleasant Valley Road and west of Interstate I-81 (see [Figure 1: Vicinity Map](#)). The park has eight athletic fields for softball, baseball, and multi-purpose uses such as soccer and football. The site is relatively flat with a few areas gently sloping towards the central portion of the park. No wetlands were found to be present within the site limits during the January 31, 2019 site visit and no wetlands or streams were depicted within the site limits as shown on [Figure 2: Environmental Inventory Map](#). There were no wells, subsurface tile drains, springs, sinkholes, rock outcrops, land with slopes steeper than 15%, or qualifying soil types observed onsite. Therefore, no environmentally sensitive areas were identified onsite. However, it was noted that a stream channel runs behind the northeast side of Eagles Field and therefore, special attention should be paid to this area when applying fertilizer to avoid product being broadcast onto the surrounding slope where nutrients could runoff.

Using aerial photography and through discussions with City of Winchester staff, a 13.1-acre area (568,378 sq ft) was identified as managed turf where fertilizer is applied. Managed turf on Bridgeforth Field, Preston Multi-Purpose Field, Henkel Harris Field, T-Ball Field, Eagles Field, and the infield of Yost Field is comprised of cool season grasses. Managed turf on Bodie Grim Field, Rotary Field, and the outfield of Yost Field is comprised of a warm season grass.

This plan is effective for three years (until March 15, 2022) or until significant changes to maintenance practices occur. Should the City of Winchester decide to fertilize any locations within Jim Barnett Park outside of these managed areas, this nutrient management plan should be updated with recommendations for the additional area(s). Other significant changes would include: changing turf species in the athletic fields, renovating an athletic field and the existing underlying soil, creation of an additional athletic field, expansion of the area to be included under this nutrient management plan, or other changes that could alter nutrient recommendations and timing.

Three management areas were determined for Jim Barnett Park. Management Area 1 (Bridgeforth, Yost Infield, Preston Multi-purpose, Henkel Harris, T-Ball, and Eagles fields), Management Area 2 (Bodie Grim and Rotary fields), and Management Area 3 (Yost Outfield) are shown on [Figure 3: Nutrient Management Areas Map](#). Based on the City of Winchester, Virginia average first killing frost date of October 15th (Fall), the average last killing frost date of April 15th (Spring), and the cool season turf identified in Management Area 1, fertilizer applications on this management area should occur within the Cool Season Application Period of March 4th to November 26th. Based on those same killing frost dates and the warm season turf

identified in Management Area 2 and Management Area 3, fertilizer applications on these management areas should occur within the warm season application period of April 15th to September 15th. Nutrient application instructions are identified in the nutrient management worksheet of this plan.

Applications of nutrients should not occur on frozen or snow-covered ground. Any fertilizer that makes its way onto impervious surfaces should be swept or blown back into pervious turfgrass-covered areas. Do not use fertilizers as ice melt. Nutrient applications should not be completed when significant runoff producing events are anticipated.

**Every fertilizer application should be recorded in the record sheet provided.** Any questions or concerns with fertilizer products or record keeping should be brought to the plan writer's attention.

# Nutrient Management Worksheets

Property:		Jim Barnett Park (Bridgeforth, Yost Infield, Preston, Henkel Harris, T-Ball, and Eagles fields)								
Prepared:		3/15/19				Species:		Cool Season		
Expires:		3/15/22								
Management Area	Application Month/Day	# of Apps	Application Interval	Fertilizer Product	% Slow Release N	NPK Value of Fertilizer Product	Total NPK lbs/1,000 square feet	Required lbs/1,000 ft <sup>2</sup> of Fertilizer Product to Meet Target Application Rate	Total Required lbs of fertilizer product in Management Area 1	
						N - P <sub>2</sub> O <sub>5</sub> - K <sub>2</sub> O	N - P <sub>2</sub> O <sub>5</sub> - K <sub>2</sub> O			
Management Area 1: T-Ball and Preston fields acreage = approximately  8.8 Maximum 4.2-0.75-1	4/15 - 5/15	1		custom blend SCU (10-15-10)	25%	10 - 15 - 10	0.50 - 0.75 - 0.50	5.00	1917	
	6/1 - 6/15	1		SCU (30-0-10)	50%	30 - 0 - 10	0.50 - 0.00 - 0.17	1.67	639	
	8/15 - 8/31	1		custom blend SCU (10-15-10)	25%	10 - 15 - 10	0.50 - 0.00 - 0.50	5.00	1917	
	9/15 - 11/30	3	> 30 days	SCU (30-0-10)	50%	30 - 0 - 10	0.90 - 0.00 - 0.30	3.00	1150	
	<b>*Recommended Total Annual NPK Application</b>							<b>4.2 - 0.75 - 2.07</b>		
Management Area 2: Bridgeforth, Yost Infield, Henkel Harris, and Eagles fields acreage = approximately  3.24 Maximum 4.5-1-1	4/15 - 5/15	1		SCU (30-0-10)	50%	30 - 0 - 10	0.50 - 0.00 - 0.17	1.67	235	
	6/1 - 6/15	1		custom blend SCU (10-10-10)	25%	10 - 10 - 10	0.50 - 0.50 - 0.50	5.00	706	
	8/15 - 8/31	1		custom blend SCU (10-10-10)	25%	10 - 10 - 10	0.50 - 0.50 - 0.50	5.00	706	
	9/15 - 11/30	3	> 30 days	SCU (30-0-10)	50%	30 - 0 - 10	0.90 - 0.00 - 0.30	3.00	423	
	<b>*Recommended Total Annual NPK Application</b>							<b>4.2 - 1.00 - 2.07</b>		
The annual application of total nitrogen <b>should not exceed 4.5 lbs N per 1000 sq ft</b> (maximum for intensively managed cool season athletic fields). During the months of September, October, and November, total nitrogen should not exceed 0.9 lbs per 1000 sq ft of slow or controlled release fertilizer sources or 0.7 lbs per 1000 sq ft of water soluble nitrogen (WSN) per application, with a minimum of 30 days between applications. During the months of April, May, June, and August, total nitrogen should not exceed 0.5 lbs per 1000 sq ft per application, with a minimum of 30 days between applications. Applications should fall within the cool season application window identified in the narrative of this plan.										
Sulfur Recommendations	Note: Do not apply more than 5 lbs per 1000 sq ft per application or more than 10 lbs of elemental sulfur per 1000 sq ft per year. Timing between applications should be minimum of 3 months. Warm temperature and moist soil are needed for sulfur to reduce soil pH.									
	<u>Preston</u> : To reduce soil pH apply <b>12.5 pounds of elemental sulfur per 1000 sq ft</b> . Soil tests can be conducted annually to determine if additional sulfur or lime is needed to maintain the soil pH during years 2 and 3 of this nutrient management plan implementation.									
	<u>Yost Infield</u> : To reduce soil pH apply <b>17.5 pounds of elemental sulfur per 1000 sq ft</b> . Soil tests can be conducted annually to determine if additional sulfur or lime is needed to maintain the soil pH during years 2 and 3 of this nutrient management plan implementation.									
	<u>Henkel Harris</u> : To reduce soil pH apply <b>10 pounds of elemental sulfur per 1000 sq ft</b> . Soil tests can be conducted annually to determine if additional sulfur or lime is needed to maintain the soil pH during years 2 and 3 of this nutrient management plan implementation.									
	<u>T-Ball Field</u> : To reduce soil pH apply <b>2.5 pounds of elemental sulfur per 1000 sq ft</b> . Soil tests can be conducted annually to determine if additional sulfur or lime is needed to maintain the soil pH during years 2 and 3 of this nutrient management plan implementation.									
	<u>Bridgeforth</u> : To reduce soil pH apply <b>2.5 pounds of elemental sulfur per 1000 sq ft</b> . Soil tests can be conducted annually to determine if additional sulfur or lime is needed to maintain the soil pH during years 2 and 3 of this nutrient management plan implementation.									
<u>Eagles</u> : require no sulfur at this time.										

Property:	Jim Barnett Park (Bodie Grim, Rotary, and Yost Outfield)								
Prepared:	3/15/19						Species:	Warm Season	
Expires:	3/15/22								
Management Area	Application Month/Day	# of Apps	Application Interval	Fertilizer Product	% Slow Release N	NPK Value of Fertilizer Product	Total NPK lbs/1,000 square feet	Required lbs/1,000 ft <sup>2</sup> of Fertilizer Product to Meet Target Application Rate	Total Required lbs of fertilizer product in Management Area 1
						N - P <sub>2</sub> O <sub>5</sub> - K <sub>2</sub> O	N - P <sub>2</sub> O <sub>5</sub> - K <sub>2</sub> O		
Management Area 3: Bodie Grim Field approximate acreage: 0.96  Maximum 4-0-1	4/15 - 5/15	2	> 15 days	custom blend SCU (10-15-10)	25%	10 - 15 - 10	0.50 - 0.00 - 0.50	5.00	209
	6/1-6/30	1		SCU (30-0-10)	50%	30 - 0 - 10	0.50 - 0.00 - 0.17	1.67	70
	7/1-8/31	2	> 30 days	SCU (30-0-10)	50%	30 - 0 - 10	1.00 - 0.00 - 0.33	3.33	139
	*Recommended Total Annual NPK Application							3.5 - 0.00 - 1.83	
<b>Notes</b>	The annual application of total nitrogen <b>should not exceed 4.0 lbs N per 1000 sq ft</b> (maximum for intensively managed cool season athletic fields). During the								
<b>Sulfur Recommendations</b>	<p>* Recommendations are targeted to bring soil pH to 6.2 for optimal growth of turfgrass *</p> <p>Note: Do not apply more than 5 lbs of elemental sulfur per 1000 sq ft per application or more than 10 lbs of elemental sulfur per 1000 sq ft per year. Timing between applications should be minimum of 3 months. Warm temperature and moist soil are needed for sulfur to reduce soil pH.</p> <p><u>Rotary</u>: To reduce soil pH apply <b>7.5 pounds of elemental sulfur</b> per 1000 sq ft. Soil tests can be conducted annually to determine if additional sulfur or lime is</p> <p><u>Yost Outfield</u>: To reduce soil pH apply 10 pounds of elemental sulfur per 1000 sq ft. Soil tests can be conducted annually to determine if additional sulfur or lime is needed to maintain the soil pH during years 2 and 3 of this nutrient management plan implementation.</p> <p><u>Bodie Grim</u>: To reduce soil pH apply 7.5 pounds of elemental sulfur per 1000 sq ft. Soil tests can be conducted annually to determine if additional sulfur or lime is needed to maintain the soil pH during years 2 and 3 of this nutrient management plan implementation.</p>								

# Soil Test Summary

<b>Customer Name:</b>	City of Winchester
<b>Testing Lab:</b>	Waypoint Analytical
<b>Sample Date:</b>	January 29, 2019
<b>Planner Name</b>	Parker Osterloh, Timmons Group
<b>Certification Number</b>	#920

Managed Area ID	AREA (sq ft)	Soil pH	Buffer pH	Lab Test P (ppm)	VT (H/M/L)	Lab Test K (ppm)	VT (H/M/L)	Species
Bridgeforth Field	103,215	7.1	-	19	H-	96	H-	Tall Fescue/Kentucky Bluegrass mixture
Rotary Field	41,626	7.5	-	22	H-	83	M+	Bermudagrass
Yost Field - Infield	15,681	7.9	-	32	H	60	M	Tall Fescue/Kentucky Bluegrass mixture
Yost Field -Outfield	25,954	7.6	-	36	H	95	H-	Bermudagrass
Bodie Grim Field	115,380	7.5	-	12	M	116	H	Bermudagrass
Preston Multi-Purpose Field	124,045	7.7	-	15	M	86	M+	Tall Fescue/Kentucky Bluegrass mixture
Henkel Harris Field	48,948	7.6	-	17	M+	100	H-	Tall Fescue
T-Ball Field	15,552	7.3	-	10	M-	78	M+	Tall Fescue
Eagles Field	77,977	6.7	-	21	H-	100	H-	Tall Fescue

<b>Notes:</b>	H = High, M = Medium, L = Low
---------------	-------------------------------

# Soil Test Reports

Soil samples were taken from the managed turfgrass at each of the athletic fields at Jim Barnett Park on January 31, 2019. Soil samples were analyzed by Waypoint Analytical (formerly A&L Eastern Laboratories). Standard soil test results provide values for pH, phosphorus, calcium, magnesium, potassium, cation exchange capacity, and organic matter. The soil samples collected are valid for the life of this plan (three years) or upon a major renovation or redesign of the park, whichever occurs sooner.

## **A. Management Area 1 - 8.8 acres (Bridgeforth, Yost Infield, Preston, Henkel Harris, T-Ball, and Eagles fields)**

Phosphorus levels ranged between High- (H-) and High (H) for all athletic fields. Applications of phosphorus are recommended, not to exceed 1.0 lb/1,000 sq ft annually. See additional notes on the nutrient application worksheet. Potassium levels ranged from Medium (M) to High- (H-) for all athletic fields. Applications of potassium are recommended, at approximately 1.0 lb/1,000 sq ft annually. This potassium recommendation exceeds that derived from the soil analysis. However, potassium is not an environmentally regulated nutrient and application of surplus potassium will only increase strength and vigor of turfgrass roots. Nitrogen applications are recommended as 4.2 lbs/1,000 sq ft annually based on maximum nitrogen per application rates. The annual maximum nitrogen application rate for cool season grasses on intensively managed athletic fields is 4.2 lbs/1,000 sq ft (see the Nutrient Management and Individual Field Application Worksheets for additional detail).

## **B. Management Area 2 - 3.24 acres (Bodie Grim and Rotary fields)**

Phosphorus levels were High- (H-) for both athletic fields. Applications of phosphorus are recommended, not to exceed 1.0 lb/1,000 sq ft annually. See additional notes on the nutrient application worksheet. Potassium levels were High- (H-) for both athletic fields. Applications of potassium are recommended, at approximately 1.0 lb/1,000 sq ft annually. Nitrogen applications are recommended as 4.0 lbs/1,000 sq ft annually based on maximum nitrogen per application rates. The annual maximum nitrogen application rate for warm season grasses on intensively managed athletic fields is 4.0 lbs/1,000 sq ft (see the Nutrient Management and Individual Field Application Worksheets for additional detail).

## **C. Management Area 3 - 0.96 acres (Yost Outfield)**

The phosphorus level was Very High (VH) for the athletic field. Applications of phosphorus are not recommended. See additional notes on the nutrient application worksheet. The potassium level was High- (H-) for the athletic field. Applications of potassium are recommended, at approximately 1.0 lb/1,000 sq ft annually. Nitrogen applications are recommended as 3.5 lbs/1,000 sq ft annually based on maximum nitrogen per application rates. The annual maximum



nitrogen application rate for warm season grasses on intensively managed athletic fields is 4.0 lbs/1,000 sq ft (see the Nutrient Management Worksheet for additional detail).

# Standards and Criteria

## Section VI. Turfgrass Nutrient Recommendations for Home Lawns, Office Parks, Public Lands and Other Similar Residential/Commercial Grounds

### Definitions

For the purposes of this section, the following definitions, as presented by the Association of American Plant Food Control Officials (AAPFCO), apply:

“Enhanced efficiency fertilizer” describes fertilizer products with characteristics that allow increased plant nutrient availability and reduce the potential of nutrient losses to the environment when compared to an appropriate reference product.

“Slow or controlled release fertilizer” means a fertilizer containing a plant nutrient in a form which delays its availability for plant uptake and use after application, or which extends its availability to the plant significantly longer than a reference “rapidly available nutrient fertilizer” such as ammonium nitrate, urea, ammonium phosphate or potassium chloride. A slow or controlled release fertilizer must contain a minimum of 15 percent slowly available forms of nitrogen.

“Water soluble nitrogen”, “WSN” and “readily available nitrogen” means: Water soluble nitrogen in either ammonical, urea, or nitrate form that does not have a controlled release, or slow response.

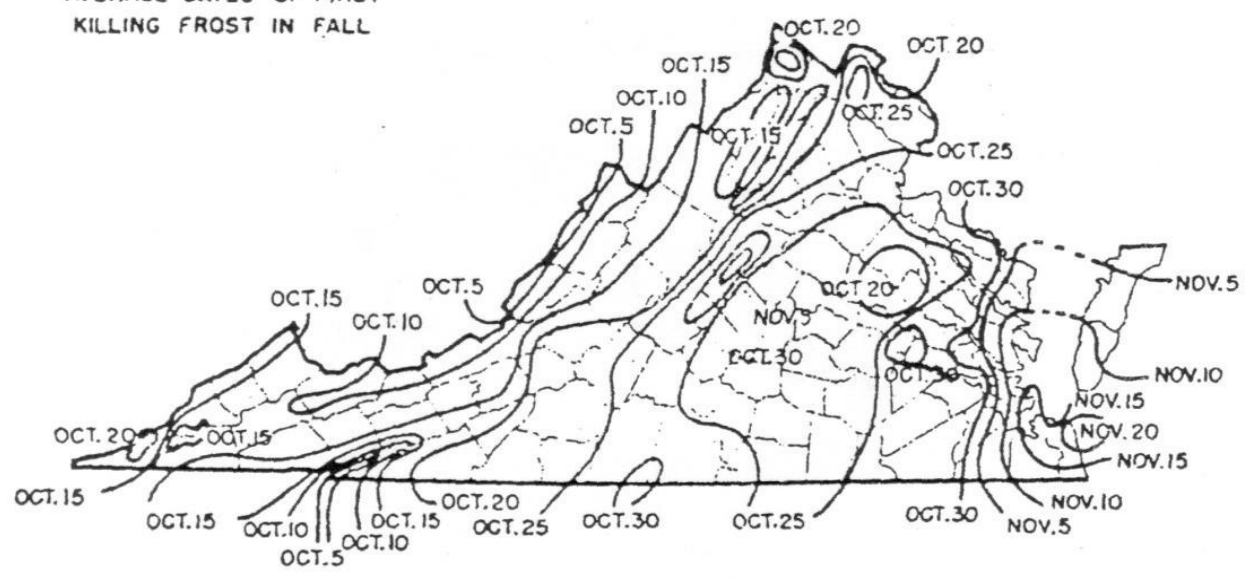
### Recommended Season of Application For Nitrogen Fertilizers - Applies to all Turf

A nitrogen fertilization schedule weighted toward fall application is recommended and preferred for agronomic quality and persistence of cool season turfgrass; however, the acceptable window of applications is much wider than this for nutrient management. The nutrient management recommended application season for nitrogen fertilizers to cool season turfgrasses begins six weeks prior to the last spring average killing frost date and ends six weeks past the first fall average killing frost date (see Figures 6-1 & 6-2). Applications of nitrogen during the intervening late fall and winter period should be avoided due to higher potential leaching or runoff risk, but where necessary, apply no more than 0.5 pounds per 1,000 ft<sup>2</sup> of water soluble nitrogen within a 30 day period. Higher application rates may be used during this late fall and winter period by using materials containing slowly available sources of nitrogen, if the water soluble nitrogen contained in the fertilizer does not exceed the recommended maximum of 0.5 pounds per 1,000 ft<sup>2</sup> rate. Do not apply nitrogen or phosphorus fertilizers when the ground is frozen.

The acceptable nitrogen fertilizer application season for non-overseeded warm season turfgrass begins no earlier than the last spring average killing frost date and ends no later than one month prior to the first fall average killing frost date (see Figures on next sheet).

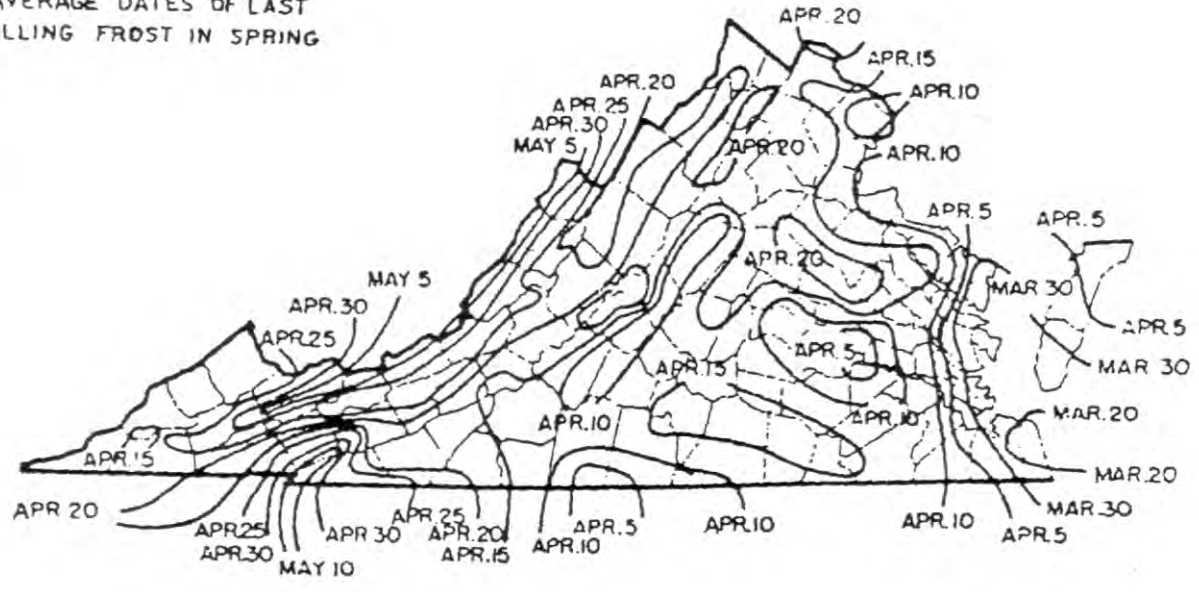
### VIRGINIA

AVERAGE DATES OF FIRST  
KILLING FROST IN FALL



### VIRGINIA

AVERAGE DATES OF LAST  
KILLING FROST IN SPRING



### **Per Application Rates**

Do not apply more than 0.7 pounds of water soluble nitrogen per 1,000 ft<sup>2</sup> within a 30 day period. For cool season grasses, do not apply more than 0.9 pounds of total nitrogen per 1,000 ft<sup>2</sup> within a 30 day period. For warm season grasses, do not apply more than 1.0 pounds of total nitrogen per 1,000 ft<sup>2</sup> within a 30 day period. Lower per application rates of water soluble nitrogen sources or use of slowly available nitrogen sources should be utilized on very permeable sandy soils, shallow soils over fractured bedrock, or areas near water wells.

### **Use of Slowly Available Forms of Nitrogen**

For slow or controlled release fertilizer sources, or enhanced efficiency fertilizer sources, no more than 0.9 pounds of nitrogen per 1,000 ft<sup>2</sup> may be applied to cool season grasses within a 30 day period and no more than 1.0 pounds of nitrogen per 1,000 ft<sup>2</sup> may be applied to warm season grasses within a 30 day period.

Provided the fertilizer label guarantees that the product can be used in such a way that it will not release more than 0.7 pounds of nitrogen per 1,000 ft<sup>2</sup> in a 30 day period, no more than 2.5 pounds of nitrogen per 1,000 ft<sup>2</sup> may be applied in a single application. Additionally, total annual applications shall not exceed 80 percent of the annual nitrogen rates for cool or warm season grasses.

### **Phosphorus and Potassium Nutrient Needs (Established Turf)**

Apply phosphorus (P<sub>2</sub>O<sub>5</sub>) and potassium (K<sub>2</sub>O) fertilizers as indicated necessary by a soil test using the following guidelines:

\* For the lower soil test level within a rating, use the higher side of the range and for higher soil test level

within a rating use the lower side of the recommendation range. (For example the recommendation for a

P<sub>2</sub>O<sub>5</sub> soil test level of L- would be 3 pounds per 1,000 ft<sup>2</sup>.)

Do not use high phosphorus ratio fertilizers such as 10-10-10 or 5-10-10, unless soil tests indicate phosph

orus availability below the M+ level.

### **Recommendations for Establishment of Turf**

These recommendations are for timely planted turfgrass, that is, the seed or vegetative material (sod, plugs, and /or sprigs), are planted at a time of the year when temperatures and moisture are adequate to maximize turfgrass establishment. These recommended establishment periods would be late summer to early fall for cool-season turfgrasses and late spring through mid-summer for warm-season turfgrasses.

## **Nitrogen Applications**

At the time of establishment, apply no more than 0.9 pounds per 1,000 ft<sup>2</sup> of total nitrogen for cool season grasses or 1.0 pounds per 1,000 ft<sup>2</sup> of total nitrogen for warm season grasses, using a material containing slowly available forms of nitrogen, followed by one or two applications beginning 30 days after planting, not to exceed a total of 1.8 pounds per 1,000 ft<sup>2</sup> total for cool season grasses and 2.0 pounds per 1,000 ft<sup>2</sup> for warm season grasses for the establishment period. Applications of WSN cannot exceed more than 0.7 pounds per 1,000 ft<sup>2</sup> within a 30 day period.

## **Phosphorus and Potassium Recommendations for Establishment**

\* For the lower soil test level within a rating, use the higher side of the range and for higher soil test level within a rating use the lower side of the recommendation range.

## **Nitrogen Management on Athletic Fields - Cool Season Grasses**

- This program is intended for those fields which are under heavy use.
- Nitrogen recommendations are based on the assumption that there is adequate soil moisture to promote good turf growth at the time of application. If no rainfall has occurred since the last application, further applications should be delayed until significant soil moisture is available.

### **Notes:**

- Soluble nitrogen rates of 0.25 pounds per 1,000 ft<sup>2</sup> or less which may be a component of a pesticide or minor element application may be applied any time the turf is actively growing, but must be considered with the total annual nitrogen application rate.
  - WSN = water soluble nitrogen; WIN = water insoluble nitrogen
- (a) Intensive managed areas must be irrigated.
  - (b) The beginning and ending dates for application of nitrogen shall be determined using guidance and frost date maps contained in the preceding Season of Application for Nitrogen section, using Figures 6-1 and 6-2.
  - (c) Rates up to 0.9 pounds per 1,000 ft<sup>2</sup> of total nitrogen can be applied using a material containing slowly available forms of nitrogen, with a minimum of 30 days between applications.
  - (d) Make this application only if turf use warrants additional nitrogen for sustaining desirable growth and /or color.

## **Nitrogen Management on Athletic Fields - Warm Season Grasses**

The following comments apply to both Naturally Occurring or Modified Sand based Fields and Predominantly Silt/Clay Soil Fields:

- Annual nitrogen rates for warm season grasses shall not exceed **4 pounds** in areas which have the average first killing frost on or before October 20, and shall not exceed **5 pounds** in areas which have the average first killing frost after October 20 as shown in Figure 6-1. Nitrogen rates and timings for overseeding warm season grasses are not included in these rates.
- April 15 - May 15 applications should not be made until after complete green-up of turf.
- Nitrogen applications June through August should be coordinated with anticipated rainfall if irrigation is not available.

Use the lower end of the ranges for non-irrigated fields and the higher end of the ranges should be used on fields with irrigation.

Nitrogen rates towards the higher end of the ranges may be applied on heavily used fields to accelerate recovery, however per application and annual rates cannot be exceeded.

For overseeded warm season grasses, an additional 0.7 pounds per 1,000ft<sup>2</sup> of WSN may be applied in the Fall after the perennial ryegrass overseeding is well established. The WSN must be applied as two applications not to exceed 0.35 pounds per 1,000 ft<sup>2</sup> of nitrogen each, with a minimum of 15 days between applications. Additional WSN application of 0.5 pounds per 1,000 ft<sup>2</sup> may be made in February-March to overseeded perennial ryegrass if growth and color indicate need. Alternatively, split applications of 0.5 pounds of nitrogen per 1,000 ft<sup>2</sup> each with a minimum of 15 days between applications may be applied using a material containing slowly available nitrogen sources.

# Reference Materials and Notes

**Virginia Nutrient Management Standards and Criteria, Revised July 2014, Department of Conservation and Recreation, Division of Soil and Water Conservation**

**ESRI Aerial Photography**



# Fertilizer Application Records

Fertilizer Application Records								
Customer Information				Management Area Information				
Name:	City of Winchester - Jim Barnett Park			Management Area ID:	Bridgeforth Field			
Address:	1001 East Cork Street			Management Area Size:	103,215 sq ft			
	Winchester, Virginia 22601			Plant Species:	Tall Fescue/Kentucky Bluegrass mixture			
Phone #:	540-667-1815			Notes:	Baseball field			
Date (M/D/Y)	Supervisor/Applicator	Weather Conditions			Fertilizer Analysis	Rate	Amount Fertilizer Used	Application Equipment Used
		Temp	Wind Speed	Precip				

When was the last time your fertilizer equipment was calibrated???  
 For information on calibration see Chapter 10 of the "Urban Nutrient Management Handbook".  
 Available for download at <http://pubs.ext.vt.edu/430/430-350/430-350.html>

# Fertilizer Application Records

Customer Information				Management Area Information				
Name:	City of Winchester - Jim Barnett Park			Management Area ID:	Rotary Field			
Address:	1001 East Cork Street			Management Area Size:	41,626 sq ft			
	Winchester, Virginia 22601			Plant Species:	Bermudagrass			
Phone #:	540-667-1815			Notes:	Softball field			
Date (M/D/Y)	Supervisor/Applicator	Weather Conditions			Fertilizer Analysis	Rate	Amount Fertilizer Used	Application Equipment Used
		Temp	Wind Speed	Precip				

When was the last time your fertilizer equipment was calibrated???

For information on calibration see Chapter 10 of the "Urban Nutrient Management Handbook".  
Available for download at <http://pubs.ext.vt.edu/430/430-350/430-350.html>

# Fertilizer Application Records

Customer Information				Management Area Information			
Name:	City of Winchester - Jim Barnett Park			Management Area ID:	Yost Infield		
Address:	1001 East Cork Street			Management Area Size:	15,681		
	Winchester, Virginia 22601			Plant Species:	Tall Fescue/Kentucky Bluegrass mixture		
				Notes:	Softball field		
Phone #:	540-667-1815						

Date (M/D/Y)	Supervisor/Applicator	Weather Conditions			Fertilizer Analysis	Rate	Amount Fertilizer Used	Application Equipment Used
		Temp	Wind Speed	Precip				

When was the last time your fertilizer equipment was calibrated???

For information on calibration see Chapter 10 of the "Urban Nutrient Management Handbook".  
 Available for download at <http://pubs.ext.vt.edu/430/430-350/430-350.html>

# Fertilizer Application Records

Customer Information				Management Area Information				
Name:	City of Winchester - Jim Barnett Park			Management Area ID:	Yost Outfield			
Address:	1001 East Cork Street			Management Area Size:	25,954 sq ft			
	Winchester, Virginia 22601			Plant Species:	Bermudagrass			
Phone #:	540-667-1815			Notes:	Softball field			
Date (M/D/Y)	Supervisor/Applicator	Weather Conditions			Fertilizer Analysis	Rate	Amount Fertilizer Used	Application Equipment Used
		Temp	Wind Speed	Precip				

When was the last time your fertilizer equipment was calibrated???

For information on calibration see Chapter 10 of the "Urban Nutrient Management Handbook".  
Available for download at <http://pubs.ext.vt.edu/430/430-350/430-350.html>

# Fertilizer Application Records

Customer Information				Management Area Information			
Name:	City of Winchester - Jim Barnett Park			Management Area ID:	Preston Multi-Purpose Field		
Address:	1001 East Cork Street			Management Area Size:	124,045 sq ft		
	Winchester, Virginia 22601			Plant Species:	Tall Fescue/Kentucky Bluegrass mixture		
Phone #:	540-667-1815			Notes:	Multi-purpose athletic field		

Date (M/D/Y)	Supervisor/Applicator	Weather Conditions			Fertilizer Analysis	Rate	Amount Fertilizer Used	Application Equipment Used
		Temp	Wind Speed	Precip				

When was the last time your fertilizer equipment was calibrated???

For information on calibration see Chapter 10 of the "Urban Nutrient Management Handbook".  
 Available for download at <http://pubs.ext.vt.edu/430/430-350/430-350.html>

# Fertilizer Application Records

Customer Information					Management Area Information			
Name:	City of Winchester - Jim Barnett Park				Management Area ID:	Henkel Harris Field		
Address:	1001 East Cork Street				Management Area Size:	48,948 sq ft		
	Winchester, Virginia 22601				Plant Species:	Tall Fescue		
Phone #:	540-667-1815				Notes:	Softball field		
Date (M/D/Y)	Supervisor/Applicator	Weather Conditions			Fertilizer Analysis	Rate	Amount Fertilizer Used	Application Equipment Used
		Temp	Wind Speed	Precip				

When was the last time your fertilizer equipment was calibrated???

For information on calibration see Chapter 10 of the "Urban Nutrient Management Handbook".  
Available for download at <http://pubs.ext.vt.edu/430/430-350/430-350.html>

## Fertilizer Application Records

Customer Information				Management Area Information				
Name:	City of Winchester - Jim Barnett Park			Management Area ID:	T-Ball Field			
Address:	1001 East Cork Street			Management Area Size:	15,552 sq ft			
	Winchester, Virginia 22601			Plant Species:	Tall Fescue			
Phone #:	540-667-1815			Notes:	T-Ball field			
Date (M/D/Y)	Supervisor/Applicator	Weather Conditions			Fertilizer Analysis	Rate	Amount Fertilizer Used	Application Equipment Used
		Temp	Wind Speed	Precip				

When was the last time your fertilizer equipment was calibrated???

For information on calibration see Chapter 10 of the "Urban Nutrient Management Handbook".  
 Available for download at <http://pubs.ext.vt.edu/430/430-350/430-350.html>



# Fertilizer Application Records

Customer Information				Management Area Information			
Name:	City of Winchester - Jim Barnett Park			Management Area ID:	Eagles Field		
Address:	1001 East Cork Street			Management Area Size:	77,977 sq ft		
	Winchester, Virginia 22601			Plant Species:	Tall Fescue		
Phone #:	540-667-1815			Notes:	Softball field		

Date (M/D/Y)	Supervisor/Applicator	Weather Conditions			Fertilizer Analysis	Rate	Amount Fertilizer Used	Application Equipment Used
		Temp	Wind Speed	Precip				

When was the last time your fertilizer equipment was calibrated???

For information on calibration see Chapter 10 of the "Urban Nutrient Management Handbook".  
Available for download at <http://pubs.ext.vt.edu/430/430-350/430-350.html>

# Fertilizer Application Records

Customer Information				Management Area Information				
Name:	City of Winchester - Jim Barnett Park			Management Area ID:	Bodie Grim Field			
Address:	1001 East Cork Street			Management Area Size:	115,380 sq ft			
	Winchester, Virginia 22601			Plant Species:	Bermudagrass			
Phone #:	540-667-1815			Notes:	Baseball field			
Date (M/D/Y)	Supervisor/Applicator	Weather Conditions			Fertilizer Analysis	Rate	Amount Fertilizer Used	Application Equipment Used
		Temp	Wind Speed	Precip				

When was the last time your fertilizer equipment was calibrated???

For information on calibration see Chapter 10 of the "Urban Nutrient Management Handbook".  
Available for download at <http://pubs.ext.vt.edu/430/430-350/430-350.html>

## SOIL ANALYSIS

Client : TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	Grower : City of Winchester NMPs  PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 3 of 30
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Lab Number : 08480

Field Id :

Sample Id : Yost Outfield

Test	Results	SOIL TEST RATINGS					Calculated Cation Exchange Capacity
		Very Low	Low	Medium	Optimum	Very High	
Soil pH	7.6						21.7 meq/100g
Buffer pH							
Phosphorus (P)	87 ppm						<b>Calculated Cation Saturation</b> %K 1.6 %Ca 92.2 %Mg 6.1 %H 0.0 Hmeq 0.0  <b>K : Mg Ratio</b> 0.23 <b>Ca : Mg Ratio</b> 15.11
Potassium (K)	134 ppm						
Calcium (Ca)	4003 ppm						
Magnesium (Mg)	160 ppm						
Sulfur (S)							
Boron (B)							
Copper (Cu)							
Iron (Fe)							
Manganese (Mn)							
Zinc (Zn)							
Sodium (Na)							
Soluble Salts							
Organic Matter	4.8 % ENR 122						
Nitrate Nitrogen							

## SOIL FERTILITY GUIDELINES

Crop : Lawn

Rec Units: LB/1000 SF

(lbs)	LIME	(tons)	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	Mg	S	B	Cu	Mn	Zn	Fe
0			4.0	0	0	0						
Crop :												Rec Units:

Comment :

*Pauric McGroary*

**SOIL ANALYSIS**

Client : TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	Grower : City of Winchester NMPs  PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 4 of 30
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Lab Number : 08480

Field Id :

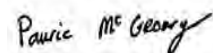
Sample Id : Yost Outfield

SUGGESTED FERTILIZATION PROGRAM							
First Application		Second Application		Third Application		Fourth Application	
#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer
12	10-0-20	8	16-4-8	8	16-4-8		

Comments:

**Lawn**

- Cation Exchange Capacity may be over-estimated due to high pH and free lime in the soil.
- The amount of fertilizer recommended on the first page is the total amount needed for the entire growing season. Split into 3-4 applications to keep the lawn green and prevent fertilizer loss. You should not apply more than 0.7 lbs of soluble nitrogen per 1000 square feet in a 30 day period. Or more than 0.9 lbs of nitrogen per 1000 square feet if you are using a slow or controlled release product in a 30 day period. Custom blend is best to meet exactly the requirement, if this is impossible, the above specific fertilizer application is a general guideline, if the specified grades can not be found, replace with fertilizer having similar N:P:K ratio. The best time to apply fertilizer for cool season grass (bluegrass, fescue, ryegrass) is in the Fall when the grass is growing. For Mid-Atlantic region the time is from late August to November. For Northeast region the time is from mid August to October. Fall application should start as soon as the day time high temperature is below 80-85F, apply with the interval of one month. If you start application late in the Fall and do not finish all three applications, repeat the same applications in the Fall of next year. Spring application is recommended when exceptional fertilizer loss due to heavy spring rain leaching and the grasses look pale green. Spring application can start as soon as the grass starts to grow in April. In the case of exceptional warm spring, the application can be made earlier.
- To reduce soil pH apply 2.5 pounds of elemental sulfur per 1000 square feet for every 0.1 of pH unit above 7.2. For example, a soil pH of 7.4 requires 5 pounds of elemental sulfur (0.2 \* 2.5). Do not apply more than 5 lbs per 1000 square feet per application or more than 10 lbs of elemental sulfur per 1000 square feet per year. Timing between applications should be minimum of 3 months. Warm temperature and moist soil are needed for sulfur to reduce soil pH. If sulfur is applied in winter or under drought conditions, it will take longer for the the soil pH to be lowered.
- Use ammonium sulfate as all or portion of the N requirement to reduce pH.



## SOIL ANALYSIS

Client : TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	Grower : City of Winchester NMPs  PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 5 of 30
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Lab Number : 08481

Field Id :

Sample Id : Rotary Field

Test	Results	SOIL TEST RATINGS					Calculated Cation Exchange Capacity
		Very Low	Low	Medium	Optimum	Very High	
Soil pH	7.5						<b>18.2</b> meq/100g
Buffer pH							
Phosphorus (P)	57 ppm						<b>Calculated Cation Saturation</b> %K 1.6 %Ca 90.1 %Mg 8.5 %H 0.0 Hmeq 0.0  <b>K : Mg Ratio</b> 0.20 <b>Ca : Mg Ratio</b> 10.60
Potassium (K)	117 ppm						
Calcium (Ca)	3280 ppm						
Magnesium (Mg)	185 ppm						
Sulfur (S)							
Boron (B)							
Copper (Cu)							
Iron (Fe)							
Manganese (Mn)							
Zinc (Zn)							
Sodium (Na)							
Soluble Salts							
Organic Matter	4.7 % ENR 120						
Nitrate Nitrogen							

## SOIL FERTILITY GUIDELINES

Crop : Lawn

Rec Units: LB/1000 SF

(lbs)	LIME	(tons)	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	Mg	S	B	Cu	Mn	Zn	Fe
0			4.0	0	2.0	0						
Crop :												Rec Units:

Comment :

*Pauric McGroary*

**SOIL ANALYSIS**

Client : TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	Grower : City of Winchester NMPs  PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 6 of 30
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Lab Number : 08481

Field Id :

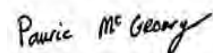
Sample Id : Rotary Field

SUGGESTED FERTILIZATION PROGRAM							
First Application		Second Application		Third Application		Fourth Application	
#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer
12	10-0-20	8	16-4-8	8	16-4-8		

Comments:

**Lawn**

- Cation Exchange Capacity may be over-estimated due to high pH and free lime in the soil.
- The amount of fertilizer recommended on the first page is the total amount needed for the entire growing season. Split into 3-4 applications to keep the lawn green and prevent fertilizer loss. You should not apply more than 0.7 lbs of soluble nitrogen per 1000 square feet in a 30 day period. Or more than 0.9 lbs of nitrogen per 1000 square feet if you are using a slow or controlled release product in a 30 day period. Custom blend is best to meet exactly the requirement, if this is impossible, the above specific fertilizer application is a general guideline, if the specified grades can not be found, replace with fertilizer having similar N:P:K ratio. The best time to apply fertilizer for cool season grass (bluegrass, fescue, ryegrass) is in the Fall when the grass is growing. For Mid-Atlantic region the time is from late August to November. For Northeast region the time is from mid August to October. Fall application should start as soon as the day time high temperature is below 80-85F, apply with the interval of one month. If you start application late in the Fall and do not finish all three applications, repeat the same applications in the Fall of next year. Spring application is recommended when exceptional fertilizer loss due to heavy spring rain leaching and the grasses look pale green. Spring application can start as soon as the grass starts to grow in April. In the case of exceptional warm spring, the application can be made earlier.
- To reduce soil pH apply 2.5 pounds of elemental sulfur per 1000 square feet for every 0.1 of pH unit above 7.2. For example, a soil pH of 7.4 requires 5 pounds of elemental sulfur (0.2 \* 2.5). Do not apply more than 5 lbs per 1000 square feet per application or more than 10 lbs of elemental sulfur per 1000 square feet per year. Timing between applications should be minimum of 3 months. Warm temperature and moist soil are needed for sulfur to reduce soil pH. If sulfur is applied in winter or under drought conditions, it will take longer for the the soil pH to be lowered.
- Use ammonium sulfate as all or portion of the N requirement to reduce pH.



## SOIL ANALYSIS

Client : TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	Grower : City of Winchester NMPs  PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 9 of 30
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Lab Number : 08483

Field Id :

Sample Id : Bridgeforth

Test	Results	SOIL TEST RATINGS					Calculated Cation Exchange Capacity
		Very Low	Low	Medium	Optimum	Very High	
Soil pH	7.1						<b>13.4</b> meq/100g
Buffer pH							
Phosphorus (P)	49 ppm						<b>Calculated Cation Saturation</b> %K 2.6 %Ca 85.3 %Mg 12.4 %H 0.0 Hmeq 0.0  <b>K : Mg Ratio</b> 0.18 <b>Ca : Mg Ratio</b> 6.88
Potassium (K)	136 ppm						
Calcium (Ca)	2285 ppm						
Magnesium (Mg)	200 ppm						
Sulfur (S)							
Boron (B)							
Copper (Cu)							
Iron (Fe)							
Manganese (Mn)							
Zinc (Zn)							
Sodium (Na)							
Soluble Salts							
Organic Matter	8.2 % ENR 150						
Nitrate Nitrogen							

## SOIL FERTILITY GUIDELINES

Crop : Lawn

Rec Units: LB/1000 SF

(lbs)	LIME	(tons)	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	Mg	S	B	Cu	Mn	Zn	Fe
0			4.0	0.5	0	0						
Crop :												Rec Units:

Comment :

*Pauric McGroary*



**SOIL ANALYSIS**

Client : TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	Grower : City of Winchester NMPs  PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 10 of 30
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Lab Number : 08483

Field Id :

Sample Id : Bridgeforth

SUGGESTED FERTILIZATION PROGRAM							
First Application		Second Application		Third Application		Fourth Application	
#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer
12	10-0-20	8	16-4-8	8	16-4-8		

Comments:

**Lawn**

- The amount of fertilizer recommended on the first page is the total amount needed for the entire growing season. Split into 3-4 applications to keep the lawn green and prevent fertilizer loss. You should not apply more than 0.7 lbs of soluble nitrogen per 1000 square feet in a 30 day period. Or more than 0.9 lbs of nitrogen per 1000 square feet if you are using a slow or controlled release product in a 30 day period. Custom blend is best to meet exactly the requirement, if this is impossible, the above specific fertilizer application is a general guideline, if the specified grades can not be found, replace with fertilizer having similar N:P:K ratio. The best time to apply fertilizer for cool season grass (bluegrass, fescue, ryegrass) is in the Fall when the grass is growing. For Mid-Atlantic region the time is from late August to November. For Northeast region the time is from mid August to October. Fall application should start as soon as the day time high temperature is below 80-85F, apply with the interval of one month. If you start application late in the Fall and do not finish all three applications, repeat the same applications in the Fall of next year. Spring application is recommended when exceptional fertilizer loss due to heavy spring rain leaching and the grasses look pale green. Spring application can start as soon as the grass starts to grow in April. In the case of exceptional warm spring, the application can be made earlier.
- Use ammonium sulfate as all or portion of the N requirement to reduce pH.

*Pauric McGroary*

## SOIL ANALYSIS

Client : TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	Grower : City of Winchester NMPs  PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 11 of 30
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Lab Number : 08485

Field Id :

Sample Id : Preston Multi-Purpose

Test	Results	SOIL TEST RATINGS					Calculated Cation Exchange Capacity
		Very Low	Low	Medium	Optimum	Very High	
Soil pH	7.7						19.2 meq/100g
Buffer pH							
Phosphorus (P)	41 ppm						<b>Calculated Cation Saturation</b> %K 1.6 %Ca 91.6 %Mg 6.8 %H 0.0 Hmeq 0.0  <b>K : Mg Ratio</b> 0.23 <b>Ca : Mg Ratio</b> 13.47
Potassium (K)	122 ppm						
Calcium (Ca)	3519 ppm						
Magnesium (Mg)	156 ppm						
Sulfur (S)							
Boron (B)							
Copper (Cu)							
Iron (Fe)							
Manganese (Mn)							
Zinc (Zn)							
Sodium (Na)							
Soluble Salts							
Organic Matter	5.3 % ENR 132						
Nitrate Nitrogen							

## SOIL FERTILITY GUIDELINES

Crop : Lawn

Rec Units: LB/1000 SF

(lbs)	LIME	(tons)	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	Mg	S	B	Cu	Mn	Zn	Fe
0			4.0	0.5	2.0	0						
Crop :												Rec Units:

Comment :

*Pauric McGroary*

**SOIL ANALYSIS**

Client : TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	Grower : City of Winchester NMPs  PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 12 of 30
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Lab Number : 08485

Field Id :

Sample Id : Preston Multi-Purpose

SUGGESTED FERTILIZATION PROGRAM							
First Application		Second Application		Third Application		Fourth Application	
#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer
12	10-0-20	8	16-4-8	8	16-4-8		

Comments:

**Lawn**

- Cation Exchange Capacity may be over-estimated due to high pH and free lime in the soil.
- The amount of fertilizer recommended on the first page is the total amount needed for the entire growing season. Split into 3-4 applications to keep the lawn green and prevent fertilizer loss. You should not apply more than 0.7 lbs of soluble nitrogen per 1000 square feet in a 30 day period. Or more than 0.9 lbs of nitrogen per 1000 square feet if you are using a slow or controlled release product in a 30 day period. Custom blend is best to meet exactly the requirement, if this is impossible, the above specific fertilizer application is a general guideline, if the specified grades can not be found, replace with fertilizer having similar N:P:K ratio. The best time to apply fertilizer for cool season grass (bluegrass, fescue, ryegrass) is in the Fall when the grass is growing. For Mid-Atlantic region the time is from late August to November. For Northeast region the time is from mid August to October. Fall application should start as soon as the day time high temperature is below 80-85F, apply with the interval of one month. If you start application late in the Fall and do not finish all three applications, repeat the same applications in the Fall of next year. Spring application is recommended when exceptional fertilizer loss due to heavy spring rain leaching and the grasses look pale green. Spring application can start as soon as the grass starts to grow in April. In the case of exceptional warm spring, the application can be made earlier.
- To reduce soil pH apply 2.5 pounds of elemental sulfur per 1000 square feet for every 0.1 of pH unit above 7.2. For example, a soil pH of 7.4 requires 5 pounds of elemental sulfur (0.2 \* 2.5). Do not apply more than 5 lbs per 1000 square feet per application or more than 10 lbs of elemental sulfur per 1000 square feet per year. Timing between applications should be minimum of 3 months. Warm temperature and moist soil are needed for sulfur to reduce soil pH. If sulfur is applied in winter or under drought conditions, it will take longer for the the soil pH to be lowered.
- Use ammonium sulfate as all or portion of the N requirement to reduce pH.

*Pauric McGroary*

## SOIL ANALYSIS

Client : TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	Grower : City of Winchester NMPs  PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 13 of 30
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Lab Number : 08486

Field Id :

Sample Id : Eagles Field

Test	Results	SOIL TEST RATINGS					Calculated Cation Exchange Capacity
		Very Low	Low	Medium	Optimum	Very High	
Soil pH	6.7						12.1 meq/100g
Buffer pH							
Phosphorus (P)	55 ppm						<b>Calculated Cation Saturation</b> %K 3.0 %Ca 80.9 %Mg 12.3 %H 4.1 Hmeq 0.5  <b>K : Mg Ratio</b> 0.27 <b>Ca : Mg Ratio</b> 6.58
Potassium (K)	141 ppm						
Calcium (Ca)	1958 ppm						
Magnesium (Mg)	178 ppm						
Sulfur (S)							
Boron (B)							
Copper (Cu)							
Iron (Fe)							
Manganese (Mn)							
Zinc (Zn)							
Sodium (Na)							
Soluble Salts							
Organic Matter	7.5 % ENR 150						
Nitrate Nitrogen							

## SOIL FERTILITY GUIDELINES

Crop : Lawn

Rec Units: LB/1000 SF

(lbs)	LIME	(tons)	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	Mg	S	B	Cu	Mn	Zn	Fe
0			4.0	0	0	0						
Crop :												Rec Units:

Comment :

*Pauric McGroary*

**SOIL ANALYSIS**

Client : TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	Grower : City of Winchester NMPs  PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 14 of 30
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Lab Number : 08486

Field Id :

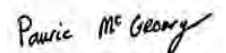
Sample Id : Eagles Field

SUGGESTED FERTILIZATION PROGRAM							
First Application		Second Application		Third Application		Fourth Application	
#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer
12	10-0-20	8	16-4-8	8	16-4-8		

Comments:

**Lawn**

The amount of fertilizer recommended on the first page is the total amount needed for the entire growing season. Split into 3-4 applications to keep the lawn green and prevent fertilizer loss. You should not apply more than 0.7 lbs of soluble nitrogen per 1000 square feet in a 30 day period. Or more than 0.9 lbs of nitrogen per 1000 square feet if you are using a slow or controlled release product in a 30 day period. Custom blend is best to meet exactly the requirement, if this is impossible, the above specific fertilizer application is a general guideline, if the specified grades can not be found, replace with fertilizer having similar N:P:K ratio. The best time to apply fertilizer for cool season grass (bluegrass, fescue, ryegrass) is in the Fall when the grass is growing. For Mid-Atlantic region the time is from late August to November. For Northeast region the time is from mid August to October. Fall application should start as soon as the day time high temperature is below 80-85F, apply with the interval of one month. If you start application late in the Fall and do not finish all three applications, repeat the same applications in the Fall of next year. Spring application is recommended when exceptional fertilizer loss due to heavy spring rain leaching and the grasses look pale green. Spring application can start as soon as the grass starts to grow in April. In the case of exceptional warm spring, the application can be made earlier.



## SOIL ANALYSIS

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Lab Number : 08488

Field Id :

Sample Id : Bodie Grimm

Test	Results	SOIL TEST RATINGS					Calculated Cation Exchange Capacity
		Very Low	Low	Medium	Optimum	Very High	
Soil pH	7.5						<b>19.8</b> meq/100g
Buffer pH							
Phosphorus (P)	35 ppm						<b>Calculated Cation Saturation</b>
Potassium (K)	164 ppm						
Calcium (Ca)	3482 ppm						%K 2.1
Magnesium (Mg)	242 ppm						%Ca 87.9
Sulfur (S)							%Mg 10.2
Boron (B)							%H 0.0
Copper (Cu)							Hmeq 0.0
Iron (Fe)							
Manganese (Mn)							
Zinc (Zn)							<b>K : Mg Ratio</b>
Sodium (Na)							0.20
Soluble Salts							<b>Ca : Mg Ratio</b>
Organic Matter	5.4 % ENR 134						8.62
Nitrate Nitrogen							

## SOIL FERTILITY GUIDELINES

Crop : Lawn

Rec Units: LB/1000 SF

(lbs)	LIME	(tons)	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	Mg	S	B	Cu	Mn	Zn	Fe
0			4.0	0.5	0	0						
<b>Crop :</b>												<b>Rec Units:</b>

Comment :

*Pauric McGroary*

**SOIL ANALYSIS**

Client : TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	Grower : City of Winchester NMPs  PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 18 of 30
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Lab Number : 08488

Field Id :

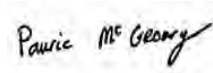
Sample Id : Bodie Grimm

SUGGESTED FERTILIZATION PROGRAM							
First Application		Second Application		Third Application		Fourth Application	
#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer
8	16-4-8	8	16-4-8	6	21-3-7		

Comments:

**Lawn**

- Cation Exchange Capacity may be over-estimated due to high pH and free lime in the soil.
- The amount of fertilizer recommended on the first page is the total amount needed for the entire growing season. Split into 3-4 applications to keep the lawn green and prevent fertilizer loss. You should not apply more than 0.7 lbs of soluble nitrogen per 1000 square feet in a 30 day period. Or more than 0.9 lbs of nitrogen per 1000 square feet if you are using a slow or controlled release product in a 30 day period. Custom blend is best to meet exactly the requirement, if this is impossible, the above specific fertilizer application is a general guideline, if the specified grades can not be found, replace with fertilizer having similar N:P:K ratio. The best time to apply fertilizer for cool season grass (bluegrass, fescue, ryegrass) is in the Fall when the grass is growing. For Mid-Atlantic region the time is from late August to November. For Northeast region the time is from mid August to October. Fall application should start as soon as the day time high temperature is below 80-85F, apply with the interval of one month. If you start application late in the Fall and do not finish all three applications, repeat the same applications in the Fall of next year. Spring application is recommended when exceptional fertilizer loss due to heavy spring rain leaching and the grasses look pale green. Spring application can start as soon as the grass starts to grow in April. In the case of exceptional warm spring, the application can be made earlier.
- To reduce soil pH apply 2.5 pounds of elemental sulfur per 1000 square feet for every 0.1 of pH unit above 7.2. For example, a soil pH of 7.4 requires 5 pounds of elemental sulfur (0.2 \* 2.5). Do not apply more than 5 lbs per 1000 square feet per application or more than 10 lbs of elemental sulfur per 1000 square feet per year. Timing between applications should be minimum of 3 months. Warm temperature and moist soil are needed for sulfur to reduce soil pH. If sulfur is applied in winter or under drought conditions, it will take longer for the the soil pH to be lowered.
- Use ammonium sulfate as all or portion of the N requirement to reduce pH.



## SOIL ANALYSIS

Client : TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	Grower : City of Winchester NMPs  PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 19 of 30
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Lab Number : 08489

Field Id :

Sample Id : T-ball Field

Test	Results	SOIL TEST RATINGS					Calculated Cation Exchange Capacity
		Very Low	Low	Medium	Optimum	Very High	
Soil pH	7.3						17.2 meq/100g
Buffer pH							
Phosphorus (P)	29 ppm						<b>Calculated Cation Saturation</b> %K 1.7 %Ca 87.5 %Mg 10.7 %H 0.0 Hmeq 0.0  <b>K : Mg Ratio</b> 0.17 <b>Ca : Mg Ratio</b> 8.18
Potassium (K)	111 ppm						
Calcium (Ca)	3009 ppm						
Magnesium (Mg)	220 ppm						
Sulfur (S)							
Boron (B)							
Copper (Cu)							
Iron (Fe)							
Manganese (Mn)							
Zinc (Zn)							
Sodium (Na)							
Soluble Salts							
Organic Matter	7.8 % ENR 150						
Nitrate Nitrogen							

## SOIL FERTILITY GUIDELINES

Crop : Lawn

Rec Units: LB/1000 SF

(lbs)	LIME	(tons)	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	Mg	S	B	Cu	Mn	Zn	Fe
0			4.0	1.0	2.0	0						
Crop :												Rec Units:

Comment :

*Pauric McGroary*



**SOIL ANALYSIS**

Client : TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	Grower : City of Winchester NMPs  PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 20 of 30
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Lab Number : 08489

Field Id :

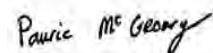
Sample Id : T-ball Field

SUGGESTED FERTILIZATION PROGRAM							
First Application		Second Application		Third Application		Fourth Application	
#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer
12	10-20-15	12	10-0-20	8	16-4-8		

Comments:

**Lawn**

- Cation Exchange Capacity may be over-estimated due to high pH and free lime in the soil.
- The amount of fertilizer recommended on the first page is the total amount needed for the entire growing season. Split into 3-4 applications to keep the lawn green and prevent fertilizer loss. You should not apply more than 0.7 lbs of soluble nitrogen per 1000 square feet in a 30 day period. Or more than 0.9 lbs of nitrogen per 1000 square feet if you are using a slow or controlled release product in a 30 day period. Custom blend is best to meet exactly the requirement, if this is impossible, the above specific fertilizer application is a general guideline, if the specified grades can not be found, replace with fertilizer having similar N:P:K ratio. The best time to apply fertilizer for cool season grass (bluegrass, fescue, ryegrass) is in the Fall when the grass is growing. For Mid-Atlantic region the time is from late August to November. For Northeast region the time is from mid August to October. Fall application should start as soon as the day time high temperature is below 80-85F, apply with the interval of one month. If you start application late in the Fall and do not finish all three applications, repeat the same applications in the Fall of next year. Spring application is recommended when exceptional fertilizer loss due to heavy spring rain leaching and the grasses look pale green. Spring application can start as soon as the grass starts to grow in April. In the case of exceptional warm spring, the application can be made earlier.
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- Use ammonium sulfate as all or portion of the N requirement to reduce pH.



## SOIL ANALYSIS

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Lab Number : 08490

Field Id :

Sample Id : Henkel Harris

Test	Results	SOIL TEST RATINGS					Calculated Cation Exchange Capacity
		Very Low	Low	Medium	Optimum	Very High	
Soil pH	7.6						<b>20.3</b> meq/100g
Buffer pH							
Phosphorus (P)	46 ppm						<b>Calculated Cation Saturation</b> %K 1.8 %Ca 89.1 %Mg 9.3 %H 0.0 Hmeq 0.0 <hr/> <b>K : Mg Ratio</b> 0.21 <b>Ca : Mg Ratio</b> 9.58
Potassium (K)	141 ppm						
Calcium (Ca)	3616 ppm						
Magnesium (Mg)	227 ppm						
Sulfur (S)							
Boron (B)							
Copper (Cu)							
Iron (Fe)							
Manganese (Mn)							
Zinc (Zn)							
Sodium (Na)							
Soluble Salts							
Organic Matter	7.2 % ENR 150						
Nitrate Nitrogen							

## SOIL FERTILITY GUIDELINES

Crop : Lawn

Rec Units: LB/1000 SF

(lbs)	LIME	(tons)	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	Mg	S	B	Cu	Mn	Zn	Fe
0			4.0	0.5	0	0						
Crop :												Rec Units:

Comment :

*Pauric McGroary*

**SOIL ANALYSIS**

Client : TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	Grower : City of Winchester NMPs  PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 22 of 30
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Lab Number : 08490

Field Id :

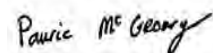
Sample Id : Henkel Harris

SUGGESTED FERTILIZATION PROGRAM							
First Application		Second Application		Third Application		Fourth Application	
#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer
12	10-0-20	8	16-4-8	8	16-4-8		

Comments:

**Lawn**

- Cation Exchange Capacity may be over-estimated due to high pH and free lime in the soil.
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## SOIL ANALYSIS

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Lab Number : 08479

Field Id :

Sample Id : Yost Infield

Test	Results	SOIL TEST RATINGS					Calculated Cation Exchange Capacity
		Very Low	Low	Medium	Optimum	Very High	
Soil pH	7.9						20.6 meq/100g
Buffer pH							
Phosphorus (P)	77 ppm						Calculated Cation Saturation
Potassium (K)	85 ppm						
Calcium (Ca)	3892 ppm						%K 1.1
Magnesium (Mg)	113 ppm						%Ca 94.5
Sulfur (S)							%Mg 4.6
Boron (B)							%H 0.0
Copper (Cu)							Hmeq 0.0
Iron (Fe)							
Manganese (Mn)							
Zinc (Zn)							
Sodium (Na)							K : Mg Ratio
Soluble Salts							0.22
Organic Matter	2.7 % ENR 80						Ca : Mg Ratio
Nitrate Nitrogen							20.54

## SOIL FERTILITY GUIDELINES

Crop : Lawn

Rec Units: LB/1000 SF

(lbs)	LIME	(tons)	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	Mg	S	B	Cu	Mn	Zn	Fe
0			4.0	0	3.0	0						
Crop :												Rec Units:

Comment :

*Pauric McGroary*

**SOIL ANALYSIS**

Client : TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	Grower : City of Winchester NMPs  PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 2 of 30
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Lab Number : 08479

Field Id :

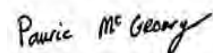
Sample Id : Yost Infield

SUGGESTED FERTILIZATION PROGRAM							
First Application		Second Application		Third Application		Fourth Application	
#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer
12	10-0-20	8	16-4-8	8	16-4-8		

Comments:

**Lawn**

- Cation Exchange Capacity may be over-estimated due to high pH and free lime in the soil.
- The amount of fertilizer recommended on the first page is the total amount needed for the entire growing season. Split into 3-4 applications to keep the lawn green and prevent fertilizer loss. You should not apply more than 0.7 lbs of soluble nitrogen per 1000 square feet in a 30 day period. Or more than 0.9 lbs of nitrogen per 1000 square feet if you are using a slow or controlled release product in a 30 day period. Custom blend is best to meet exactly the requirement, if this is impossible, the above specific fertilizer application is a general guideline, if the specified grades can not be found, replace with fertilizer having similar N:P:K ratio. The best time to apply fertilizer for cool season grass (bluegrass, fescue, ryegrass) is in the Fall when the grass is growing. For Mid-Atlantic region the time is from late August to November. For Northeast region the time is from mid August to October. Fall application should start as soon as the day time high temperature is below 80-85F, apply with the interval of one month. If you start application late in the Fall and do not finish all three applications, repeat the same applications in the Fall of next year. Spring application is recommended when exceptional fertilizer loss due to heavy spring rain leaching and the grasses look pale green. Spring application can start as soon as the grass starts to grow in April. In the case of exceptional warm spring, the application can be made earlier.
- To reduce soil pH apply 2.5 pounds of elemental sulfur per 1000 square feet for every 0.1 of pH unit above 7.2. For example, a soil pH of 7.4 requires 5 pounds of elemental sulfur (0.2 \* 2.5). Do not apply more than 5 lbs per 1000 square feet per application or more than 10 lbs of elemental sulfur per 1000 square feet per year. Timing between applications should be minimum of 3 months. Warm temperature and moist soil are needed for sulfur to reduce soil pH. If sulfur is applied in winter or under drought conditions, it will take longer for the the soil pH to be lowered.
- Use ammonium sulfate as all or portion of the N requirement to reduce pH.



## SOIL ANALYSIS

Client : TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	Grower : City of Winchester NMPs  PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 29 of 30
--	--	---

Lab Number : 08494

Field Id :

Sample Id : Harvest Ridge

Test	Results	SOIL TEST RATINGS					Calculated Cation Exchange Capacity
		Very Low	Low	Medium	Optimum	Very High	
Soil pH	7.0						11.8 meq/100g
Buffer pH							
Phosphorus (P)	44 ppm						<b>Calculated Cation Saturation</b> %K 5.0 %Ca 85.0 %Mg 10.2 %H 0.0 Hmeq 0.0  <b>K : Mg Ratio</b> 0.50 <b>Ca : Mg Ratio</b> 8.33
Potassium (K)	232 ppm						
Calcium (Ca)	2007 ppm						
Magnesium (Mg)	144 ppm						
Sulfur (S)							
Boron (B)							
Copper (Cu)							
Iron (Fe)							
Manganese (Mn)							
Zinc (Zn)							
Sodium (Na)							
Soluble Salts							
Organic Matter	5.6 % ENR 145						
Nitrate Nitrogen							

## SOIL FERTILITY GUIDELINES

Crop : Lawn

Rec Units: LB/1000 SF

(lbs)	LIME	(tons)	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	Mg	S	B	Cu	Mn	Zn	Fe
0			4.0	0.5	0	0						
Crop :												Rec Units:

Comment :

*Pauric McGroary*

**SOIL ANALYSIS**

Client : TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	Grower : City of Winchester NMPs  PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 30 of 30
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Lab Number : 08494

Field Id :

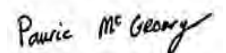
Sample Id : Harvest Ridge

SUGGESTED FERTILIZATION PROGRAM							
First Application		Second Application		Third Application		Fourth Application	
#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer
8	16-4-8	8	16-4-8	6	21-3-7		

Comments:

**Lawn**

The amount of fertilizer recommended on the first page is the total amount needed for the entire growing season. Split into 3-4 applications to keep the lawn green and prevent fertilizer loss. You should not apply more than 0.7 lbs of soluble nitrogen per 1000 square feet in a 30 day period. Or more than 0.9 lbs of nitrogen per 1000 square feet if you are using a slow or controlled release product in a 30 day period. Custom blend is best to meet exactly the requirement, if this is impossible, the above specific fertilizer application is a general guideline, if the specified grades can not be found, replace with fertilizer having similar N:P:K ratio. The best time to apply fertilizer for cool season grass (bluegrass, fescue, ryegrass) is in the Fall when the grass is growing. For Mid-Atlantic region the time is from late August to November. For Northeast region the time is from mid August to October. Fall application should start as soon as the day time high temperature is below 80-85F, apply with the interval of one month. If you start application late in the Fall and do not finish all three applications, repeat the same applications in the Fall of next year. Spring application is recommended when exceptional fertilizer loss due to heavy spring rain leaching and the grasses look pale green. Spring application can start as soon as the grass starts to grow in April. In the case of exceptional warm spring, the application can be made earlier.



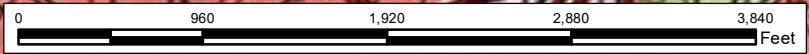




Site Limits

**RECEIVED**

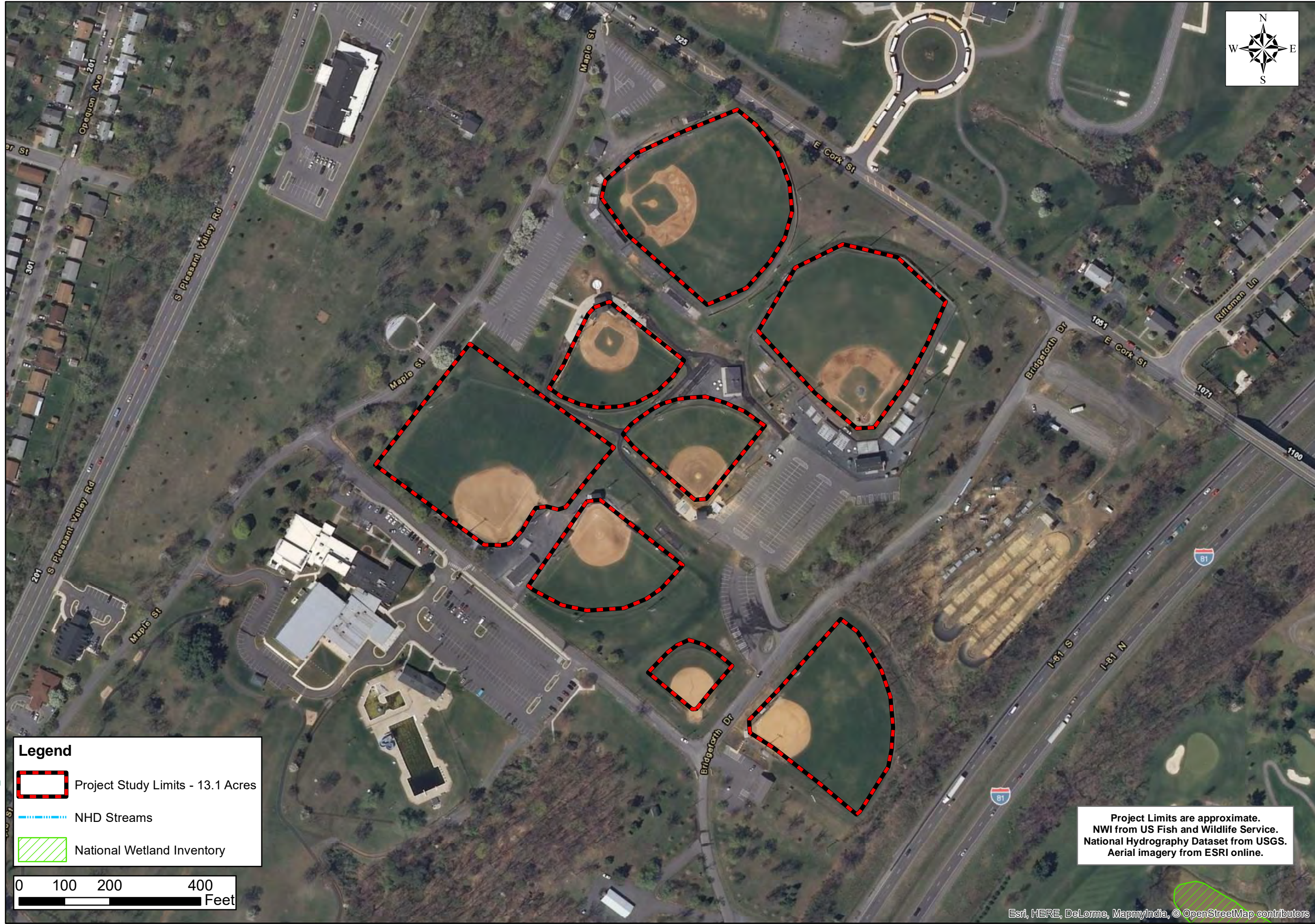
Site limits are approximate.  
Topographic imagery from USGS.



<p><b>WINCHESTER NUTRIENT MANAGEMENT PLANS - JIM BARNETT PARK</b> CITY OF WINCHESTER, VIRGINIA <b>FIGURE 1: VICINITY MAP</b></p>	<p><b>TIMMONS GROUP</b> YOUR VISION ACHIEVED THROUGH OURS.</p>
<p>TIMMONS GROUP JOB NUMBER: 36284.007 PROJECT STUDY LIMITS: 13.1 ACRES LATITUDE: 39° 10' 27.9" N LONGITUDE: 78° 09' 06.2" W</p>	<p>U.S.G.S. QUADRANGLE(S): WINCHESTER DATE(S): 2013 WATERSHED(S): CONOCOCHEGUE-OPEQUON HYDROLOGIC UNIT CODE(S): 02070004</p>

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# TIMMONS GROUP

WINCHESTER NUTRIENT MANAGEMENT PLANS - JIM BARNETT PARK  
CITY OF WINCHESTER, VIRGINIA

FIGURE 2: ENVIRONMENTAL INVENTORY MAP

THIS DRAWING PREPARED AT THE  
CORPORATE OFFICE  
1001 Boulders Parkway, Suite 300 / Richmond, VA 23225  
TEL 804.202.6500 FAX 804.560.7648 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS	REVISION DESCRIPTION
Site Development   Residential   Infrastructure   Technology   Environmental	
DATE	
DATE	03/10/2016
DRAWN BY	B. NORRIS
DESIGNED BY	B. NORRIS
CHECKED BY	E. VIRTIS
SCALE	1" = 200'

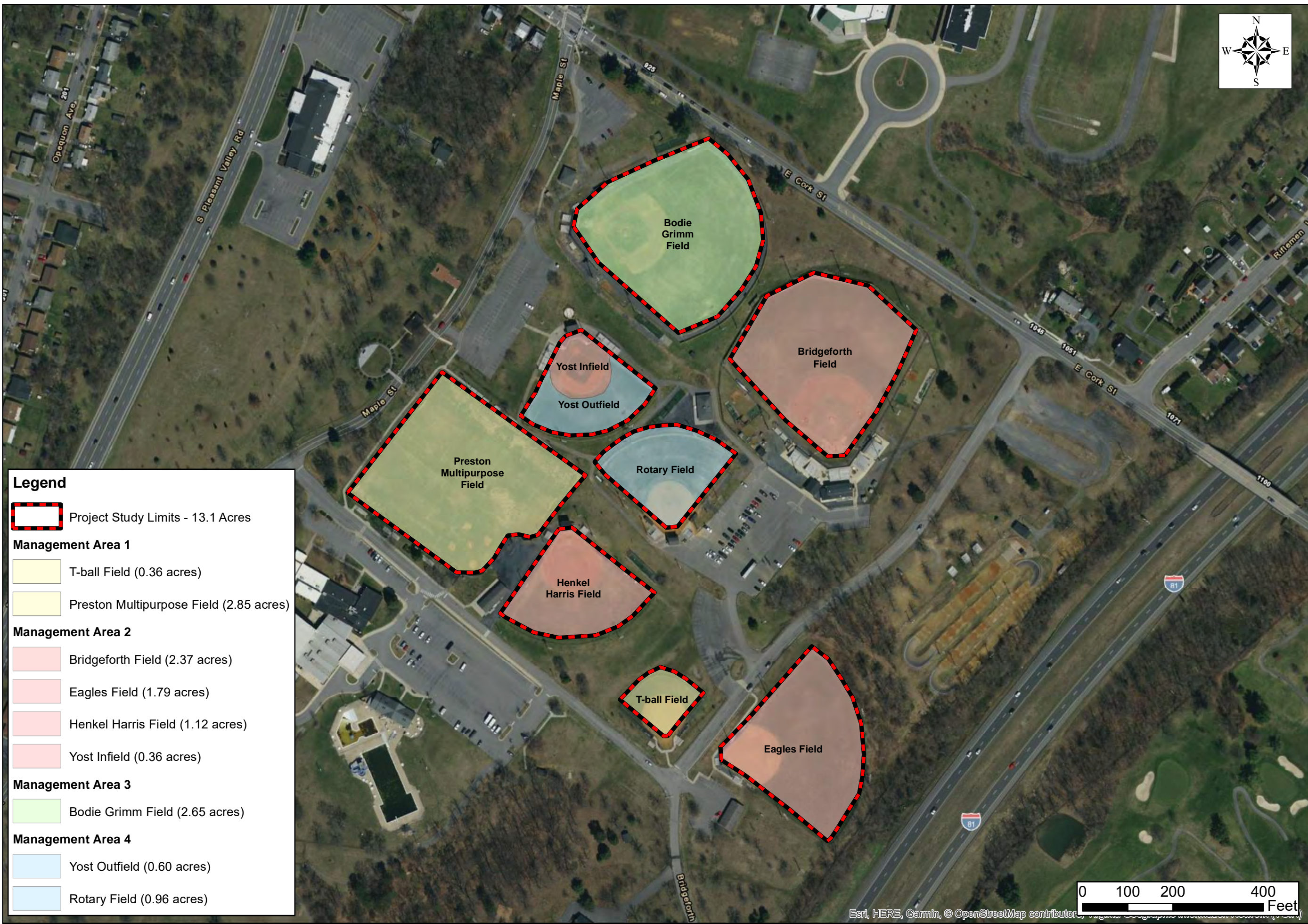
JOB NUMBER  
36284.007

SHEET NO.  
1 OF 1

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Path: Y:\804\36284.015-Winchester-NMPS\GIS\Common Shared Exhibits\NMAs\Jim Barnett NMAs.mxd



**Legend**

- Project Study Limits - 13.1 Acres
- Management Area 1**
- T-ball Field (0.36 acres)
- Preston Multipurpose Field (2.85 acres)
- Management Area 2**
- Bridgeforth Field (2.37 acres)
- Eagles Field (1.79 acres)
- Henkel Harris Field (1.12 acres)
- Yost Infield (0.36 acres)
- Management Area 3**
- Bodie Grimm Field (2.65 acres)
- Management Area 4**
- Yost Outfield (0.60 acres)
- Rotary Field (0.96 acres)

**TIMMONS GROUP**

WINCHESTER NUTRIENT MANAGEMENT PLANS - JIM BARNETT PARK  
CITY OF WINCHESTER, VIRGINIA

**FIGURE 3: NUTRIENT MANAGEMENT AREAS MAP**

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TEL 804.200.6500 FAX 804.560.7648 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS

DATE	REVISION DESCRIPTION
02/21/2019	

DATE  
02/21/2019

DRAWN BY  
P.OSTERLOH

DESIGNED BY  
P.OSTERLOH

CHECKED BY  
R.HUNTER

SCALE  
1" = 200'

JOB NUMBER  
36284.015

SHEET NO.  
1 OF 1

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Matthew J. Strickler  
Secretary of Natural Resources

Clyde E. Cristman  
Director



Rochelle Altholz  
Deputy Director of  
Administration and Finance

Russell W. Baxter  
Deputy Director of  
Dam Safety & Floodplain  
Management and Soil & Water  
Conservation

Thomas L. Smith  
Deputy Director of Operations

**COMMONWEALTH of VIRGINIA**  
DEPARTMENT OF CONSERVATION AND RECREATION

Mr. Lambert  
Rouss City Hall, 15 N Cameron St.  
Winchester VA, 22601

4/17/2019

Subject: Jim Barnett Park Nutrient Management Plan Review

The following nutrient management plan has been reviewed by Nick Yakish and confirmed by the Virginia Department of Conservation & Recreation to be developed in accordance with the Code of Virginia 10.1-104.2. Please note that this plan has not been reviewed for compliance with more restrictive requirements from other specific legislative, regulatory or incentive programs.

Plan Name	Planner	Acres	Start Date	Expiration Date
Jim Barnett Park	Parker Osterloh	13.1	3/15/2019	3/15/2022

A copy of this letter should be kept with your nutrient management plan. Initiation of plan revision is recommended by the Department to occur at least six months prior to the expiration date. If you have any questions concerning this letter or reviews, please contact me via phone or email.

Sincerely,

A handwritten signature in black ink, appearing to read "Nick Yakish".

Nick Yakish  
Urban Nutrient Management Coordinator  
Department of Conservation and Recreation  
600 East Main St., 24<sup>th</sup> Floor  
Richmond, Virginia 23219  
(804) 389-5439  
nicholas.yakish@dcr.virginia.gov

# Nutrient Management Plan

## Park Place

Prepared For:

Tommy Lambert  
City of Winchester  
Rouss City Hall, 15 N. Cameron Street  
Winchester, VA 22601  
540-667-1815

Prepared By:

Parker Osterloh, Timmons Group  
1001 Boulders Parkway, Suite 300  
Richmond, VA 23225  
804-200-6457  
Certification Code: #920  
Total Managed Area Acreage: 1.54

The purpose of this Nutrient Management Plan is to ensure minimum movement of Nitrogen and phosphorous from the specified area of application to surface and groundwaters where they can potentially have a detrimental effect on water quality as well as ensuring plants have optimum soil nutrient availability for maximum productivity and quality. By following this soil test based plan you are helping to protect waters of the Chesapeake Bay.

If you have any questions, please contact your plan writer, local Virginia Cooperative Extension Agent, or the Department of Conservation and Recreation Nutrient Management Program.

# Nutrient Management Plan For:

## Park Place

### Landowner Information:

Company Name	City of Winchester
Customer Name	Tommy Lambert
Mailing Address	Rouss City Hall, 15 N. Cameron Street
City, State Zip	Winchester, VA 22601
Phone	540-667-1815
Email	Thomas.lambert@winchesterve.gov

### Planner Information:

Planner Name	Parker Osterloh
Mailing Address	1001 Boulders Parkway, Suite 300
City, State Zip	Richmond, VA 23225
Phone	804-200-6457
Fax	804-560-1016
Email	Parker.osterloh@timmons.com
Certification Code	#920

### Location Information:

Physical Address	2024 Harvest Drive
City, State Zip	Winchester, VA 22601
Latitude	39° 09' 59.8" N
Longitude	78° 11' 20.8" W
VAHU6 Watershed Code	PU17 Abrams Creek
County	City of Winchester

### Acreage:

Total	67,082 square feet (1.54 acres)
-------	---------------------------------

Plan Start Date	3/15/2019
Plan End Date	3/15/2022

Planner Signature:



# Narrative

This Nutrient Management Plan has been prepared by Timmons Group, on behalf of the City of Winchester. Park Place Park is located on Harvest Drive in Winchester, Virginia, north of Cedar Creek Grade and west of Taylor Grace Court (see [Figure 1: Vicinity Map](#)). The park has one multi-purpose athletic field and a playground. The site is relatively flat with a gentle slope on the eastern side of the athletic field. No wetlands were found to be present within the site limits during the January 29, 2019 site visit and no wetlands or streams were depicted within the site limits as shown on [Figure 2: Environmental Inventory Map](#). There were no wells, subsurface tile drains, springs, sinkholes, rock outcrops, land with slopes steeper than 15%, or qualifying soil types observed onsite. Therefore, no environmentally sensitive areas were identified.

Using aerial photography during a previous site visit and through discussions with City of Winchester staff, a 1.54-acre area (67,082 sq ft) was identified as turf where fertilizer could be applied. The turf on the athletic field (Park Place Field) is comprised of a mixture of cool season grasses.

This plan is effective for three years (until March 15, 2022) or until significant changes to maintenance practices occur. Should the City of Winchester decide to fertilize any locations within Park Place Park outside of these managed areas, this nutrient management plan should be updated with recommendations for the additional area(s). Other significant changes would include: changing turf species in the athletic fields, renovating an athletic field and the existing underlying soil, creation of an additional athletic field, expansion of the area to be included under this nutrient management plan, or other changes that could alter nutrient recommendations and timing.

One management area was determined for Park Place Park. Management Area 1 (Park Place Field) is shown on [Figure 3: Nutrient Management Areas Map](#). Based on the City of Winchester, Virginia average first killing frost date of October 15th (Fall), the average last killing frost date of April 15th (Spring), and the cool season turf identified onsite, fertilizer applications on this management area should occur within the cool season application period of March 4th to November 26th. Nutrient application instructions are identified in the nutrient management worksheet of this plan.

Applications of nutrients should not occur on frozen or snow-covered ground. Any fertilizer that makes its way onto impervious surfaces should be swept or blown back into pervious turfgrass-covered areas. Do not use fertilizers as ice melt. Nutrient applications should not be completed when significant runoff producing events are anticipated.

**Every fertilizer application should be recorded in the record sheet provided.** Any questions or concerns with fertilizer products or record keeping should be brought to the plan writer's attention.

# Nutrient Management Worksheet

Property:	Park Place Park								
Prepared:	3/15/19						Species:	Cool Season	
Expires:	3/15/22								
Management Area	Application Month/Day	# of Apps	Application Interval	Fertilizer Product	% Slow Release N	NPK Value of Fertilizer Product	Total NPK lbs/1,000 square feet	Required lbs/1,000 ft <sup>2</sup> of Fertilizer Product to Meet Target Application Rate	Total Required lbs per area
						N - P <sub>2</sub> O <sub>5</sub> - K <sub>2</sub> O	N - P <sub>2</sub> O <sub>5</sub> - K <sub>2</sub> O		
Management Area 1: Park Place Field acreage = approximately 1.54  Maximum 4.2-2-2	4/15 - 5/15	1		custom blend SCU (10-10-10)	25%	10 - 10 - 10	0.50 - 0.50 - 0.50	5.0	335
	6/1 - 6/15	1		custom blend SCU (10-15-10)	25%	10 - 15 - 10	0.50 - 0.75 - 0.50	5.0	335
	8/15 - 8/31	1		custom blend SCU (10-15-10)	25%	10 - 15 - 10	0.50 - 0.75 - 0.50	5.0	335
	9/15 - 11/30	3	> 30 days	SCU (30-0-10)	50%	30 - 0 - 10	0.90 - 0.00 - 0.30	3.0	201
	*Recommended Total Annual NPK Application						4.2 - 2.00 - 2.40		
Notes	The annual application of total nitrogen <b>should not exceed 4.2 lbs N per 1000 sq ft</b> (maximum for intensively managed cool season athletic fields). During the months of September, October, and November, total nitrogen should not exceed 0.9 lbs per 1000 sq ft of slow or controlled release fertilizer sources or 0.7 lbs per 1000 sq ft of water soluble nitrogen (WSN) per application, with a minimum of 30 days between applications. During the months of April, May, June, and August, total nitrogen should not exceed 0.5 lbs per 1000 sq ft per application, with a minimum of 30 days between applications. Applications should fall within the cool season application window identified in the narrative of this plan.								
Lime/Sulfur Recommendations	* Recommendations are targeted to bring soil pH to 6.2 for optimal growth of turfgrass *  No lime or sulfur ammements are necessary at this time.								





# Soil Test Reports

Soil samples were taken from the turfgrass at the Park Place Park athletic field on January 29, 2019. Soil samples were analyzed by Waypoint Analytical (formerly A&L Eastern Laboratories). Standard soil test results provide values for pH, phosphorus, calcium, magnesium, potassium, cation exchange capacity, and organic matter. The soil samples collected are valid for the life of this plan (three years) or upon a major renovation or redesign of the park, whichever occurs sooner.

## **A. Management Area 1 - 1.5 acres (Park Place Field)**

The phosphorus level was Low+ (L+) for the athletic field. Applications of phosphorus are recommended, not to exceed 2.0 lbs/1,000 sq ft annually. See additional notes on the nutrient application worksheet. Potassium levels were High- (H-) for the athletic field. Maximum applications of potassium are recommended at 1.0 lb/1,000 sq ft annually. This potassium recommendation exceeds that derived from the soil analysis. However, potassium is not an environmentally regulated nutrient and application of surplus potassium will only increase strength and vigor of turfgrass roots. Nitrogen applications are recommended as 4.2 lbs/1,000 sq ft annually based on maximum nitrogen per application rates. The annual maximum nitrogen application rate for cool season grasses on intensively managed athletic fields is 4.2 lbs/1,000 sq ft (see the Nutrient Management Worksheet for additional detail).

# Standards and Criteria

## Section VI. Turfgrass Nutrient Recommendations for Home Lawns, Office Parks, Public Lands and Other Similar Residential/Commercial Grounds

### Definitions

For the purposes of this section, the following definitions, as presented by the Association of American Plant Food Control Officials (AAPFCO), apply:

“Enhanced efficiency fertilizer” describes fertilizer products with characteristics that allow increased plant nutrient availability and reduce the potential of nutrient losses to the environment when compared to an appropriate reference product.

“Slow or controlled release fertilizer” means a fertilizer containing a plant nutrient in a form which delays its availability for plant uptake and use after application, or which extends its availability to the plant significantly longer than a reference “rapidly available nutrient fertilizer” such as ammonium nitrate, urea, ammonium phosphate or potassium chloride. A slow or controlled release fertilizer must contain a minimum of 15 percent slowly available forms of nitrogen.

“Water soluble nitrogen”, “WSN” and “readily available nitrogen” means: Water soluble nitrogen in either ammonical, urea, or nitrate form that does not have a controlled release, or slow response.

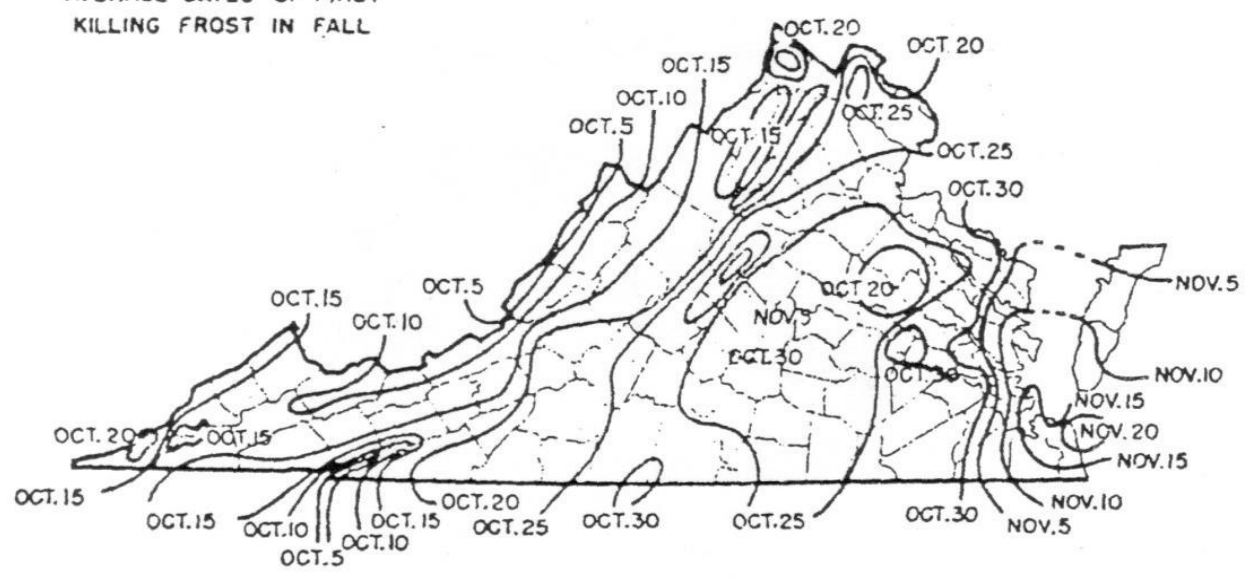
### Recommended Season of Application For Nitrogen Fertilizers - Applies to all Turf

A nitrogen fertilization schedule weighted toward fall application is recommended and preferred for agronomic quality and persistence of cool season turfgrass; however, the acceptable window of applications is much wider than this for nutrient management. The nutrient management recommended application season for nitrogen fertilizers to cool season turfgrasses begins six weeks prior to the last spring average killing frost date and ends six weeks past the first fall average killing frost date (see Figures 6-1 & 6-2). Applications of nitrogen during the intervening late fall and winter period should be avoided due to higher potential leaching or runoff risk, but where necessary, apply no more than 0.5 pounds per 1,000 ft<sup>2</sup> of water soluble nitrogen within a 30 day period. Higher application rates may be used during this late fall and winter period by using materials containing slowly available sources of nitrogen, if the water soluble nitrogen contained in the fertilizer does not exceed the recommended maximum of 0.5 pounds per 1,000 ft<sup>2</sup> rate. Do not apply nitrogen or phosphorus fertilizers when the ground is frozen.

The acceptable nitrogen fertilizer application season for non-overseeded warm season turfgrass begins no earlier than the last spring average killing frost date and ends no later than one month prior to the first fall average killing frost date (see Figures on next sheet).

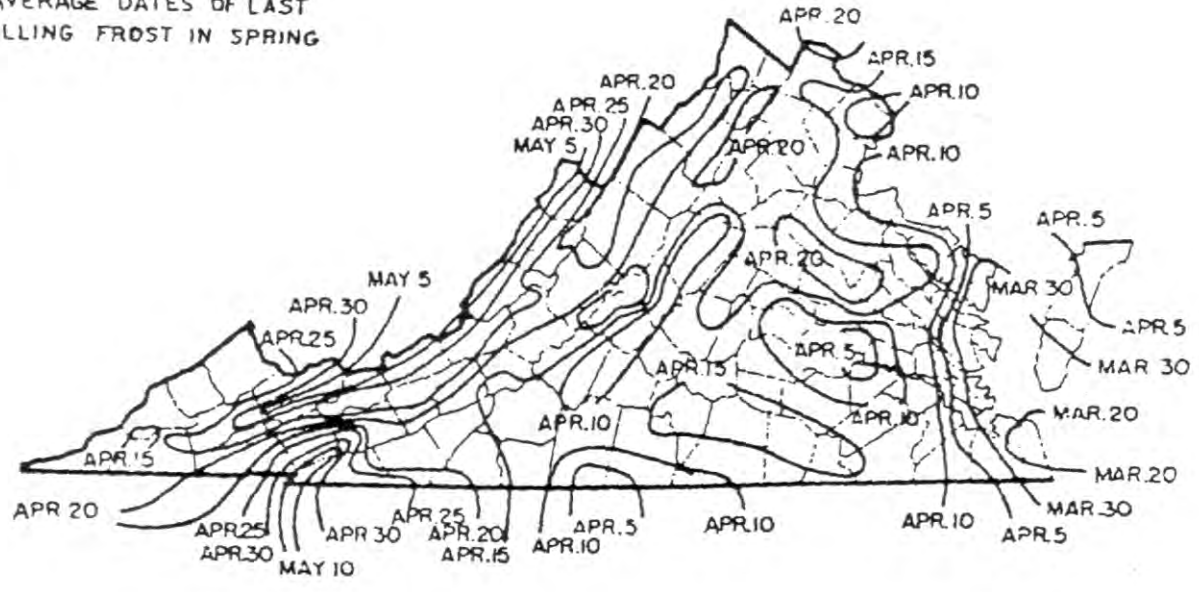
### VIRGINIA

AVERAGE DATES OF FIRST  
KILLING FROST IN FALL



### VIRGINIA

AVERAGE DATES OF LAST  
KILLING FROST IN SPRING



### **Per Application Rates**

Do not apply more than 0.7 pounds of water soluble nitrogen per 1,000 ft<sup>2</sup> within a 30 day period. For cool season grasses, do not apply more than 0.9 pounds of total nitrogen per 1,000 ft<sup>2</sup> within a 30 day period. For warm season grasses, do not apply more than 1.0 pounds of total nitrogen per 1,000 ft<sup>2</sup> within a 30 day period. Lower per application rates of water soluble nitrogen sources or use of slowly available nitrogen sources should be utilized on very permeable sandy soils, shallow soils over fractured bedrock, or areas near water wells.

### **Use of Slowly Available Forms of Nitrogen**

For slow or controlled release fertilizer sources, or enhanced efficiency fertilizer sources, no more than 0.9 pounds of nitrogen per 1,000 ft<sup>2</sup> may be applied to cool season grasses within a 30 day period and no more than 1.0 pounds of nitrogen per 1,000 ft<sup>2</sup> may be applied to warm season grasses within a 30 day period.

Provided the fertilizer label guarantees that the product can be used in such a way that it will not release more than 0.7 pounds of nitrogen per 1,000 ft<sup>2</sup> in a 30 day period, no more than 2.5 pounds of nitrogen per 1,000 ft<sup>2</sup> may be applied in a single application. Additionally, total annual applications shall not exceed 80 percent of the annual nitrogen rates for cool or warm season grasses.

### **Phosphorus and Potassium Nutrient Needs (Established Turf)**

Apply phosphorus (P<sub>2</sub>O<sub>5</sub>) and potassium (K<sub>2</sub>O) fertilizers as indicated necessary by a soil test using the following guidelines:

\* For the lower soil test level within a rating, use the higher side of the range and for higher soil test level

within a rating use the lower side of the recommendation range. (For example the recommendation for a

P<sub>2</sub>O<sub>5</sub> soil test level of L- would be 3 pounds per 1,000 ft<sup>2</sup>.)

Do not use high phosphorus ratio fertilizers such as 10-10-10 or 5-10-10, unless soil tests indicate phosph

orus availability below the M+ level.

### **Recommendations for Establishment of Turf**

These recommendations are for timely planted turfgrass, that is, the seed or vegetative material (sod, plugs, and /or sprigs), are planted at a time of the year when temperatures and moisture are adequate to maximize turfgrass establishment. These recommended establishment periods would be late summer to early fall for cool-season turfgrasses and late spring through mid-summer for warm-season turfgrasses.

## **Nitrogen Applications**

At the time of establishment, apply no more than 0.9 pounds per 1,000 ft<sup>2</sup> of total nitrogen for cool season grasses or 1.0 pounds per 1,000 ft<sup>2</sup> of total nitrogen for warm season grasses, using a material containing slowly available forms of nitrogen, followed by one or two applications beginning 30 days after planting, not to exceed a total of 1.8 pounds per 1,000 ft<sup>2</sup> total for cool season grasses and 2.0 pounds per 1,000 ft<sup>2</sup> for warm season grasses for the establishment period. Applications of WSN cannot exceed more than 0.7 pounds per 1,000 ft<sup>2</sup> within a 30 day period.

## **Phosphorus and Potassium Recommendations for Establishment**

\* For the lower soil test level within a rating, use the higher side of the range and for higher soil test level within a rating use the lower side of the recommendation range.

## **Nitrogen Management on Athletic Fields - Cool Season Grasses**

- This program is intended for those fields which are under heavy use.
- Nitrogen recommendations are based on the assumption that there is adequate soil moisture to promote good turf growth at the time of application. If no rainfall has occurred since the last application, further applications should be delayed until significant soil moisture is available.

### **Notes:**

- Soluble nitrogen rates of 0.25 pounds per 1,000 ft<sup>2</sup> or less which may be a component of a pesticide or minor element application may be applied any time the turf is actively growing, but must be considered with the total annual nitrogen application rate.

- WSN = water soluble nitrogen; WIN = water insoluble nitrogen

(a) Intensive managed areas must be irrigated.

(b) The beginning and ending dates for application of nitrogen shall be determined using guidance and frost date maps contained in the preceding Season of Application for Nitrogen section, using Figures 6-1 and 6-2.

(c) Rates up to 0.9 pounds per 1,000 ft<sup>2</sup> of total nitrogen can be applied using a material containing slowly available forms of nitrogen, with a minimum of 30 days between applications.

(d) Make this application only if turf use warrants additional nitrogen for sustaining desirable growth and /or color.

## **Nitrogen Management on Athletic Fields - Warm Season Grasses**

The following comments apply to both Naturally Occurring or Modified Sand based Fields and Predominantly Silt/Clay Soil Fields:

- Annual nitrogen rates for warm season grasses shall not exceed **4 pounds** in areas which have the average first killing frost on or before October 20, and shall not exceed **5 pounds** in areas which have the average first killing frost after October 20 as shown in Figure 6-1. Nitrogen rates and timings for overseeding warm season grasses are not included in these rates.
- April 15 - May 15 applications should not be made until after complete green-up of turf.
- Nitrogen applications June through August should be coordinated with anticipated rainfall if irrigation is not available.

Use the lower end of the ranges for non-irrigated fields and the higher end of the ranges should be used on fields with irrigation.

Nitrogen rates towards the higher end of the ranges may be applied on heavily used fields to accelerate recovery, however per application and annual rates cannot be exceeded.

For overseeded warm season grasses, an additional 0.7 pounds per 1,000ft<sup>2</sup> of WSN may be applied in the Fall after the perennial ryegrass overseeding is well established. The WSN must be applied as two applications not to exceed 0.35 pounds per 1,000 ft<sup>2</sup> of nitrogen each, with a minimum of 15 days between applications. Additional WSN application of 0.5 pounds per 1,000 ft<sup>2</sup> may be made in February-March to overseeded perennial ryegrass if growth and color indicate need. Alternatively, split applications of 0.5 pounds of nitrogen per 1,000 ft<sup>2</sup> each with a minimum of 15 days between applications may be applied using a material containing slowly available nitrogen sources.



# Reference Materials and Notes

**Virginia Nutrient Management Standards and Criteria, Revised July 2014, Department of Conservation and Recreation, Division of Soil and Water Conservation**

**ESRI Aerial Photography**

# Fertilizer Application Records

Customer Information					Management Area Information			
Name:	City of Winchester – Park Place				Management Area ID:	Park Place Field		
Address:	2024 Harvest Drive				Management Area Size:	67,082 sq ft		
	Winchester, VA 22601				Plant Species:	Tall Fescue/Kentucky Bluegrass Mixture		
Phone #:	540-667-1815				Notes:			
Date (M/D/Y)	Supervisor/Applicator	Weather Conditions			Fertilizer Analysis	Rate	Amount Fertilizer Used	Application Equipment Used
		Temp	Wind Speed	Precip				
When was the last time your fertilizer equipment was calibrated??? For information on calibration see Chapter 10 of the "Urban Nutrient Management Handbook". Available for download at <a href="http://pubs.ext.vt.edu/430/430-350/430-350.html">http://pubs.ext.vt.edu/430/430-350/430-350.html</a>								

## SOIL ANALYSIS

Client : TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	Grower : City of Winchester NMPs  PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 23 of 30
--	--	---

Lab Number : 08491

Field Id :

Sample Id : Park Place

Test	Results	SOIL TEST RATINGS					Calculated Cation Exchange Capacity
		Very Low	Low	Medium	Optimum	Very High	
Soil pH	6.2						8.9 meq/100g
Buffer pH	6.82						
Phosphorus (P)	20 ppm						<b>Calculated Cation Saturation</b> %K 4.2 %Ca 72.2 %Mg 10.9 %H 12.4 Hmeq 1.1  <b>K : Mg Ratio</b> 0.40 <b>Ca : Mg Ratio</b> 6.62
Potassium (K)	145 ppm						
Calcium (Ca)	1286 ppm						
Magnesium (Mg)	116 ppm						
Sulfur (S)							
Boron (B)							
Copper (Cu)							
Iron (Fe)							
Manganese (Mn)							
Zinc (Zn)							
Sodium (Na)							
Soluble Salts							
Organic Matter	5.1 % ENR 139						
Nitrate Nitrogen							

## SOIL FERTILITY GUIDELINES

Crop : Lawn

Rec Units: LB/1000 SF

(lbs)	LIME	(tons)	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	Mg	S	B	Cu	Mn	Zn	Fe
40			4.0	1.0	0	0						
Crop :												
Rec Units:												

Comment :

*Pauric McGroary*

**SOIL ANALYSIS**

Client : <b>TIMMONS GROUP</b> Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	Grower : City of Winchester NMPs  PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 24 of 30
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Lab Number : 08491

Field Id :

Sample Id : Park Place

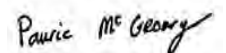
SUGGESTED FERTILIZATION PROGRAM							
First Application		Second Application		Third Application		Fourth Application	
#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer
12	10-20-15	12	10-0-20	8	16-4-8		

Comments:

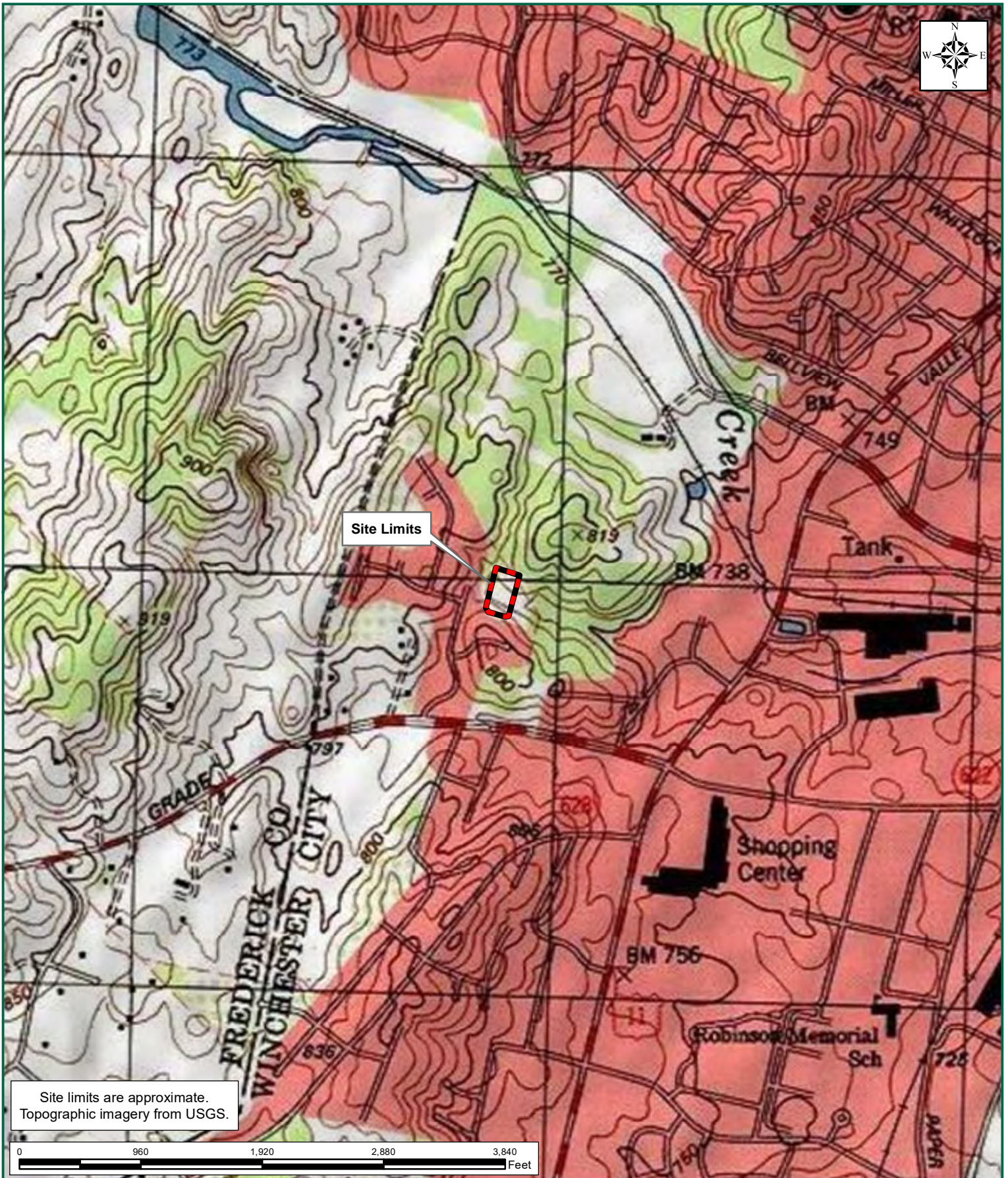
**Lawn**

Limestone application is targeted to bring soil pH to 6.5.

- Apply dolomitic lime to raise pH and improve the magnesium level.
- Apply the amount of lime recommended in first page to raise pH
- The amount of fertilizer recommended on the first page is the total amount needed for the entire growing season. Split into 3-4 applications to keep the lawn green and prevent fertilizer loss. You should not apply more than 0.7 lbs of soluble nitrogen per 1000 square feet in a 30 day period. Or more than 0.9 lbs of nitrogen per 1000 square feet if you are using a slow or controlled release product in a 30 day period. Custom blend is best to meet exactly the requirement, if this is impossible, the above specific fertilizer application is a general guideline, if the specified grades can not be found, replace with fertilizer having similar N:P:K ratio. The best time to apply fertilizer for cool season grass (bluegrass, fescue, ryegrass) is in the Fall when the grass is growing. For Mid-Atlantic region the time is from late August to November. For Northeast region the time is from mid August to October. Fall application should start as soon as the day time high temperature is below 80-85F, apply with the interval of one month. If you start application late in the Fall and do not finish all three applications, repeat the same applications in the Fall of next year. Spring application is recommended when exceptional fertilizer loss due to heavy spring rain leaching and the grasses look pale green. Spring application can start as soon as the grass starts to grow in April. In the case of exceptional warm spring, the application can be made earlier.







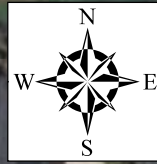
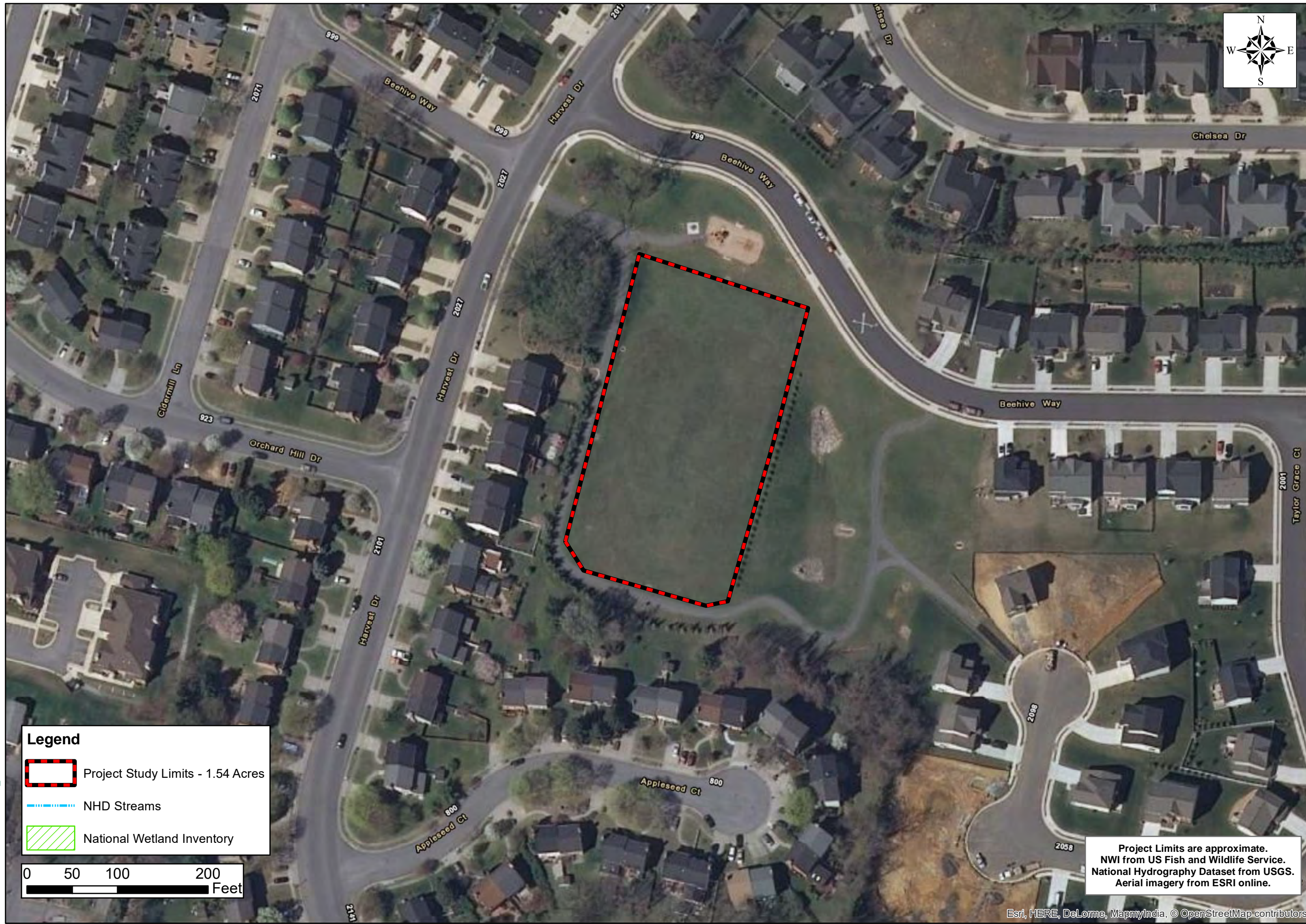
**WINCHESTER NUTRIENT MANAGEMENT PLANS - PARK PLACE PARK**  
 CITY OF WINCHESTER, VIRGINIA  
**FIGURE 1: VICINITY MAP**

**TIMMONS GROUP**  
 YOUR VISION ACHIEVED THROUGH OURS.

TIMMONS GROUP JOB NUMBER: 36284.007  
 PROJECT STUDY LIMITS: 1.54 ACRES  
 LATITUDE: 39° 09' 59.8" N  
 LONGITUDE: 78° 11' 20.8" W

U.S.G.S. QUADRANGLE(S): WINCHESTER  
 DATE(S): 2013  
 WATERSHED(S): CONOCOHEAGUE-OPEQUON  
 HYDROLOGIC UNIT CODE(S): 02070004





**Legend**

- Project Study Limits - 1.54 Acres
- NHD Streams
- National Wetland Inventory

0 50 100 200 Feet

Project Limits are approximate.  
 NWI from US Fish and Wildlife Service.  
 National Hydrography Dataset from USGS.  
 Aerial imagery from ESRI online.

**TIMMONS GROUP**

WINCHESTER NUTRIENT MANAGEMENT PLANS - PARK PLACE PARK  
 CITY OF WINCHESTER, VIRGINIA

**FIGURE 2: ENVIRONMENTAL INVENTORY MAP**

THIS DRAWING PREPARED AT THE  
 CORPORATE OFFICE  
 1001 Boulders Parkway, Suite 300 / Richmond, VA 23225  
 TEL 804.202.6500 FAX 804.560.7648 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS

Site Development | Residential | Infrastructure | Technology | Environmental

DATE	REVISION DESCRIPTION
03/10/2106	

DATE  
 03/10/2106

DRAWN BY  
 B. NORRIS

DESIGNED BY  
 B. NORRIS

CHECKED BY  
 E. VIRTIS

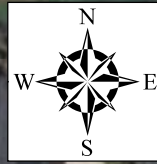
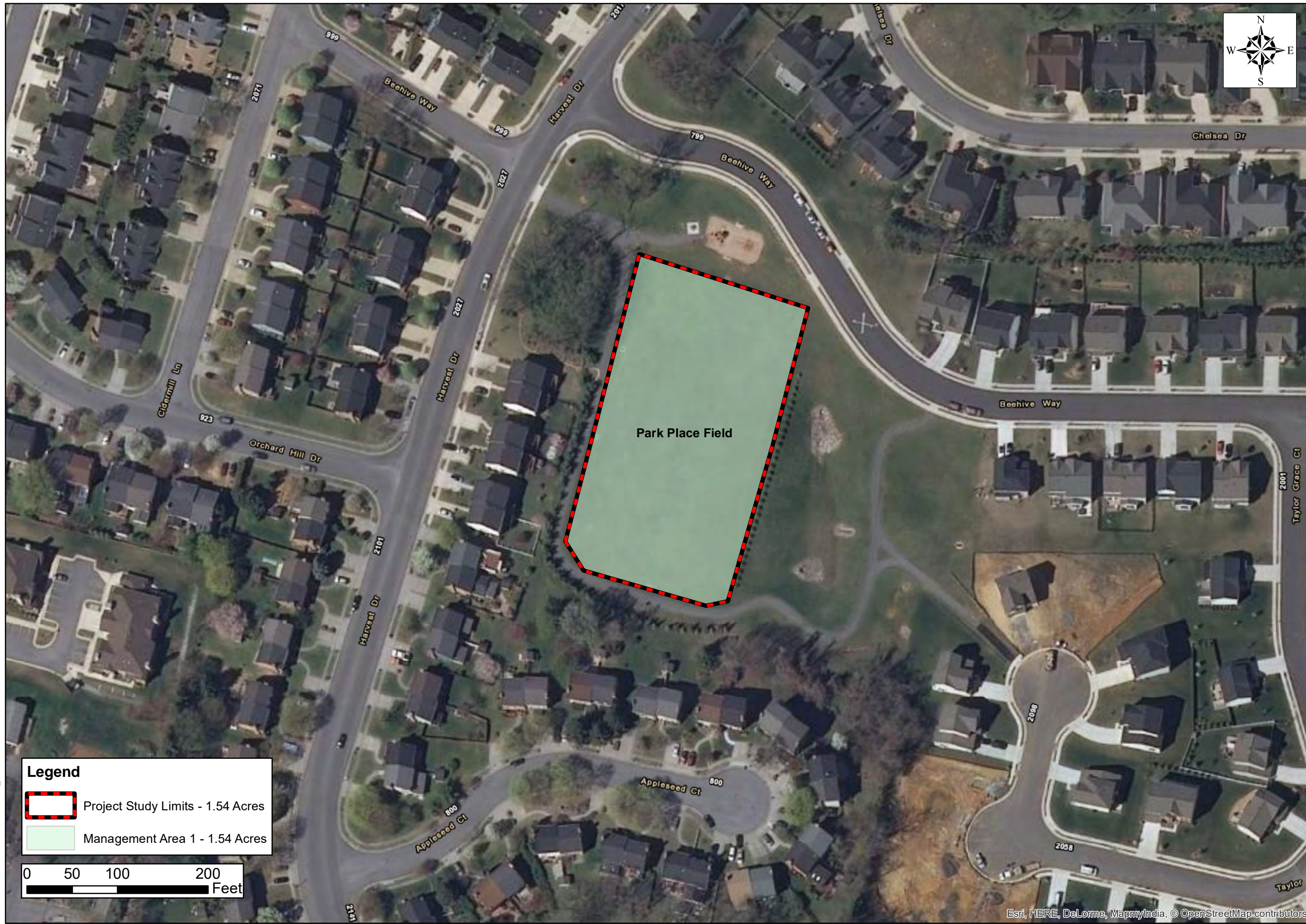
SCALE  
 1" = 100'

JOB NUMBER  
 36284.007

SHEET NO.  
 1 OF 1

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**Legend**

- Project Study Limits - 1.54 Acres
- Management Area 1 - 1.54 Acres

0 50 100 200  
Feet

**TIMMONS GROUP**

WINCHESTER NUTRIENT MANAGEMENT PLANS - PARK PLACE PARK  
CITY OF WINCHESTER, VIRGINIA

**FIGURE 3: NUTRIENT MANAGEMENT AREAS MAP**

THIS DRAWING PREPARED AT THE  
CORPORATE OFFICE  
1001 Boulders Parkway, Suite 300 / Richmond, VA 23225  
TEL 804.202.6500 FAX 804.560.7648 www.timmons.com

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Site Development | Residential | Infrastructure | Technology | Environmental

REVISION DESCRIPTION

DATE	REVISION DESCRIPTION
03/30/2106	

JOB NUMBER  
36284.007

SHEET NO.  
1 OF 1

DATE  
03/30/2106

DRAWN BY  
B. NORRIS

DESIGNED BY  
B. NORRIS

CHECKED BY  
E. VIRTIS

SCALE  
1" = 100'

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Matthew J. Strickler  
Secretary of Natural Resources

Clyde E. Cristman  
Director



Rochelle Altholz  
Deputy Director of  
Administration and Finance

Russell W. Baxter  
Deputy Director of  
Dam Safety & Floodplain  
Management and Soil & Water  
Conservation

Thomas L. Smith  
Deputy Director of Operations

**COMMONWEALTH of VIRGINIA**  
DEPARTMENT OF CONSERVATION AND RECREATION

Mr. Lambert  
Rouss City Hall, 15 N Cameron St.  
Winchester VA, 22601

4/17/2019

**Subject: Park Place Nutrient Management Plan Review**

The following nutrient management plan has been reviewed by Nick Yakish and confirmed by the Virginia Department of Conservation & Recreation to be developed in accordance with the Code of Virginia 10.1-104.2. Please note that this plan has not been reviewed for compliance with more restrictive requirements from other specific legislative, regulatory or incentive programs.

Plan Name	Planner	Acres	Start Date	Expiration Date
Park Place	Parker Osterloh	1.54	3/15/2019	3/15/2022

A copy of this letter should be kept with your nutrient management plan. Initiation of plan revision is recommended by the Department to occur at least six months prior to the expiration date. If you have any questions concerning this letter or reviews, please contact me via phone or email.

Sincerely,

A handwritten signature in black ink, appearing to read "Nick Yakish".

Nick Yakish  
Urban Nutrient Management Coordinator  
Department of Conservation and Recreation  
600 East Main St., 24<sup>th</sup> Floor  
Richmond, Virginia 23219  
(804) 389-5439  
nicholas.yakish@dcr.virginia.gov

# Nutrient Management Plan

## Weaver Park

Prepared For:

Tommy Lambert  
City of Winchester  
Rouss City Hall, 15 N. Cameron Street  
Winchester, VA 22601  
540-667-1815

Prepared By:

Parker Osterloh, Timmons Group  
1001 Boulders Parkway, Suite 300  
Richmond, VA 23225  
804-200-6457  
Certification Code: #920  
Total Managed Area Acreage: 1.28

The purpose of this Nutrient Management Plan is to ensure minimum movement of Nitrogen and phosphorous from the specified area of application to surface and groundwaters where they can potentially have a detrimental effect on water quality as well as ensuring plants have optimum soil nutrient availability for maximum productivity and quality. By following this soil test based plan you are helping to protect waters of the Chesapeake Bay.

If you have any questions, please contact your plan writer, local Virginia Cooperative Extension Agent, or the Department of Conservation and Recreation Nutrient Management Program.

# Nutrient Management Plan For:

## Weaver Park

### Landowner Information:

Company Name	City of Winchester
Customer Name	Tommy Lambert
Mailing Address	Rouss City Hall, 15 N. Cameron Street
City, State Zip	Winchester, VA 22601
Phone	540-667-1815
Email	Thomas.lambert@winchesterva.gov

### Planner Information:

Planner Name	Parker Osterloh
Mailing Address	1001 Boulders Parkway, Suite 300
City, State Zip	Richmond, VA 23225
Phone	804-200-6457
Fax	804-560-1016
Email	Parker.osterloh@timmons.com
Certification Code	#920

### Location Information:

Physical Address	167 Bruce Drive
City, State Zip	Winchester, VA 22601
Latitude	39° 08' 58.9" N
Longitude	78° 10' 30.9" W
VAHU6 Watershed Code	PU17 Abrams Creek
County	City of Winchester

### Acreage:

Total	55,756 square feet (1.28 acres)
-------	---------------------------------

Plan Start Date	3/15/2019
Plan End Date	3/15/2022

Planner Signature:



# Narrative

This Nutrient Management Plan has been prepared by Timmons Group, on behalf of the City of Winchester. Weaver Park is located on Bruce Drive in Winchester, Virginia, east of South Pleasant Valley Road and west of Baldwin Street (see [Figure 1: Vicinity Map](#)). The park has one athletic field, a basketball court, and a gravel parking lot. The site is relatively flat with slopes less than 2%. No wetlands were found to be present within the site limits during the January 29, 2019 site visit and no wetlands or streams were depicted within the site limits as shown on [Figure 2: Environmental Inventory Map](#). There were no wells, subsurface tile drains, springs, sinkholes, rock outcrops, land with slopes steeper than 15%, or qualifying soil types observed onsite. Therefore, no environmentally sensitive areas were identified within the nutrient management areas.

Using aerial photography and through discussions with City of Winchester staff, a 1.28-acre area (55,756 sq ft) was identified as managed turf where fertilizer is applied. Managed turf on the athletic field (Weaver Field) at Weaver Park is comprised of a cool season grass.

This plan is effective for three years (until March 15, 2022) or until significant changes to maintenance practices occur. Should the City of Winchester decide to fertilize any locations within Weaver Park outside of these managed areas, this Nutrient Management Plan should be updated with recommendations for the additional area(s). Other significant changes would include: changing turf species in the athletic fields, renovating an athletic field and the existing underlying soil, creation of an additional athletic field, expansion of the area to be included under this nutrient management plan, or other changes that could alter nutrient recommendations and timing.

One management area was determined for Weaver Park. Management Area 1 (Weaver Field) is shown on [Figure 3: Nutrient Management Areas Map](#). Based on the Frederick County, Virginia average first killing frost date of October 15th (Fall), the average last killing frost date of April 15th (Spring), and the cool season turf identified onsite, fertilizer applications at management area 1 should occur within the cool season application period of March 4th to November 26th. Nutrient application instructions are identified in the nutrient management worksheet of this plan.

Applications of nutrients should not occur on frozen or snow-covered ground. Any fertilizer that makes its way onto impervious surfaces should be swept or blown back into pervious turfgrass-covered areas. Do not use fertilizers as ice melt. Nutrient applications should not be completed when significant runoff producing events are anticipated.

**Every fertilizer application should be recorded in the record sheet provided.** Any questions or concerns with fertilizer products or record keeping should be brought to the plan writer's attention.

# Nutrient Management Worksheet

Property:	Weaver Park								
Prepared:	3/15/19						Species:	Cool Season	
Expires:	3/15/22								
Management Area	Application Month/Day	# of Apps	Application Interval	Fertilizer Product	% Slow Release N	NPK Value of Fertilizer Product	Total NPK lbs/1,000 square feet	Required lbs/1,000 ft <sup>2</sup> of Fertilizer Product to Meet Target Application Rate	Total Required lbs per area
						N - P <sub>2</sub> O <sub>5</sub> - K <sub>2</sub> O	N - P <sub>2</sub> O <sub>5</sub> - K <sub>2</sub> O		
<b>Management Area 1: Weaver Field</b> acreage = approximately 1.28  Maximum 4.2-1.5-2.0	4/15 - 5/15	1		SCU (30-0-10)	50%	30 - 0 - 10	0.50 - 0.00 - 0.17	1.7	93
	6/1 - 6/15	1		custom blend SCU (10-15-10)	25%	10 - 15 - 10	0.50 - 0.75 - 0.50	5.0	279
	8/15 - 8/31	1		custom blend SCU (10-15-10)	25%	10 - 15 - 10	0.50 - 0.75 - 0.50	5.0	279
	9/15 - 11/30	3	> 30 days	SCU (30-0-10)	50%	30 - 0 - 10	0.90 - 0.00 - 0.30	3.0	167
	*Recommended Total Annual NPK Application							4.2 - 1.50 - 2.07	
<b>Notes</b>	The annual application of total nitrogen <b>should not exceed 4.5 lbs N per 1000 sq ft</b> (maximum for intensively managed cool season athletic fields). During the months of September, October, and November, total nitrogen should not exceed 0.9 lbs per 1000 sq ft of slow or controlled release fertilizer sources or 0.7 lbs per 1000 sq ft of water soluble nitrogen (WSN) per application, with a minimum of 30 days between applications. During the months of April, May, June, and August, total nitrogen should not exceed 0.5 lbs per 1000 sq ft per application, with a minimum of 30 days between applications. Applications should fall within the cool season application window identified in the narrative of this plan.								
<b>Lime Recommendations</b>	* Recommendations are targeted to bring soil pH to 6.2 for optimal growth of turfgrass *  No lime or sulfur ammendments are necessary at this time.								





# Soil Test Reports

Soil samples were taken from the managed turfgrass at the Weaver Park athletic field on January 29, 2019. Soil samples were analyzed by Waypoint Analytical (formerly A&L Eastern Laboratories). Standard soil test results provide values for pH, phosphorus, calcium, magnesium, potassium, cation exchange capacity, and organic matter. The soil samples collected are valid for the life of this plan (three years) or upon a major renovation or redesign of the park, whichever occurs sooner.

## **A. Management Area 1 - 1.28 acres (Weaver Field)**

The phosphorus level was Medium (M) for the athletic field. Applications of phosphorus are recommended, not to exceed 1.5 lbs/1,000 sq ft annually. See additional notes on the nutrient application worksheet. The potassium level was High (H) for the athletic field. Applications of potassium are recommended, at approximately 0.75 lb/1,000 sq ft annually. This potassium recommendation exceeds that derived from the soil analysis. However, potassium is not an environmentally regulated nutrient and application of surplus potassium will only increase strength and vigor of turfgrass roots. Nitrogen applications are recommended as 4.2 lbs/1,000 sq ft annually based on maximum nitrogen per application rates. The annual maximum nitrogen application rate for cool season grasses on intensively managed athletic fields 4.2 lbs/1,000 sq ft (see the Nutrient Management Worksheet for additional detail).

# Standards and Criteria

## Section VI. Turfgrass Nutrient Recommendations for Home Lawns, Office Parks, Public Lands and Other Similar Residential/Commercial Grounds

### Definitions

For the purposes of this section, the following definitions, as presented by the Association of American Plant Food Control Officials (AAPFCO), apply:

“Enhanced efficiency fertilizer” describes fertilizer products with characteristics that allow increased plant nutrient availability and reduce the potential of nutrient losses to the environment when compared to an appropriate reference product.

“Slow or controlled release fertilizer” means a fertilizer containing a plant nutrient in a form which delays its availability for plant uptake and use after application, or which extends its availability to the plant significantly longer than a reference “rapidly available nutrient fertilizer” such as ammonium nitrate, urea, ammonium phosphate or potassium chloride. A slow or controlled release fertilizer must contain a minimum of 15 percent slowly available forms of nitrogen.

“Water soluble nitrogen”, “WSN” and “readily available nitrogen” means: Water soluble nitrogen in either ammonical, urea, or nitrate form that does not have a controlled release, or slow response.

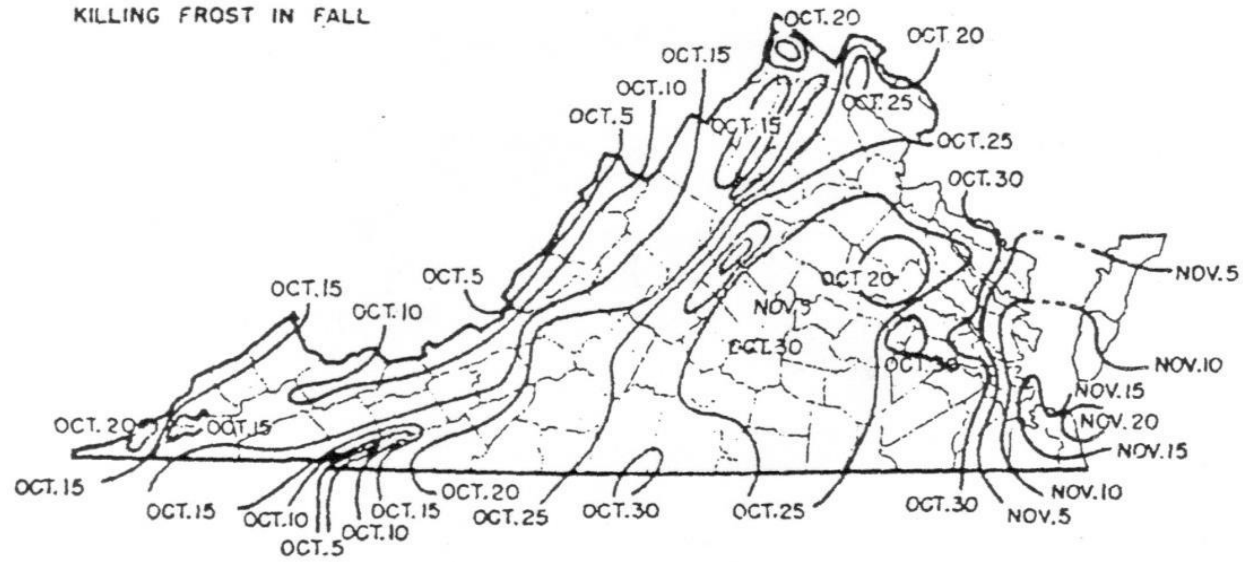
### Recommended Season of Application For Nitrogen Fertilizers - Applies to all Turf

A nitrogen fertilization schedule weighted toward fall application is recommended and preferred for agronomic quality and persistence of cool season turfgrass; however, the acceptable window of applications is much wider than this for nutrient management. The nutrient management recommended application season for nitrogen fertilizers to cool season turfgrasses begins six weeks prior to the last spring average killing frost date and ends six weeks past the first fall average killing frost date (see Figures 6-1 & 6-2). Applications of nitrogen during the intervening late fall and winter period should be avoided due to higher potential leaching or runoff risk, but where necessary, apply no more than 0.5 pounds per 1,000 ft<sup>2</sup> of water soluble nitrogen within a 30 day period. Higher application rates may be used during this late fall and winter period by using materials containing slowly available sources of nitrogen, if the water soluble nitrogen contained in the fertilizer does not exceed the recommended maximum of 0.5 pounds per 1,000 ft<sup>2</sup> rate. Do not apply nitrogen or phosphorus fertilizers when the ground is frozen.

The acceptable nitrogen fertilizer application season for non-overseeded warm season turfgrass begins no earlier than the last spring average killing frost date and ends no later than one month prior to the first fall average killing frost date (see Figures on next sheet).

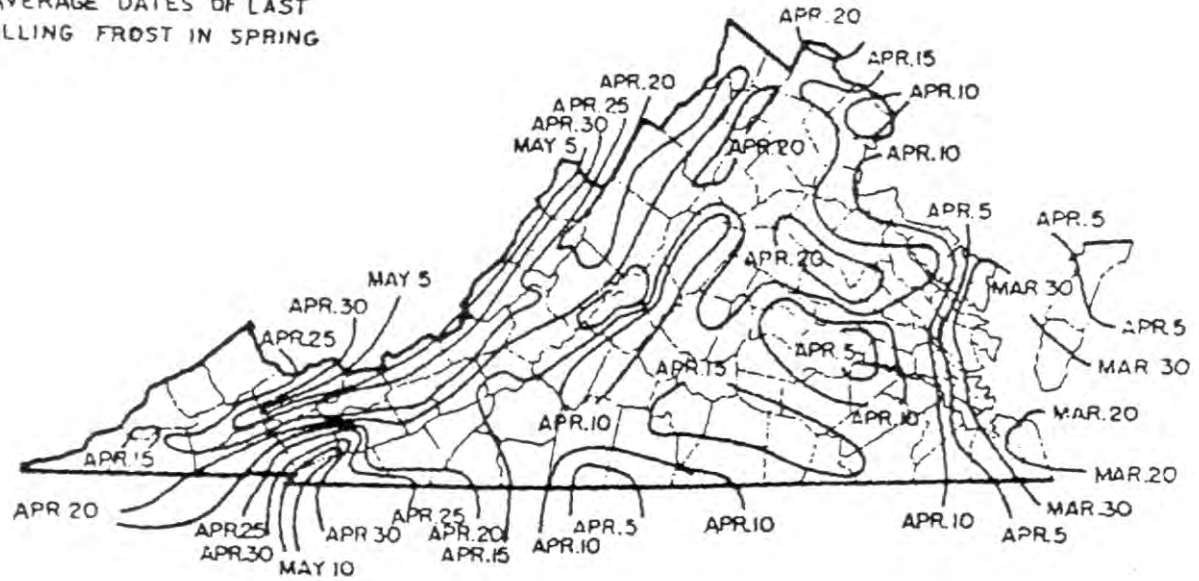
### VIRGINIA

AVERAGE DATES OF FIRST  
KILLING FROST IN FALL



### VIRGINIA

AVERAGE DATES OF LAST  
KILLING FROST IN SPRING



### **Per Application Rates**

Do not apply more than 0.7 pounds of water soluble nitrogen per 1,000 ft<sup>2</sup> within a 30 day period. For cool season grasses, do not apply more than 0.9 pounds of total nitrogen per 1,000 ft<sup>2</sup> within a 30 day period. For warm season grasses, do not apply more than 1.0 pounds of total nitrogen per 1,000 ft<sup>2</sup> within a 30 day period. Lower per application rates of water soluble nitrogen sources or use of slowly available nitrogen sources should be utilized on very permeable sandy soils, shallow soils over fractured bedrock, or areas near water wells.

### **Use of Slowly Available Forms of Nitrogen**

For slow or controlled release fertilizer sources, or enhanced efficiency fertilizer sources, no more than 0.9 pounds of nitrogen per 1,000 ft<sup>2</sup> may be applied to cool season grasses within a 30 day period and no more than 1.0 pounds of nitrogen per 1,000 ft<sup>2</sup> may be applied to warm season grasses within a 30 day period.

Provided the fertilizer label guarantees that the product can be used in such a way that it will not release more than 0.7 pounds of nitrogen per 1,000 ft<sup>2</sup> in a 30 day period, no more than 2.5 pounds of nitrogen per 1,000 ft<sup>2</sup> may be applied in a single application. Additionally, total annual applications shall not exceed 80 percent of the annual nitrogen rates for cool or warm season grasses.

### **Phosphorus and Potassium Nutrient Needs (Established Turf)**

Apply phosphorus (P<sub>2</sub>O<sub>5</sub>) and potassium (K<sub>2</sub>O) fertilizers as indicated necessary by a soil test using the following guidelines:

\* For the lower soil test level within a rating, use the higher side of the range and for higher soil test level

within a rating use the lower side of the recommendation range. (For example the recommendation for a

P<sub>2</sub>O<sub>5</sub> soil test level of L- would be 3 pounds per 1,000 ft<sup>2</sup>.)

Do not use high phosphorus ratio fertilizers such as 10-10-10 or 5-10-10, unless soil tests indicate phosph

orus availability below the M+ level.

### **Recommendations for Establishment of Turf**

These recommendations are for timely planted turfgrass, that is, the seed or vegetative material (sod, plugs, and /or sprigs), are planted at a time of the year when temperatures and moisture are adequate to maximize turfgrass establishment. These recommended establishment periods would be late summer to early fall for cool-season turfgrasses and late spring through mid-summer for warm-season turfgrasses.

## **Nitrogen Applications**

At the time of establishment, apply no more than 0.9 pounds per 1,000 ft<sup>2</sup> of total nitrogen for cool season grasses or 1.0 pounds per 1,000 ft<sup>2</sup> of total nitrogen for warm season grasses, using a material containing slowly available forms of nitrogen, followed by one or two applications beginning 30 days after planting, not to exceed a total of 1.8 pounds per 1,000 ft<sup>2</sup> total for cool season grasses and 2.0 pounds per 1,000 ft<sup>2</sup> for warm season grasses for the establishment period. Applications of WSN cannot exceed more than 0.7 pounds per 1,000 ft<sup>2</sup> within a 30 day period.

## **Phosphorus and Potassium Recommendations for Establishment**

\* For the lower soil test level within a rating, use the higher side of the range and for higher soil test level within a rating use the lower side of the recommendation range.

## **Nitrogen Management on Athletic Fields - Cool Season Grasses**

- This program is intended for those fields which are under heavy use.
- Nitrogen recommendations are based on the assumption that there is adequate soil moisture to promote good turf growth at the time of application. If no rainfall has occurred since the last application, further applications should be delayed until significant soil moisture is available.

### **Notes:**

- Soluble nitrogen rates of 0.25 pounds per 1,000 ft<sup>2</sup> or less which may be a component of a pesticide or minor element application may be applied any time the turf is actively growing, but must be considered with the total annual nitrogen application rate.

- WSN = water soluble nitrogen; WIN = water insoluble nitrogen

(a) Intensive managed areas must be irrigated.

(b) The beginning and ending dates for application of nitrogen shall be determined using guidance and frost date maps contained in the preceding Season of Application for Nitrogen section, using Figures 6-1 and 6-2.

(c) Rates up to 0.9 pounds per 1,000 ft<sup>2</sup> of total nitrogen can be applied using a material containing slowly available forms of nitrogen, with a minimum of 30 days between applications.

(d) Make this application only if turf use warrants additional nitrogen for sustaining desirable growth and /or color.

## **Nitrogen Management on Athletic Fields - Warm Season Grasses**

The following comments apply to both Naturally Occurring or Modified Sand based Fields and Predominantly Silt/Clay Soil Fields:

- Annual nitrogen rates for warm season grasses shall not exceed **4 pounds** in areas which have the average first killing frost on or before October 20, and shall not exceed **5 pounds** in areas which have the average first killing frost after October 20 as shown in Figure 6-1. Nitrogen rates and timings for overseeding warm season grasses are not included in these rates.
- April 15 - May 15 applications should not be made until after complete green-up of turf.
- Nitrogen applications June through August should be coordinated with anticipated rainfall if irrigation is not available.

Use the lower end of the ranges for non-irrigated fields and the higher end of the ranges should be used on fields with irrigation.

Nitrogen rates towards the higher end of the ranges may be applied on heavily used fields to accelerate recovery, however per application and annual rates cannot be exceeded.

For overseeded warm season grasses, an additional 0.7 pounds per 1,000ft<sup>2</sup> of WSN may be applied in the Fall after the perennial ryegrass overseeding is well established. The WSN must be applied as two applications not to exceed 0.35 pounds per 1,000 ft<sup>2</sup> of nitrogen each, with a minimum of 15 days between applications. Additional WSN application of 0.5 pounds per 1,000 ft<sup>2</sup> may be made in February-March to overseeded perennial ryegrass if growth and color indicate need. Alternatively, split applications of 0.5 pounds of nitrogen per 1,000 ft<sup>2</sup> each with a minimum of 15 days between applications may be applied using a material containing slowly available nitrogen sources.



# Reference Materials and Notes

**Virginia Nutrient Management Standards and Criteria, Revised July 2014, Department of Conservation and Recreation, Division of Soil and Water Conservation**

**ESRI Aerial Photography**

# Fertilizer Application Records

Customer Information					Management Area Information			
Name:	City of Winchester - Weaver Park				Management Area ID:	Weaver Field		
Address:	167 Bruce Drive				Management Area Size:	55,756 sq ft		
	Winchester, VA 22601				Plant Species:	Tall Fescue		
Phone #:	540-667-1815				Notes:			
Date (M/D/Y)	Supervisor/Applicator	Weather Conditions			Fertilizer Analysis	Rate	Amount Fertilizer Used	Application Equipment Used
		Temp	Wind Speed	Precip				
When was the last time your fertilizer equipment was calibrated??? For information on calibration see Chapter 10 of the "Urban Nutrient Management Handbook". Available for download at <a href="http://pubs.ext.vt.edu/430/430-350/430-350.html">http://pubs.ext.vt.edu/430/430-350/430-350.html</a>								

**SOIL ANALYSIS**

Client : TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	Grower : City of Winchester NMPs  PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 7 of 30
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Lab Number : 08482

Field Id :

Sample Id : Weaver

Test	Results	SOIL TEST RATINGS					Calculated Cation Exchange Capacity
		Very Low	Low	Medium	Optimum	Very High	
Soil pH	6.2						11.4 meq/100g
Buffer pH	6.79						
Phosphorus (P)	39 ppm						<b>Calculated Cation Saturation</b> %K 3.7 %Ca 71.4 %Mg 12.4 %H 12.3 Hmeq 1.4  <b>K : Mg Ratio</b> 0.29 <b>Ca : Mg Ratio</b> 5.76
Potassium (K)	166 ppm						
Calcium (Ca)	1628 ppm						
Magnesium (Mg)	170 ppm						
Sulfur (S)							
Boron (B)							
Copper (Cu)							
Iron (Fe)							
Manganese (Mn)							
Zinc (Zn)							
Sodium (Na)							
Soluble Salts							
Organic Matter	6.6 % ENR 150						
Nitrate Nitrogen							

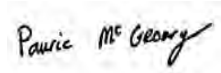
**SOIL FERTILITY GUIDELINES**

Crop : Lawn

Rec Units: LB/1000 SF

(lbs)	LIME	(tons)	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	Mg	S	B	Cu	Mn	Zn	Fe
50			4.0	0.5	0	0						
Crop :												Rec Units:

Comment :



**SOIL ANALYSIS**

Client : TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	Grower : City of Winchester NMPs  PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 8 of 30
--	--	--

Lab Number : 08482

Field Id :

Sample Id : Weaver

SUGGESTED FERTILIZATION PROGRAM							
First Application		Second Application		Third Application		Fourth Application	
#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer
8	16-4-8	8	16-4-8	6	21-3-7		

Comments:

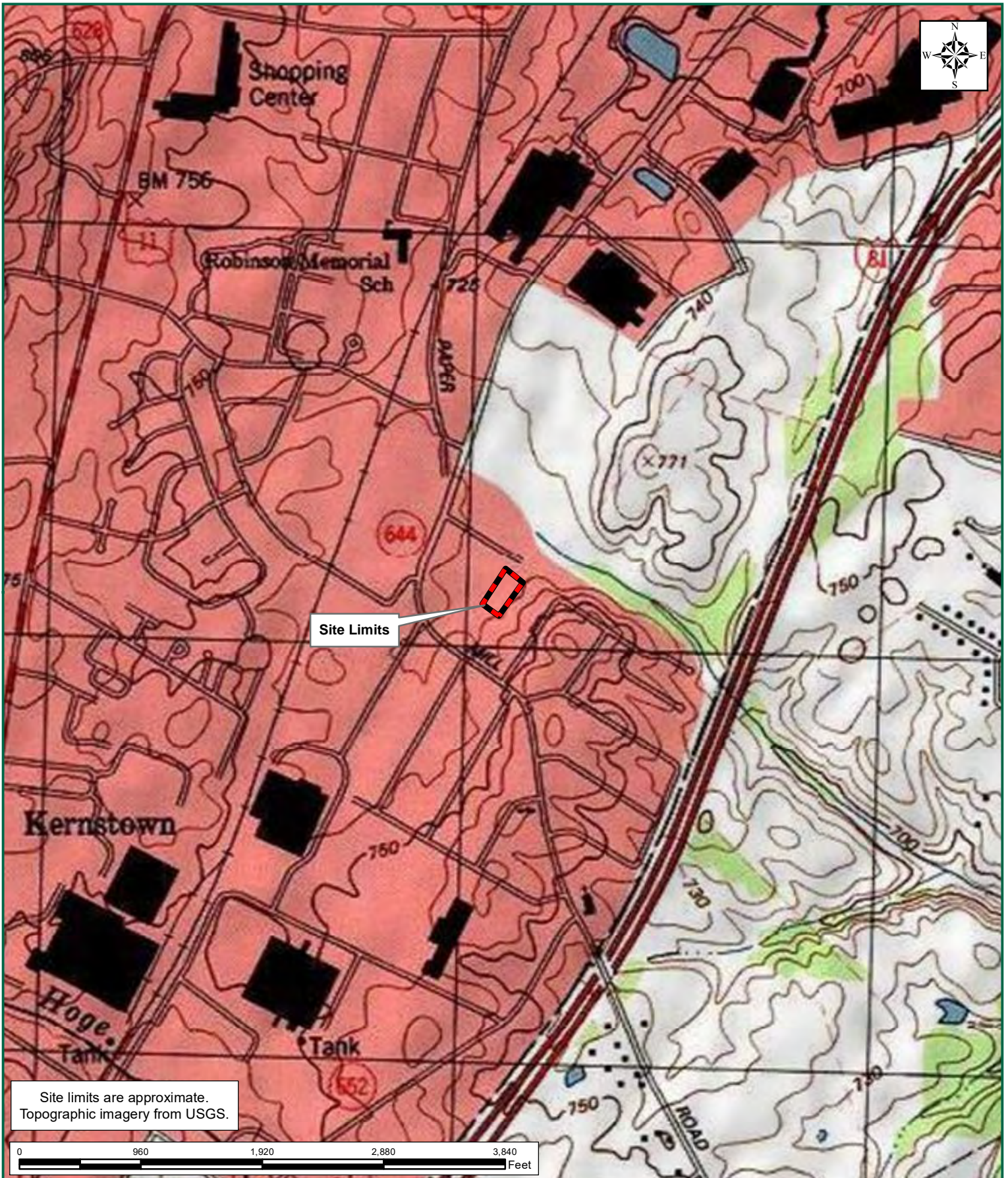
**Lawn**

Limestone application is targeted to bring soil pH to 6.5.

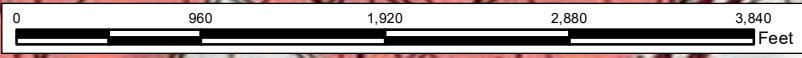
- Apply the amount of lime recommended in first page to raise pH
- The amount of fertilizer recommended on the first page is the total amount needed for the entire growing season. Split into 3-4 applications to keep the lawn green and prevent fertilizer loss. You should not apply more than 0.7 lbs of soluble nitrogen per 1000 square feet in a 30 day period. Or more than 0.9 lbs of nitrogen per 1000 square feet if you are using a slow or controlled release product in a 30 day period. Custom blend is best to meet exactly the requirement, if this is impossible, the above specific fertilizer application is a general guideline, if the specified grades can not be found, replace with fertilizer having similar N:P:K ratio. The best time to apply fertilizer for cool season grass (bluegrass, fescue, ryegrass) is in the Fall when the grass is growing. For Mid-Atlantic region the time is from late August to November. For Northeast region the time is from mid August to October. Fall application should start as soon as the day time high temperature is below 80-85F, apply with the interval of one month. If you start application late in the Fall and do not finish all three applications, repeat the same applications in the Fall of next year. Spring application is recommended when exceptional fertilizer loss due to heavy spring rain leaching and the grasses look pale green. Spring application can start as soon as the grass starts to grow in April. In the case of exceptional warm spring, the application can be made earlier.

*Pauric McGroary*





Site limits are approximate.  
Topographic imagery from USGS.






<p><b>WINCHESTER NUTRIENT MANAGEMENT PLANS - WEAVER PARK</b> CITY OF WINCHESTER, VIRGINIA <b>FIGURE 1: VICINITY MAP</b></p>	<p><b>TIMMONS GROUP</b> YOUR VISION ACHIEVED THROUGH OURS.</p>
<p>TIMMONS GROUP JOB NUMBER: 36284.007 PROJECT STUDY LIMITS: 1.28 ACRES LATITUDE: 39° 08' 58.9" N LONGITUDE: 78° 10' 30.9" W</p>	<p>U.S.G.S. QUADRANGLE(S): WINCHESTER DATE(S): 2013 WATERSHED(S): CONOCOHEAGUE-OPEQUON HYDROLOGIC UNIT CODE(S): 02070004</p>





**Legend**

-  Project Study Limits - 1.28 Acres
-  NHD Streams
-  National Wetland Inventory

0 50 100 200 Feet

Project Limits are approximate.  
 NWI from US Fish and Wildlife Service.  
 National Hydrography Dataset from USGS.  
 Aerial imagery from ESRI online.

# TIMMONS GROUP

WINCHESTER NUTRIENT MANAGEMENT PLANS - WEAVER PARK  
 CITY OF WINCHESTER, VIRGINIA

FIGURE 2: ENVIRONMENTAL INVENTORY MAP

YOUR VISION ACHIEVED THROUGH OURS  
 Site Development | Residential | Infrastructure | Technology | Environmental

DATE	REVISION DESCRIPTION
03/10/2016	

JOB NUMBER  
36284.007

SHEET NO.  
1 OF 1

THIS DRAWING PREPARED AT THE  
 CORPORATE OFFICE  
 1001 Boulders Parkway, Suite 300 / Richmond, VA 23225  
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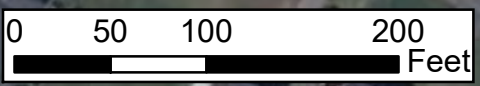
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**Legend**

- Project Study Limits - 1.28 Acres
- Management Area 1 - 1.28 Acres



# TIMMONS GROUP

WINCHESTER NUTRIENT MANAGEMENT PLANS - WEAVER PARK  
CITY OF WINCHESTER, VIRGINIA

**FIGURE 3: NUTRIENT MANAGEMENT AREAS MAP**

YOUR VISION ACHIEVED THROUGH OURS  
Site Development | Residential | Infrastructure | Technology | Environmental

DATE	REVISION DESCRIPTION
03/30/2016	

THIS DRAWING PREPARED AT THE  
CORPORATE OFFICE  
1001 Boulders Parkway, Suite 300 / Richmond, VA 23225  
TEL 804.202.6500 FAX 804.560.7648 www.timmons.com

JOB NUMBER  
36284.007  
SHEET NO.  
1 OF 1

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Matthew J. Strickler  
Secretary of Natural Resources

Clyde E. Cristman  
Director



Rochelle Altholz  
Deputy Director of  
Administration and Finance

Russell W. Baxter  
Deputy Director of  
Dam Safety & Floodplain  
Management and Soil & Water  
Conservation

Thomas L. Smith  
Deputy Director of Operations

**COMMONWEALTH of VIRGINIA**  
DEPARTMENT OF CONSERVATION AND RECREATION

Mr. Lambert  
Rouss City Hall, 15 N Cameron St.  
Winchester VA, 22601

4/17/2019

Subject: Weaver Park Nutrient Management Plan Review

The following nutrient management plan has been reviewed by Nick Yakish and confirmed by the Virginia Department of Conservation & Recreation to be developed in accordance with the Code of Virginia 10.1-104.2. Please note that this plan has not been reviewed for compliance with more restrictive requirements from other specific legislative, regulatory or incentive programs.

Plan Name	Planner	Acres	Start Date	Expiration Date
Weaver Park	Parker Osterloh	1.28	3/15/2019	3/15/2022

A copy of this letter should be kept with your nutrient management plan. Initiation of plan revision is recommended by the Department to occur at least six months prior to the expiration date. If you have any questions concerning this letter or reviews, please contact me via phone or email.

Sincerely,

A handwritten signature in black ink, appearing to read "Nick Yakish".

Nick Yakish  
Urban Nutrient Management Coordinator  
Department of Conservation and Recreation  
600 East Main St., 24<sup>th</sup> Floor  
Richmond, Virginia 23219  
(804) 389-5439  
nicholas.yakish@dcr.virginia.gov

600 East Main Street, 24<sup>th</sup> Floor | Richmond, Virginia 23219 | 804-786-6124

*State Parks • Soil and Water Conservation • Outdoor Recreation Planning  
Natural Heritage • Dam Safety and Floodplain Management • Land Conservation*

# Nutrient Management Plan

## Whittier Park

Prepared For:

Tommy Lambert  
City of Winchester  
Rouss City Hall, 15 N. Cameron Street  
Winchester, VA 22601  
540-667-1815

Prepared By:

Parker Osterloh, Timmons Group  
1001 Boulders Parkway, Suite 300  
Richmond, VA 23225  
804-200-6457  
Certification Code: #920  
Total Managed Area Acreage: 1.27

The purpose of this Nutrient Management Plan is to ensure minimum movement of Nitrogen and phosphorous from the specified area of application to surface and groundwaters where they can potentially have a detrimental effect on water quality as well as ensuring plants have optimum soil nutrient availability for maximum productivity and quality. By following this soil test based plan you are helping to protect waters of the Chesapeake Bay.

If you have any questions, please contact your plan writer, local Virginia Cooperative Extension Agent, or the Department of Conservation and Recreation Nutrient Management Program.

# Nutrient Management Plan For:

## Whittier Park

### Landowner Information:

Company Name	City of Winchester
Customer Name	Tommy Lambert
Mailing Address	Rouss City Hall, 15 N. Cameron Street
City, State Zip	Winchester, VA 22601
Phone	540-667-1815
Email	Thomas.lambert@winchesterva.gov

### Planner Information:

Planner Name	Parker Osterloh
Mailing Address	1001 Boulders Parkway, Suite 300
City, State Zip	Richmond, VA 23225
Phone	804-200-6457
Fax	804-560-1016
Email	Parker.osterloh@timmons.com
Certification Code	#920

### Location Information:

Physical Address	900 Whittier Avenue
City, State Zip	Winchester, VA 22601
Latitude	39° 11' 30.2" N
Longitude	78° 10' 39.8" W
VAHU6 Watershed Code	PU17 Abrams Creek
County	City of Winchester

### Acreage:

Total	55,321 square feet (1.27 acres)
Whittier Field 1	27,312 square feet (0.63 acres)
Whittier Field 2	27,747 square feet (0.64 acres)

Plan Start Date	3/15/2019
Plan End Date	3/15/2022

Planner Signature:



# Narrative

This Nutrient Management Plan has been prepared by Timmons Group, on behalf of the City of Winchester. Whittier Park is located on Whittier Avenue in Winchester, Virginia, within a residential development north of Whittier Avenue and south of Isaac Street (see [Figure 1: Vicinity Map](#)). The park has two soccer fields, a basketball court, and a playground. The site is relatively flat with slopes less than 2%. No wetlands were found to be present within the site limits during the March 24, 2016 site visit and no wetlands or streams were depicted within the site limits as shown on [Figure 2: Environmental Inventory Map](#). There were no wells, subsurface tile drains, springs, sinkholes, rock outcrops, land with slopes steeper than 15%, or qualifying soil types observed onsite and therefore, no environmentally sensitive areas were identified within the nutrient management areas.

Using aerial photography and through discussions with City of Winchester staff, a 1.27-acre area (55,059 sq ft) was identified as managed turf where fertilizer is applied. Managed turf on both soccer fields (Whittier Field 1 and Whittier Field 2) at Whittier Park is comprised of a cool season grass mixture.

This plan is effective for three years (until March 15, 2022) or until significant changes to maintenance practices occur. Should the City of Winchester decide to fertilize any locations within Whittier Park outside of these managed areas, this nutrient management plan should be updated with recommendations for the additional area(s). Other significant changes would include: changing turf species in the athletic fields, renovating an athletic field and the existing underlying soil, creation of an additional athletic field, expansion of the area to be included under this nutrient management plan, or other changes that could alter nutrient recommendations and timing.

One management area was determined for Whittier Park. Management Area 1 (Whittier Field 1 & Whittier Field 2) are shown on [Figure 3: Nutrient Management Areas Map](#). Based on the City of Winchester, Virginia average first killing frost date of October 15th (Fall), the average last killing frost date of April 15th (Spring), and the cool season turf identified on both athletic fields, fertilizer applications on these management areas should occur within the cool season application period of March 4th to November 26th. Nutrient application instructions are identified in the nutrient management worksheet of this plan.

Applications of nutrient should not occur on frozen or snow-covered ground. Any fertilizer that makes its way onto impervious surfaces should be swept or blown back into pervious turfgrass-covered areas. Do not use fertilizers as ice melt. Nutrient applications should not be completed when significant runoff producing events are anticipated.

**Every fertilizer application should be recorded in the record sheet provided.** Any questions or concerns with fertilizer products or record keeping should be brought to the plan writer's attention.



# Nutrient Management Worksheet

Property:	Whittier Park (Whittier Field 1 and Whittier Field 2)												
Prepared:	3/15/19						Species:	Cool Season					
Expires:	3/15/22												
Management Areas	Application Month/Day	# of Apps	Application Interval	Fertilizer Product	% Slow Release N	NPK Value of Fertilizer Product	Total NPK lbs/1,000 square feet			Required lbs/1,000 ft <sup>2</sup> of Fertilizer Product to Meet Target Application Rate	Total Required lbs per area		
						N - P <sub>2</sub> O <sub>5</sub> - K <sub>2</sub> O	N	-	P <sub>2</sub> O <sub>5</sub>	-	K <sub>2</sub> O		
<b>Management Area 1:</b> <b>Whittier Field 1,</b> <b>Whittier Field 2</b> acreage = approx. 1.27  Maximum 4.2-2-2	4/15 - 5/15	1		custom bend SCU (10-10-10)	25%	10 - 10 - 10	0.50	-	0.50	-	0.50	5.0	277
	6/1 - 6/15	1		custom bend SCU (10-15-10)	25%	10 - 15 - 10	0.50	-	0.75	-	0.50	5.0	277
	8/15 - 8/31	1		custom bend SCU (10-15-10)	25%	10 - 15 - 10	0.50	-	0.75	-	0.50	5.0	277
	9/15 - 11/30	3	> 30 days	SCU (30-0-10)	50%	30 - 0 - 10	0.90	-	0.00	-	0.30	3.0	166
	*Recommended Total Annual NPK Application							4.2	-	2.00	-	2.40	
<b>Notes</b>	<p>The annual application of total nitrogen <b>should not exceed 4.2 lbs N per 1000 sq ft</b> (maximum for intensively managed cool season athletic fields). During the months of September, October, and November, total nitrogen should not exceed 0.9 lbs per 1000 sq ft of slow or controlled release fertilizer sources or 0.7 lbs per 1000 sq ft of water soluble nitrogen (WSN) per application, with a minimum of 30 days between applications. During the months of April, May, June, and August, total nitrogen should not exceed 0.5 lbs per 1000 sq ft per application, with a minimum of 30 days between applications. Applications should fall within the cool season application window identified in the narrative of this plan.</p>												
<b>Lime/Sulfur Recommendations</b>	<p>* Recommendations are targeted to bring soil pH to 6.2 for optimal growth of turfgrass *</p> <p>Note: Do not apply more than 5 lbs of elemental sulfur per 1000 sq ft per application or more than 10 lbs of elemental sulfur per 1000 sq ft per year. Timing between applications should be minimum of 3 months. Warm temperature and moist soil are needed for sulfur to reduce soil pH.</p> <p><u>Whittier Field 1:</u> To reduce soil pH apply <b>5 pounds of elemental sulfur</b> per 1000 sq ft. Soil tests can be conducted annually to determine if additional sulfur or lime is needed to maintain the soil pH during years 2 and 3 of this nutrient management plan implementation.</p>												



# Soil Test Reports

Soil samples were taken from the managed turfgrass at each of the soccer fields at Whittier Park on January 29, 2019. Soil samples were analyzed by Waypoint Analytical (formerly A&L Eastern Laboratories). Standard soil test results provide values for pH, phosphorus, calcium, magnesium, potassium, cation exchange capacity, and organic matter. The soil samples collected are valid for the life of this plan (three years) or upon a major renovation or redesign of the park, whichever occurs sooner.

## **A. Management Area 1 - 1.27 acres (Whittier Field 1 & Whittier Field 2)**

The phosphorus level was Medium- (M-) for both athletic fields. Applications of phosphorus are recommended, not to exceed 1.0 lb/1,000 sq ft annually. See additional notes on the nutrient application worksheet. The potassium levels ranged between High- (H-) and High (H) for both athletic fields. Applications of potassium are recommended, at approximately 0.75 lb/1,000 sq ft annually. This potassium recommendation exceeds that derived from the soil analysis. However, potassium is not an environmentally regulated nutrient and application of surplus potassium will only increase strength and vigor of turfgrass roots. Nitrogen applications are recommended as 4.2 lbs/1,000 sq ft annually based on maximum nitrogen per application rates. The annual maximum nitrogen application rate for cool season grasses on intensively managed athletic fields is 4.5 lbs/1,000 sq ft (see the Nutrient Management Worksheet for additional detail).

# Standards and Criteria

## Section VI. Turfgrass Nutrient Recommendations for Home Lawns, Office Parks, Public Lands and Other Similar Residential/Commercial Grounds

### Definitions

For the purposes of this section, the following definitions, as presented by the Association of American Plant Food Control Officials (AAPFCO), apply:

“Enhanced efficiency fertilizer” describes fertilizer products with characteristics that allow increased plant nutrient availability and reduce the potential of nutrient losses to the environment when compared to an appropriate reference product.

“Slow or controlled release fertilizer” means a fertilizer containing a plant nutrient in a form which delays its availability for plant uptake and use after application, or which extends its availability to the plant significantly longer than a reference “rapidly available nutrient fertilizer” such as ammonium nitrate, urea, ammonium phosphate or potassium chloride. A slow or controlled release fertilizer must contain a minimum of 15 percent slowly available forms of nitrogen.

“Water soluble nitrogen”, “WSN” and “readily available nitrogen” means: Water soluble nitrogen in either ammonical, urea, or nitrate form that does not have a controlled release, or slow response.

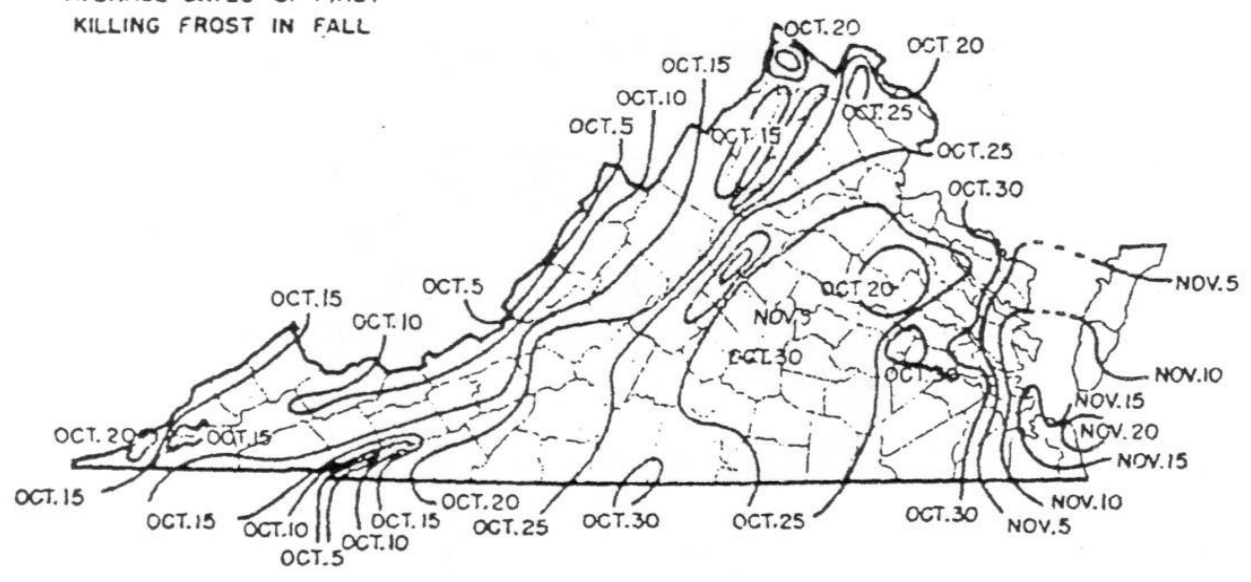
### Recommended Season of Application For Nitrogen Fertilizers - Applies to all Turf

A nitrogen fertilization schedule weighted toward fall application is recommended and preferred for agronomic quality and persistence of cool season turfgrass; however, the acceptable window of applications is much wider than this for nutrient management. The nutrient management recommended application season for nitrogen fertilizers to cool season turfgrasses begins six weeks prior to the last spring average killing frost date and ends six weeks past the first fall average killing frost date (see Figures 6-1 & 6-2). Applications of nitrogen during the intervening late fall and winter period should be avoided due to higher potential leaching or runoff risk, but where necessary, apply no more than 0.5 pounds per 1,000 ft<sup>2</sup> of water soluble nitrogen within a 30 day period. Higher application rates may be used during this late fall and winter period by using materials containing slowly available sources of nitrogen, if the water soluble nitrogen contained in the fertilizer does not exceed the recommended maximum of 0.5 pounds per 1,000 ft<sup>2</sup> rate. Do not apply nitrogen or phosphorus fertilizers when the ground is frozen.

The acceptable nitrogen fertilizer application season for non-overseeded warm season turfgrass begins no earlier than the last spring average killing frost date and ends no later than one month prior to the first fall average killing frost date (see Figures on next sheet).

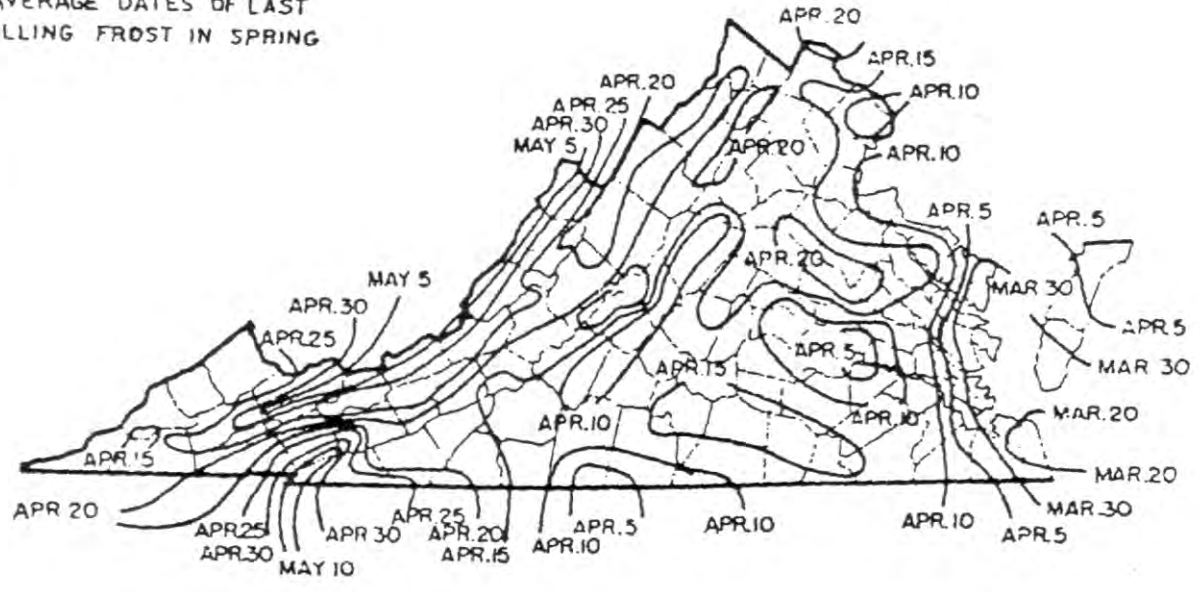
### VIRGINIA

AVERAGE DATES OF FIRST  
KILLING FROST IN FALL



### VIRGINIA

AVERAGE DATES OF LAST  
KILLING FROST IN SPRING



### **Per Application Rates**

Do not apply more than 0.7 pounds of water soluble nitrogen per 1,000 ft<sup>2</sup> within a 30 day period. For cool season grasses, do not apply more than 0.9 pounds of total nitrogen per 1,000 ft<sup>2</sup> within a 30 day period. For warm season grasses, do not apply more than 1.0 pounds of total nitrogen per 1,000 ft<sup>2</sup> within a 30 day period. Lower per application rates of water soluble nitrogen sources or use of slowly available nitrogen sources should be utilized on very permeable sandy soils, shallow soils over fractured bedrock, or areas near water wells.

### **Use of Slowly Available Forms of Nitrogen**

For slow or controlled release fertilizer sources, or enhanced efficiency fertilizer sources, no more than 0.9 pounds of nitrogen per 1,000 ft<sup>2</sup> may be applied to cool season grasses within a 30 day period and no more than 1.0 pounds of nitrogen per 1,000 ft<sup>2</sup> may be applied to warm season grasses within a 30 day period.

Provided the fertilizer label guarantees that the product can be used in such a way that it will not release more than 0.7 pounds of nitrogen per 1,000 ft<sup>2</sup> in a 30 day period, no more than 2.5 pounds of nitrogen per 1,000 ft<sup>2</sup> may be applied in a single application. Additionally, total annual applications shall not exceed 80 percent of the annual nitrogen rates for cool or warm season grasses.

### **Phosphorus and Potassium Nutrient Needs (Established Turf)**

Apply phosphorus (P<sub>2</sub>O<sub>5</sub>) and potassium (K<sub>2</sub>O) fertilizers as indicated necessary by a soil test using the following guidelines:

\* For the lower soil test level within a rating, use the higher side of the range and for higher soil test level

within a rating use the lower side of the recommendation range. (For example the recommendation for a

P<sub>2</sub>O<sub>5</sub> soil test level of L- would be 3 pounds per 1,000 ft<sup>2</sup>.)

Do not use high phosphorus ratio fertilizers such as 10-10-10 or 5-10-10, unless soil tests indicate phosph

orus availability below the M+ level.

### **Recommendations for Establishment of Turf**

These recommendations are for timely planted turfgrass, that is, the seed or vegetative material (sod, plugs, and /or sprigs), are planted at a time of the year when temperatures and moisture are adequate to maximize turfgrass establishment. These recommended establishment periods would be late summer to early fall for cool-season turfgrasses and late spring through mid-summer for warm-season turfgrasses.



## **Nitrogen Applications**

At the time of establishment, apply no more than 0.9 pounds per 1,000 ft<sup>2</sup> of total nitrogen for cool season grasses or 1.0 pounds per 1,000 ft<sup>2</sup> of total nitrogen for warm season grasses, using a material containing slowly available forms of nitrogen, followed by one or two applications beginning 30 days after planting, not to exceed a total of 1.8 pounds per 1,000 ft<sup>2</sup> total for cool season grasses and 2.0 pounds per 1,000 ft<sup>2</sup> for warm season grasses for the establishment period. Applications of WSN cannot exceed more than 0.7 pounds per 1,000 ft<sup>2</sup> within a 30 day period.

## **Phosphorus and Potassium Recommendations for Establishment**

\* For the lower soil test level within a rating, use the higher side of the range and for higher soil test level within a rating use the lower side of the recommendation range.

## **Nitrogen Management on Athletic Fields - Cool Season Grasses**

- This program is intended for those fields which are under heavy use.
- Nitrogen recommendations are based on the assumption that there is adequate soil moisture to promote good turf growth at the time of application. If no rainfall has occurred since the last application, further applications should be delayed until significant soil moisture is available.

### **Notes:**

- Soluble nitrogen rates of 0.25 pounds per 1,000 ft<sup>2</sup> or less which may be a component of a pesticide or minor element application may be applied any time the turf is actively growing, but must be considered with the total annual nitrogen application rate.

- WSN = water soluble nitrogen; WIN = water insoluble nitrogen

(a) Intensive managed areas must be irrigated.

(b) The beginning and ending dates for application of nitrogen shall be determined using guidance and frost date maps contained in the preceding Season of Application for Nitrogen section, using Figures 6-1 and 6-2.

(c) Rates up to 0.9 pounds per 1,000 ft<sup>2</sup> of total nitrogen can be applied using a material containing slowly available forms of nitrogen, with a minimum of 30 days between applications.

(d) Make this application only if turf use warrants additional nitrogen for sustaining desirable growth and /or color.

## **Nitrogen Management on Athletic Fields - Warm Season Grasses**

The following comments apply to both Naturally Occurring or Modified Sand based Fields and Predominantly Silt/Clay Soil Fields:

- Annual nitrogen rates for warm season grasses shall not exceed **4 pounds** in areas which have the average first killing frost on or before October 20, and shall not exceed **5 pounds** in areas which have the average first killing frost after October 20 as shown in Figure 6-1. Nitrogen rates and timings for overseeding warm season grasses are not included in these rates.
- April 15 - May 15 applications should not be made until after complete green-up of turf.
- Nitrogen applications June through August should be coordinated with anticipated rainfall if irrigation is not available.

Use the lower end of the ranges for non-irrigated fields and the higher end of the ranges should be used on fields with irrigation.

Nitrogen rates towards the higher end of the ranges may be applied on heavily used fields to accelerate recovery, however per application and annual rates cannot be exceeded.

For overseeded warm season grasses, an additional 0.7 pounds per 1,000ft<sup>2</sup> of WSN may be applied in the Fall after the perennial ryegrass overseeding is well established. The WSN must be applied as two applications not to exceed 0.35 pounds per 1,000 ft<sup>2</sup> of nitrogen each, with a minimum of 15 days between applications. Additional WSN application of 0.5 pounds per 1,000 ft<sup>2</sup> may be made in February-March to overseeded perennial ryegrass if growth and color indicate need. Alternatively, split applications of 0.5 pounds of nitrogen per 1,000 ft<sup>2</sup> each with a minimum of 15 days between applications may be applied using a material containing slowly available nitrogen sources.

# Reference Materials and Notes

**Virginia Nutrient Management Standards and Criteria, Revised July 2014, Department of Conservation and Recreation, Division of Soil and Water Conservation**

**ESRI Aerial Photography**



Customer Information					Management Area Information			
Name:	City of Winchester				Management Area ID:	Whittier Field 2		
Address:	900 Whittier Avenue				Management Area Size:	27, 747 sq ft		
	Winchester, VA 22601				Plant Species:	Tall Fescue/Kentucky Bluegrass		
Phone #:	540-667-1815				Notes:			
Date (M/D/Y)	Supervisor/Applicator	Weather Conditions			Fertilizer Analysis	Rate	Amount Fertilizer Used	Application Equipment Used
		Temp	Wind Speed	Precip				
When was the last time your fertilizer equipment was calibrated??? For information on calibration see Chapter 10 of the "Urban Nutrient Management Handbook". Available for download at <a href="http://pubs.ext.vt.edu/430/430-350/430-350.html">http://pubs.ext.vt.edu/430/430-350/430-350.html</a>								

## SOIL ANALYSIS

Client : TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	Grower : City of Winchester NMPs  PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 25 of 30
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Lab Number : 08492

Field Id :

Sample Id : Whittier Park 1

Test	Results	SOIL TEST RATINGS					Calculated Cation Exchange Capacity
		Very Low	Low	Medium	Optimum	Very High	
Soil pH	7.4						11.2 meq/100g
Buffer pH							
Phosphorus (P)	22 ppm						<b>Calculated Cation Saturation</b> %K 3.5 %Ca 72.9 %Mg 23.4 %H 0.0 Hmeq 0.0  <b>K : Mg Ratio</b> 0.15 <b>Ca : Mg Ratio</b> 3.12
Potassium (K)	153 ppm						
Calcium (Ca)	1634 ppm						
Magnesium (Mg)	314 ppm						
Sulfur (S)							
Boron (B)							
Copper (Cu)							
Iron (Fe)							
Manganese (Mn)							
Zinc (Zn)							
Sodium (Na)							
Soluble Salts							
Organic Matter	4.3 % ENR 120						
Nitrate Nitrogen							

## SOIL FERTILITY GUIDELINES

Crop : Lawn

Rec Units: LB/1000 SF

(lbs)	LIME	(tons)	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	Mg	S	B	Cu	Mn	Zn	Fe
0			4.0	1.0	0	0						
Crop :												
Rec Units:												

Comment :

*Pauric McGroary*



**SOIL ANALYSIS**

Client : TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	Grower : City of Winchester NMPs  PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 26 of 30
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Lab Number : 08492

Field Id :

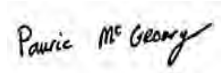
Sample Id : Whittier Park 1

SUGGESTED FERTILIZATION PROGRAM							
First Application		Second Application		Third Application		Fourth Application	
#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer
10	10-20-15	10	10-20-15	8	16-4-8		

Comments:

**Lawn**

- The amount of fertilizer recommended on the first page is the total amount needed for the entire growing season. Split into 3-4 applications to keep the lawn green and prevent fertilizer loss. You should not apply more than 0.7 lbs of soluble nitrogen per 1000 square feet in a 30 day period. Or more than 0.9 lbs of nitrogen per 1000 square feet if you are using a slow or controlled release product in a 30 day period. Custom blend is best to meet exactly the requirement, if this is impossible, the above specific fertilizer application is a general guideline, if the specified grades can not be found, replace with fertilizer having similar N:P:K ratio. The best time to apply fertilizer for cool season grass (bluegrass, fescue, ryegrass) is in the Fall when the grass is growing. For Mid-Atlantic region the time is from late August to November. For Northeast region the time is from mid August to October. Fall application should start as soon as the day time high temperature is below 80-85F, apply with the interval of one month. If you start application late in the Fall and do not finish all three applications, repeat the same applications in the Fall of next year. Spring application is recommended when exceptional fertilizer loss due to heavy spring rain leaching and the grasses look pale green. Spring application can start as soon as the grass starts to grow in April. In the case of exceptional warm spring, the application can be made earlier.
- To reduce soil pH apply 2.5 pounds of elemental sulfur per 1000 square feet for every 0.1 of pH unit above 7.2. For example, a soil pH of 7.4 requires 5 pounds of elemental sulfur (0.2 \* 2.5). Do not apply more than 5 lbs per 1000 square feet per application or more than 10 lbs of elemental sulfur per 1000 square feet per year. Timing between applications should be minimum of 3 months. Warm temperature and moist soil are needed for sulfur to reduce soil pH. If sulfur is applied in winter or under drought conditions, it will take longer for the the soil pH to be lowered.
- Use ammonium sulfate as all or portion of the N requirement to reduce pH.



## SOIL ANALYSIS

Client : TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	Grower : City of Winchester NMPs  PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 27 of 30
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Lab Number : 08493

Field Id :

Sample Id : Whittier Park 2

Test	Results	SOIL TEST RATINGS					Calculated Cation Exchange Capacity
		Very Low	Low	Medium	Optimum	Very High	
Soil pH	7.3						<b>13.4</b> meq/100g
Buffer pH							
Phosphorus (P)	26 ppm						<b>Calculated Cation Saturation</b> %K 2.4 %Ca 83.5 %Mg 13.9 %H 0.0 Hmeq 0.0  <b>K : Mg Ratio</b> 0.16 <b>Ca : Mg Ratio</b> 6.01
Potassium (K)	126 ppm						
Calcium (Ca)	2239 ppm						
Magnesium (Mg)	223 ppm						
Sulfur (S)							
Boron (B)							
Copper (Cu)							
Iron (Fe)							
Manganese (Mn)							
Zinc (Zn)							
Sodium (Na)							
Soluble Salts							
Organic Matter	5.2 % ENR 135						
Nitrate Nitrogen							

## SOIL FERTILITY GUIDELINES

Crop : Lawn

Rec Units: LB/1000 SF

(lbs)	LIME	(tons)	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	Mg	S	B	Cu	Mn	Zn	Fe
0			4.0	1.0	0	0						
Crop :												Rec Units:

Comment :

*Pauric McGroary*

**SOIL ANALYSIS**

Client : TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	Grower : City of Winchester NMPs  PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 28 of 30
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Lab Number : 08493

Field Id :

Sample Id : Whittier Park 2

SUGGESTED FERTILIZATION PROGRAM							
First Application		Second Application		Third Application		Fourth Application	
#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer
12	10-20-15	12	10-0-20	8	16-4-8		

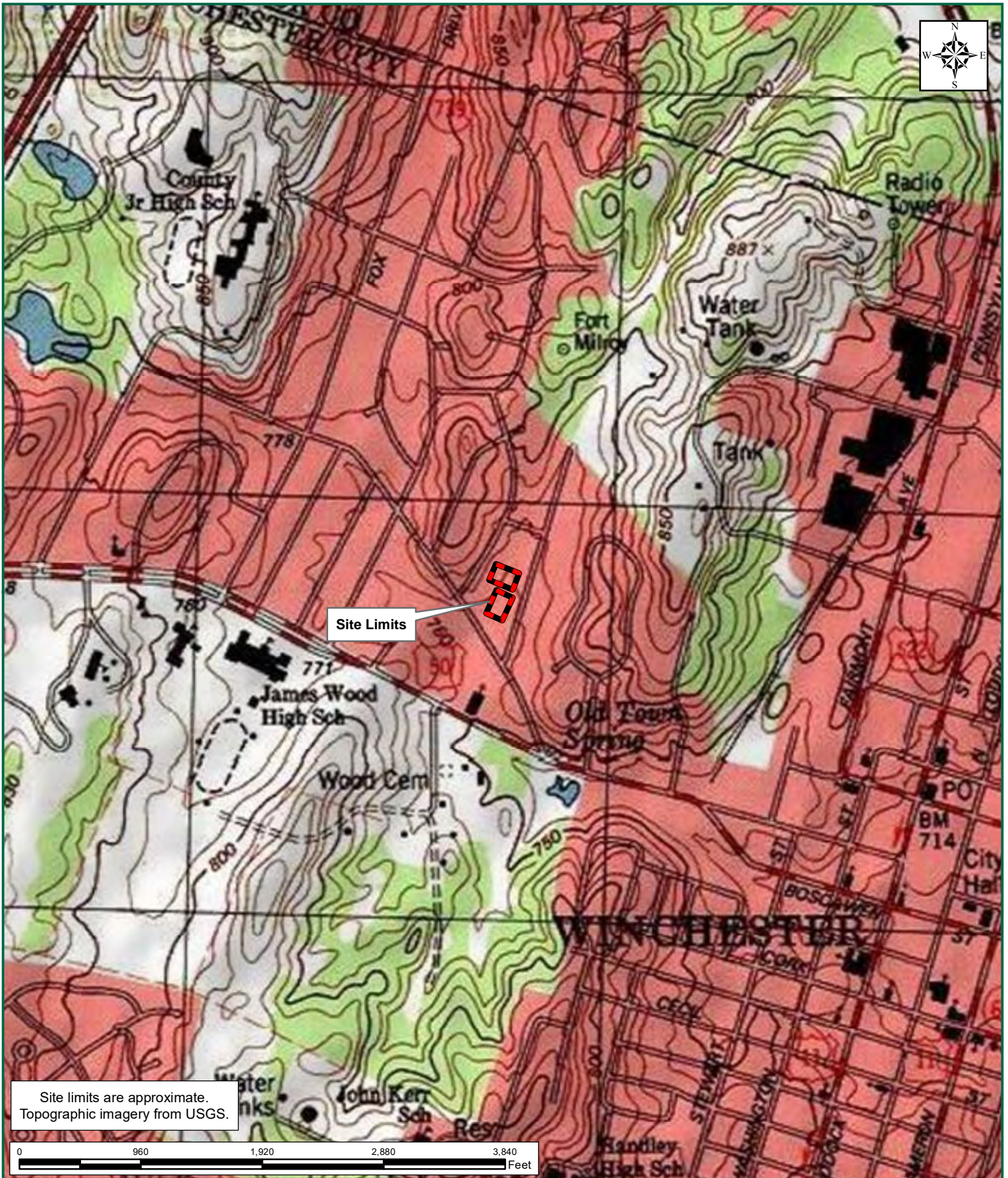
Comments:

**Lawn**

- Cation Exchange Capacity may be over-estimated due to high pH and free lime in the soil.
- The amount of fertilizer recommended on the first page is the total amount needed for the entire growing season. Split into 3-4 applications to keep the lawn green and prevent fertilizer loss. You should not apply more than 0.7 lbs of soluble nitrogen per 1000 square feet in a 30 day period. Or more than 0.9 lbs of nitrogen per 1000 square feet if you are using a slow or controlled release product in a 30 day period. Custom blend is best to meet exactly the requirement, if this is impossible, the above specific fertilizer application is a general guideline, if the specified grades can not be found, replace with fertilizer having similar N:P:K ratio. The best time to apply fertilizer for cool season grass (bluegrass, fescue, ryegrass) is in the Fall when the grass is growing. For Mid-Atlantic region the time is from late August to November. For Northeast region the time is from mid August to October. Fall application should start as soon as the day time high temperature is below 80-85F, apply with the interval of one month. If you start application late in the Fall and do not finish all three applications, repeat the same applications in the Fall of next year. Spring application is recommended when exceptional fertilizer loss due to heavy spring rain leaching and the grasses look pale green. Spring application can start as soon as the grass starts to grow in April. In the case of exceptional warm spring, the application can be made earlier.
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- Use ammonium sulfate as all or portion of the N requirement to reduce pH.

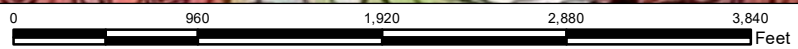
*Pauric McGroary*





Site Limits

Site limits are approximate.  
Topographic imagery from USGS.



**WINCHESTER NUTRIENT MANAGEMENT PLANS - WHITTIER PARK**  
 CITY OF WINCHESTER, VIRGINIA  
**FIGURE 1: VICINITY MAP**

**TIMMONS GROUP**  
 YOUR VISION ACHIEVED THROUGH OURS.




TIMMONS GROUP JOB NUMBER: 36284.007  
 PROJECT STUDY LIMITS: 1.27 ACRES  
 LATITUDE: 39° 11' 30.2" N  
 LONGITUDE: 78° 10' 39.8" W

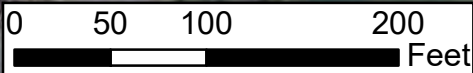
U.S.G.S. QUADRANGLE(S): WINCHESTER  
 DATE(S): 2013  
 WATERSHED(S): CONOCOHEAGUE-OPEQUON  
 HYDROLOGIC UNIT CODE(S): 02070004





**Legend**

-  Project Study Limits - 1.27 Acres
-  NHD Streams
-  National Wetland Inventory



Project Limits are approximate.  
 NWI from US Fish and Wildlife Service.  
 National Hydrography Dataset from USGS.  
 Aerial imagery from ESRI online.



# TIMMONS GROUP

WINCHESTER NUTRIENT MANAGEMENT PLANS - WHITTIER PARK  
 CITY OF WINCHESTER, VIRGINIA

FIGURE 2: ENVIRONMENTAL INVENTORY MAP

THIS DRAWING PREPARED AT THE  
 CORPORATE OFFICE  
 1001 Boulders Parkway, Suite 300 / Richmond, VA 23225  
 TEL 804.202.6500 FAX 804.560.7648 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS	REVISION DESCRIPTION
Site Development   Residential   Infrastructure   Technology   Environmental	
DATE	
DATE	03/10/2016
DRAWN BY	B. NORRIS
DESIGNED BY	B. NORRIS
CHECKED BY	E. VIRTS
SCALE	1" = 100'

JOB NUMBER  
36284.007




SHEET NO.  
1 OF 1

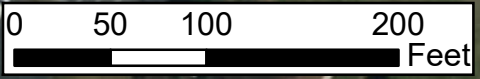
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**Legend**

-  Project Study Limits - 1.27 Acres
- Nutrient Management Areas**
-  Whittier Field 1 - 0.63 Acres
-  Whittier Field 2 - 0.64 Acres



# TIMMONS GROUP

WINCHESTER NUTRIENT MANAGEMENT PLANS - WHITTIER PARK  
CITY OF WINCHESTER, VIRGINIA

FIGURE 3: NUTRIENT MANAGEMENT AREAS MAP

YOUR VISION ACHIEVED THROUGH OURS  
 THIS DRAWING PREPARED AT THE CORPORATE OFFICE  
 1001 Boulders Parkway, Suite 300 / Richmond, VA 23225  
 TEL 804.200.6500 FAX 804.560.7648 www.timmons.com

DATE	REVISION DESCRIPTION
02/20/2019	

DRAWN BY P. OSTERLOH  
 DESIGNED BY P. OSTERLOH  
 CHECKED BY R. HUNTER  
 SCALE 1" = 100'

JOB NUMBER 36284.015  
 SHEET NO. 1 OF 1

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Matthew J. Strickler  
Secretary of Natural Resources

Clyde E. Cristman  
Director



Rochelle Altholz  
Deputy Director of  
Administration and Finance

Russell W. Baxter  
Deputy Director of  
Dam Safety & Floodplain  
Management and Soil & Water  
Conservation

Thomas L. Smith  
Deputy Director of Operations

**COMMONWEALTH of VIRGINIA**  
DEPARTMENT OF CONSERVATION AND RECREATION

Mr. Lambert  
Rouss City Hall, 15 N Cameron St.  
Winchester VA, 22601

4/17/2019

Subject: Whittier Park Nutrient Management Plan Review

The following nutrient management plan has been reviewed by Nick Yakish and confirmed by the Virginia Department of Conservation & Recreation to be developed in accordance with the Code of Virginia 10.1-104.2. Please note that this plan has not been reviewed for compliance with more restrictive requirements from other specific legislative, regulatory or incentive programs.

Plan Name	Planner	Acres	Start Date	Expiration Date
Whittier Park	Parker Osterloh	1.27	3/15/2019	3/15/2022

A copy of this letter should be kept with your nutrient management plan. Initiation of plan revision is recommended by the Department to occur at least six months prior to the expiration date. If you have any questions concerning this letter or reviews, please contact me via phone or email.

Sincerely,

A handwritten signature in black ink, appearing to read "Nick Yakish".

Nick Yakish  
Urban Nutrient Management Coordinator  
Department of Conservation and Recreation  
600 East Main St., 24<sup>th</sup> Floor  
Richmond, Virginia 23219  
(804) 389-5439  
nicholas.yakish@dcr.virginia.gov

**Appendix 9. *Nutrient Credit Purchase Invoice and Annual Water Quality Credit Transfer Form***

Frederick-Winchester Service Authority

Winchester, VA 22604

# Invoice

Date	Invoice #
1/31/2020	2377

<b>Bill To</b>
City of Winchester Department of Public Utilities P.O. Box 75 Winchester, VA 22604

<b>Ship To</b>

P.O. Number	Terms	Rep	Ship	Via	F.O.B.	Project
	NET 30 DAYS					

Quantity	Item Code	Description	Price Each	Amount
50	Nutrient Exchange-...	NITROGEN CREDITS PURCHASED	3.82	191.00

<b>Total</b>			\$191.00
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Rouss City Hall  
15 North Cameron Street  
Winchester, VA 22601

Telephone: (540) 667-1815  
FAX: (540) 662-3351  
TDD: (540) 722-0782  
Website: [www.winchesterva.gov](http://www.winchesterva.gov)

MEMO

TO: Richard Helm, Director FWSA  
FROM: Kelly Henshaw, City Engineer  
DATE: January 27, 2020

COPY

SUBJECT: Nutrient Credit Agreement – Nitrogen Purchase for Year 2019

The City will be purchasing the below noted nitrogen credits for the year 2019

MS4	Nutrient Type	Number of Pounds	Rate 2019	Total
City of Winchester	Nitrogen	50	\$3.82	\$191.00

Please sign and return the attached Annual Water Quality Credit Transfer Form as a part of the Nutrient Credit Agreement established December 4<sup>th</sup>, 2018.

Should you have questions or concerns, please contact me.

Sincerely,

Handwritten signature of Kelly Henshaw in black ink.

Kelly Henshaw  
City Engineering  
City of Winchester  
[Kelly.Henshaw@winchesterva.gov](mailto:Kelly.Henshaw@winchesterva.gov)

Cc: file

ATTACHMENT A

Annual Water Quality Credit Transfer Form

*Instructions: To be completed and executed by FWSA and delivered to the City of this Agreement on or before each April 1 immediately following the calendar year of credit generation by FWSA*

**By execution and delivery of this Annual Credit Transfer Form, FWSA transfers the following water quality credits in the amounts specified to the City in accordance with, and for the specific and limited purposes of, the Frederick-Winchester Service Authority Water Quality Credit Exchange Agreement.**

Transferor: Frederick-Winchester Service Authority

Transferee (MS4): City of Winchester

Calendar Year Credits Generated: 2019

Date Credits Transfer:  1/28/2020

MS4	TN (lbs/yr)	TP (lbs/yr)	TSS (lbs/yr)
City of Winchester	50		

Signed (for Transferor): [Signature]

Name (Print): Richard S. Helm

Title: Ex Dir FWSA