



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

Darryl Glover  
Deputy Director for  
Dam Safety,  
Floodplain Management and  
Soil and Water Conservation

Laura Ellis  
Interim Deputy Director for  
Administration and Finance

July 25, 2022

John Rocha  
Community College-Central Virginia  
3506 Wards Road  
Lynchburg VA 24502

Your nutrient management plan (NMP) dated 8/1/2022 located in City of Lynchburg has been approved by the Virginia Department of Conservation and Recreation (DCR). The approved plan is for 20.74 acres. Only nutrient recommendations for applications to be made after the date of this letter are approved by this letter. Your NMP was written by Sara Rilverio, a nutrient management planner certified by DCR.

This site has not been inspected by DCR and this approval is contingent upon site conditions being as stated in the NMP. Any revisions to this plan must be approved by DCR. Any change in personnel resulting in a change to the plan manager should be reported to the Certified Nutrient Management Planner who will then make DCR aware. Please note that this letter should be kept with the NMP and supporting documentation including nutrient application records. This plan expires on 8/1/2025. Please feel free to contact me with any questions or concerns regarding this approval.

Best regards,

A handwritten signature in cursive script that reads "Anita Tuttle".

Anita Tuttle  
Urban Nutrient Management Coordinator  
Division of Soil and Water Conservation  
600 East Main Street, 24<sup>th</sup> Floor  
Richmond VA 23219  
(804) 513-5958

# **Nutrient Management Plan**

## **Central Virginia Community College Lynchburg, Virginia**

**Prepared for  
Central Virginia Community College  
c/o: John Rocha  
Facilities Manager  
3506 Wards Road  
Lynchburg, Virginia 24502  
434.832.7725**

**Prepared by  
Sara Rilveria, CLA, CNMP  
Wetland Studies and Solutions, Inc.  
1620 Brook Road  
Richmond, Virginia 23220**

**August 2022**



# Nutrient Management Plan for the Central Virginia Community College

Prepared for:

Central Virginia Community College  
C/O: John Rocha  
3506 Wards Road  
Lynchburg, Virginia, 24502

Prepared By:

Sara Rilveria/Certified Nutrient Management Planner  
Certification No. 943  
Wetland Studies and Solutions, Inc.  
1620 Brook Road  
Richmond, VA 23220

Location Information	
Physical Address	3506 Wards Road
City State Zip	3506 Wards Rd, Lynchburg, VA 24502
<a href="#">Coordinates</a>	37° N 21' 31.61"
NAD 83 Deg Min Sec	79° W 11' 05.21"
<a href="#">VAHU6 Watershed Code</a>	JM10 – Blackwater Creek
County	Lynchburg

Square Footage of Management Areas	
Total	20.74 acres (903,564.56 ft <sup>2</sup> )
Area 1	5.90 acres (256,986.41 ft <sup>2</sup> )
Area 2	3.54 acres (153,966.13 ft <sup>2</sup> )
Area 3	11.31 acres (492,612.03 ft <sup>2</sup> )

Plan Start Date	August 1, 2022
Plan End Date	August 1, 2025

Planner Signature	Sara Rilveria
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## **1.0 INTRODUCTION AND SITE DESCRIPTION**

### **1.1. Introduction**

This Nutrient Management Plan (NMP) is for Central Virginia Community College (CVCC) located in Lynchburg, Virginia at 3506 Wards Road (Figure 1).

The purpose of this NMP is to maintain and improve turf conditions and facilitate effective turf management while protecting water quality. This NMP addresses only the managed turfgrass areas at the campus. Management of other vegetated areas containing trees, flowering ornamentals, small shrubs and groundcovers is performed by the campus based on site-specific conditions including, but not limited to the type and status of vegetated areas, annual soil testing, and the occurrence of pests and weeds. This NMP is effective for three years (until August 1, 2025) or until major renovation or other changes to maintenance practices occur. This NMP should be used as a resource for planning the quantity and timing of turfgrass nutrient application based on sound agronomic practices.

### **1.2. Site Description**

The 107-acre campus contains turfgrass in many areas within the campus grounds including around campus buildings, along roadways, and around and within parking lots. All turf areas have been seeded with a tall fescue blend (mix of fine leaved tall fescue and Kentucky bluegrass); and therefore, are categorized as cool season turf.

During the site visit in April 2022, most turf areas around campus generally appeared in good condition with exception to some areas of high traffic. The CVCC campus contains a large athletic field situated in the northwest corner of the campus. Campus staff indicated this field had low-use; thus, the field does not require more intensive management than other turf on the campus. None of the turf at the campus is irrigated.

Environmentally sensitive areas are also found at the CVCC campus. Two mapped streams, an unnamed tributary to Burton Creek and Rock Castle Creek, are located in wooded areas on the campus property. A dry detention pond and a bioretention facility are respectively located on the western and northern portions of campus. Section 4 addresses environmentally sensitive areas.

### **1.3. Current and Future Turf Maintenance**

Campus staff are responsible for maintenance of turf including any mowing; herbicide, fertilizer, and lime application; as well as aeration and overseeding. It is the responsibility of the Plan Administrator to ensure this NMP is followed.

## 2.0 SOIL SAMPLING AND ANALYSIS

Using the NRCS Web Soil Survey application, Wetland Studies and Solutions, Inc. (WSSI) personnel reviewed mapped soil data for the campus. Most of the soils at the campus are mapped as Cecil series, the remaining portions are mapped as Wilkes and Tallapoosa series. Although the natural soils have been modified by cut and fill activities, they still retain much of the mapped soil series characteristics and are classified as clay loams. Soils in problem areas were compacted with thin to no amounts of topsoil.

Areas of managed turfgrass were divided into eight (8) sampling areas based on topography, soil properties, and management intentions. Soil samples were collected from the turfgrass areas across the campus and submitted for laboratory analysis including pH, buffer pH, phosphorus, potassium, and other soil properties. Figure 2 shows the locations of the soil sampling areas as well as environmental sensitive areas, and Table 1 summarizes the laboratory results. Appendix A presents the soil laboratory data. No sampling was performed within wooded areas or landscaped areas.

Soil laboratory results were converted into nutrient management ratings based on the Virginia Nutrient Management Standards and Criteria (VNMS&C). Soil phosphorous concentrations ranged from Low- to Medium- and potassium concentrations rated Low and Medium+. Soil samples exhibited pH values ranging from 5.9 to 7.5. The pH target level for turfgrass is 6.2.

## 3.0 NUTRIENT MANAGEMENT AREAS

Based on the soil test results, current turf conditions, the intensity of use, overall visibility and aesthetic considerations, three (3) Nutrient Management Areas (NMA) at the campus have been established for this NMP. The NMA will maintain and improve turf conditions, facilitate effective management and protect water quality. Figure 3 shows the nutrient management areas. Table 2 presents a suggested application schedule for the nutrient management area discussed in greater detail in Section 3.1 below.

### 3.1 Nutrient and Liming Applications

#### *3.1.1. Nitrogen, Phosphorous and Potassium*

Nitrogen, phosphorous ( $P_2O_5$ ) and potassium ( $K_2O$ ) are the three macronutrients essential for healthy turf; and therefore, are the central focus of the NMP along with lime applications. Phosphorous and potassium recommendations found on Table 2 are based on the soil laboratory results, the VNMS&C, and the overall turf conditions as observed

during the soil sampling site visit. Nitrogen recommendations are based on turfgrass needs defined by VNMS&C, not soil test results which vary based on the type of turfgrass (cool vs. warm season) and level of management (standard vs. intensive).

The acceptable window for nitrogen application for cool season fescue turf at the campus is six weeks prior to the last spring average frost and six weeks after the first fall average frost from March 1 until December 1. Although aggressive spring and summer nitrogen fertilization can result in lush, dark green foliage, this occurs at the expense of the turf root system. Turf with an inadequate root system will then struggle in the summer heat and moisture conditions. Additionally, too much nitrogen in spring and summer for cool season turf can result in leaching or runoff to nearby waterbodies. The bulk of nitrogen should be applied in monthly increments from September through November.

As phosphorous and potassium are not as mobile as nitrogen and generally reside in soil for longer periods of time, the application timing of these two macronutrients is not as critical as nitrogen. Incremental applications of these nutrients from September to November are recommended.

### *3.1.2. Lime and pH*

Soil acidity is critical to plants as it affects the availability of nutrients in the soil and potential leaching of nutrients from the soil. Cool season fescue prefers a slightly acidic soil pH of approximately 6.2 Standard Units (SU). Periodic lime applications are necessary for many Virginia soils to correct low pH, add buffering capacity, and provide secondary nutrients calcium and magnesium as well as some micronutrients. Liming rates provided by the laboratory are based on the soil pH and the pH buffer indices.

According to the laboratory results, one (1) liming application of 46 lbs. per 1,000 square feet is needed for the first year of this NMP for Soil Sampling Area 1. See Table 2 for recommended amounts and timing of applications. No liming is recommended for the remainder of the soil sampling areas.

Liming recommendations are only for the first year following sampling. The soil should be tested for soil pH and Buffer pH in the late fall to winter each following year to determine if liming is necessary following the initial recommended liming.

### 3.2 Problem Turfgrass Areas and Temporarily Inactive Nutrient Management Areas

Some turf areas have ineffective groundcover including turfgrass in poor condition. The poor turfgrass conditions are the result of poor soil quality, over-compaction, active erosion, steep slopes, shading, or poor soil moisture conditions. Areas where there is ineffective groundcover and all active construction sites should be temporarily removed from active nutrient management until corrective measures can be applied to improve the turfgrass or groundcover conditions or the construction site is returned to active management. At the time of the development of this NMP, there were no active construction sites or turf areas that were designated as ineffective and removed from active management.

Corrective action options will vary by area but may include additional soil amendments (compost/topsoil) and lime, aeration or shallow tilling, and the use of mulch, turf mats and blankets. Alternative landscaping such as non-turf groundcovers, pavers, and other hardscape treatments may be the best alternative for some areas. If turfgrass is the desired groundcover, the soil should be retested for soil and buffer pH and adjusted accordingly with limestone as part of corrective action.

### 3.3 Selection of Fertilizers

Specific fertilizers and herbicides have not been selected as a part of this NMP to provide greater flexibility and cost savings. The nutrient applicator has the option to select either commonly used fertilizer blends already in stock or readily available, or they can use custom blends, a common practice in the commercial landscaping industry. Slow-release nitrogen containing fertilizers are recommended. This NMP will require revision should the Facility Manager decide to use animal manures or Class B biosolids (not of exceptional quality).

Provided the maximum rate of nitrogen per application and the total annual rates of all three nutrients are not exceeded as detailed in Table 2, the Facility staff and/or a landscape contractor may use their discretion with the exact ratio of nutrients applied per application.

### 3.4 Pre and Post Emergent Herbicides

Weed control is a necessary requirement for healthy turf and has been implemented in the past at the Campus. Herbicides with nitrogen included may be used in the spring provided the application of nitrogen follows the amount allowed by this NMP and the VNMS&C. Additional straight application of herbicides without nitrogen additives may be required.

### 3.5 Precautions for Fertilizer Applications

General precautions for fertilizer application include:

- Avoid applying fertilizers on steep slopes 48-hours prior to a rain event.
- Do not apply fertilizers to frozen or snow-covered ground, nor should they ever be used as ice melt.
- Avoid/minimize application of fertilizers to impervious areas such as parking lots, roads, and sidewalks, and within 25 feet of environmentally sensitive areas and stormwater collection/management facilities.
- Remove any granular materials that land on impervious surfaces by sweeping and collecting, and either put the collected material back in the bag or spread it onto the turf.

### **4.0 ENVIRONMENTALLY SENSITIVE AREAS, STORMWATER MANAGEMENT FACILITIES, AND RECOMMENDED BUFFERS**

Environmentally sensitive areas were identified on campus as shown on Figures 2 and 3:

- A dry detention basin located on the west side of the campus, south of Merritt Hall;
- A bioretention facility is located in the northeast portion of the campus;
- A stream located in the wooded central part of the CVCC campus flows north-northwest crossing US 501 toward Burton Creek;
- A stream located east of the main CVCC campus crosses small sections of the campus in a wooded area and then flows north crossing Old Wards Road toward Burton Creek;
- Steep areas around the eastern parking lot are considered environmentally sensitive areas. These areas should not be fertilized due to the slopes being greater than 15% as defined in the VNMS&C.

A no-fertilizer/pesticide application buffer area of at least 25 feet and preferably 50 feet should be established around these sensitive areas. Where practicable, native vegetation may be an alternative to turf in the buffer areas. Turf in and around the detention basin and the bioretention facility should be mowed at a greater height.

The identification of sensitive natural resource areas such as wetlands and streams is based on the publicly available National Hydrologic Dataset and the U.S. Fish & Wildlife Service (USFWS) National Wetland Inventory Maps. Field mapping of other wetlands and streams that may exist on the campus was outside the scope of this NMP.

## 5.0 OTHER TURF MANAGEMENT CONSIDERATIONS

**Aeration** - Extensive core cultivation/aeration in the late summer to early fall is recommended for the campus. Core aeration is very disruptive to surface smoothness, but it is the best way to relieve the physical effects of soil compaction and increase soil oxygen levels.

**Grass Seed Type** - Reference the most recent Virginia Cooperative Extension's *Virginia Turfgrass Variety Recommendations* found online at <https://www.sites.ext.vt.edu/newsletter-archive/turfgrass/index.html> when selecting seed mix for over-seeding. The seed type should be suitable to regional environmental conditions.

**Iron** - Iron applications (particularly foliar applications) may periodically be used for enhanced greening as an alternative to nitrogen. These applications are most beneficial if applied in late spring through summer for cool season grasses and in late summer/fall applications for warm-season grasses. Since iron is a micronutrient, its application levels are very low. The color response is short-lived (typically two to three weeks) because the iron-induced color response in the leaves is removed by mowing.

**Returning and Management of Grass Clippings** - The recycling of grass clippings on turf should be encouraged as an effective means of recycling nitrogen, phosphorus, and potassium. Where aesthetics allows, all clippings from mowing events should be returned to the turf rather than discharging them onto sidewalks or streets. Clippings should not be blown onto impervious surfaces or surface waters, dumped down stormwater drains, or piled outside where rainwater will leach out the nutrients creating the potential for nutrient loss to the environment.

**Spreader Equipment Calibration** - Spreader equipment calibration is critical to NMP implementation. The fertilizer applicator should supply equipment calibration records to the Facility Manager on a routine basis.

## 6.0 RECORDKEEPING

Proper NMP implementation requires diligent record keeping of fertilizer, lime and herbicide applications, and turfgrass conditions. Important information to retain with this NMP includes soil tests reports; spreader settings; calibration results, dates of fertilizer application and rates applied; seeding or renovation; and unusual stresses caused by disease, drought, and pests. This information will also provide the background needed for future revisions of the NMP. NMP Application record keeping forms are included in Appendix B for use for tracking fertilizer, lime, pesticide and herbicides.

## 7.0 REFERENCES

Nutrient Management Training and Certification Regulations 4VAC50-85 (effective date November 23, 2014)

Virginia Nutrient Management Standards and Criteria (Revised July 2014):

<https://www.dcr.virginia.gov/document/standardsandcriteria.pdf>

Urban Nutrient Management Handbook (August 16, 2019); 430-350:

<https://resources.ext.vt.edu/>

A Spreadsheet-Based Soil Test Converter for Turfgrass Professionals and Nutrient Management Planning in Virginia (November 1, 2018); SPES-60P:

<https://resources.ext.vt.edu/>

Soil Test Note #1 – Explanation of Soil Tests (December 1, 2018):

<https://resources.ext.vt.edu/>

## TABLES



**Table 1 - Soil Test Summaries**

Site: Central Virginia Community College									
Lab: Waypoint Laboratories									
Sample Date: 04/25/2022									
Soil Sampling Area ID	Square Feet	Soil pH (SU)	Buffer pH (S.U.)	P (Mehlich I) (ppm)	P (H/M/L)	K (Mehlich I) (ppm)	K (H/M/L)	Soil description	Turf Species
CV-1	81,252.17	5.9	6.78	0.86	L-	87	M+	Reddish Brown, Clay Loam	Cool season, Fescue Blend
CV-2	175,734.23	6.3		-0.05	L-	64	M	Reddish Brown, Clay Loam	Cool season, Fescue Blend
CV-3	130,475.35	7.5		-1.89	L-	50	L	Reddish Brown, Clay Loam	Cool season, Fescue Blend
CV-4	111,383.57	6.4		9.56	M-	77	M-	Reddish Brown, Clay Loam	Cool season, Fescue Blend
CV-5	41,263.69	7.1		-0.51	L-	56	L+	Reddish Brown, Clay Loam	Cool season, Fescue Blend
CV-6	68,235.54	7.3		0.86	L-	48	L	Reddish Brown, Clay Loam	Cool season, Fescue Blend
CV-7	42,582.56	7.5		3.15	L	55	L	Reddish Brown, Clay Loam	Cool season, Fescue Blend
CV-8	252,637.45	6.2		-1.43	L-	48	L	Reddish Brown, Clay Loam	Cool season, Fescue Blend

Notes: SU = Standard Units; ppm = parts per million; P and K ratings are from Virginia Nutrient Management Standards & Criteria.

**Table 2 – Nutrient Application Worksheet**

**Site:** CVCC

**Operator:** VCCS

**Begins:** 8/1/2022

**Expires:** 8/1/2025

**Nutrient Management Area:** 1

**Square Feet:** 256,986.41

**Landscape Plants:** Cool Season Turf (Fescue Mix)

Annual Nutrient Needs (lbs/1000 ft <sup>2</sup> ) <sup>1</sup>	Application Month/Day <sup>1,2</sup>	Amendment Material Notes	% Slow Release N	Total N	Total P <sub>2</sub> O <sub>5</sub> (lbs/1000 ft <sup>2</sup> )	Total K <sub>2</sub> O (lbs/1000 ft <sup>2</sup> )	Lime Recommendation (lbs/1000 ft <sup>2</sup> ) <sup>3</sup>
<b>2.8*-3.0*-1.0*</b>	April 15 - May 15	N – Fertilize & Lime	50% or greater	0.5	0	0	46
	Sept 1	Aerate, Overseed & Fertilize	50% or greater	0.9	1.5	0.50	
	Oct 1	Fertilize	50% or greater	0.9	1.5	0.50	
	Nov 1	Fertilize	50% or greater	0.5	0	0	
	<b>Totals:</b>			<b>2.8</b>	<b>3.0</b>	<b>1.0</b>	

**Notes:**

\* Up to 3.5 lbs. of nitrogen per 1000 ft<sup>2</sup> is allowed per the VNMS&C, but only 2.8 lbs. per 1000 ft<sup>2</sup> is recommended in this plan for consistency. Up to 3 lbs. of P<sub>2</sub>O<sub>5</sub> per 1000 ft<sup>2</sup> is allowed per soil test results. 3.0 lb. of P<sub>2</sub>O<sub>5</sub> per 1000 ft<sup>2</sup> is recommended in this plan. Up to 1.5 lbs. of K<sub>2</sub>O per 1000 ft<sup>2</sup> is allowed per soil test results but only 1.0 lbs. of K<sub>2</sub>O per 1000 ft<sup>2</sup> is recommended in this plan.

1. Fertilizer recommendations are flexible as long as the following conditions are met: a) no more than 0.7 pounds of Water Soluble N per 1000 ft<sup>2</sup> is applied within a 30-day period; b) no more than 0.9 pounds of Total N (per 1000 ft<sup>2</sup>) may be applied within a 30-day period; and c) total annual fertilizer amounts for each nutrient should not exceed the Annual Nutrient Needs listed in column 1.

2. The month and day designations are a general guideline. Apply as close to the month as possible, using the day designation to determine the interval between applications.

3. According to the soil sample results, one lime application of 46 lbs. per 1000 ft<sup>2</sup> is needed for Soil Sampling Area 1 only for the first year of this NMP. Liming for years 2 and 3 should be based on additional soil pH and Buffer pH testing.

4. Do not apply inorganic fertilizers on frozen or snow-covered ground, or on denuded areas. 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.

5. Use a drop spreader for application of inorganic fertilizers on turf areas less than 10 feet wide or on slopes greater than 2%.

6. Apply pre and or post emergent herbicides as needed, but do not use herbicide containing fertilizer prior to April 15, and conditions must be met in Note 1.

**Table 3 – Nutrient Application Worksheet**

**Site:** CVCC

**Operator:** VCCS

**Begins:** 8/1/2022

**Expires:** 8/1/2025

**Nutrient Management Area:** 2

**Square Feet:** 153,966.13

**Landscape Plants:** Cool Season Turf (Fescue Mix)

Annual Nutrient Needs (lbs/1000 ft <sup>2</sup> ) <sup>1</sup>	Application Month/Day <sup>1,2</sup>	Amendment Material Notes	% Slow Release N	Total N	Total P <sub>2</sub> O <sub>5</sub> (lbs/1000 ft <sup>2</sup> )	Total K <sub>2</sub> O (lbs/1000 ft <sup>2</sup> )	Lime Recommendation (lbs/1000 ft <sup>2</sup> ) <sup>3</sup>
<b>2.8*-2.0*-2.0*</b>	April 15 - May 15	N – Fertilize & Lime	50% or greater	0.5	0	0	
	Sept 1	Aerate, Overseed & Fertilize	50% or greater	0.9	1.0	1.0	
	Oct 1	Fertilize	50% or greater	0.9	1.0	1.0	
	Nov 1	Fertilize	50% or greater	0.5	0	0	
	<b>Totals:</b>			<b>2.8</b>	<b>2.0</b>	<b>2.0</b>	

**Notes:**

\* Up to 3.5 lbs. of nitrogen per 1000 ft<sup>2</sup> is allowed per the VNMS&C, but only 2.8 lbs. per 1000 ft<sup>2</sup> is recommended in this plan for consistency. Up to 2.5 lbs. of P<sub>2</sub>O<sub>5</sub> per 1000 ft<sup>2</sup> is allowed per soil test results but only 2.0 lb. of P<sub>2</sub>O<sub>5</sub> per 1000 ft<sup>2</sup> is recommended in this plan. Up to 2.0 lbs. of K<sub>2</sub>O per 1000 ft<sup>2</sup> is allowed per soil test results. 2.0 lbs. of K<sub>2</sub>O per 1000 ft<sup>2</sup> is recommended in this plan.

1. Fertilizer recommendations are flexible as long as the following conditions are met: a) no more than 0.7 pounds of Water Soluble N per 1000 ft<sup>2</sup> is applied within a 30-day period; b) no more than 0.9 pounds of Total N (per 1000 ft<sup>2</sup>) may be applied within a 30-day period; and c) total annual fertilizer amounts for each nutrient should not exceed the Annual Nutrient Needs listed in column 1.

2. The month and day designations are a general guideline. Apply as close to the month as possible, using the day designation to determine the interval between applications.

3. According to the soil sample results, no lime applications are needed for this Nutrient Management Area. Liming for years 2 and 3 should be based on additional soil pH and Buffer pH testing.

4. Do not apply inorganic fertilizers on frozen or snow-covered ground, or on denuded areas. 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.

5. Use a drop spreader for application of inorganic fertilizers on turf areas less than 10 feet wide or on slopes greater than 2%.

6. Apply pre and or post emergent herbicides as needed, but do not use herbicide containing fertilizer prior to April 15, and conditions must be met in Note 1.

**Table 3 – Nutrient Application Worksheet**

**Site:** CVCC

**Operator:** VCCS

**Begins:** 8/1/2022

**Expires:** 8/1/2025

**Nutrient Management Area:** 3

**Square Feet:** 492,612.03

**Landscape Plants:** Cool Season Turf (Fescue Mix)

Annual Nutrient Needs (lbs/1000 ft <sup>2</sup> ) <sup>1</sup>	Application Month/Day <sup>1,2</sup>	Amendment Material Notes	% Slow Release N	Total N	Total P <sub>2</sub> O <sub>5</sub> (lbs/1000 ft <sup>2</sup> )	Total K <sub>2</sub> O (lbs/1000 ft <sup>2</sup> )	Lime Recommendation (lbs/1000 ft <sup>2</sup> ) <sup>3</sup>
<b>2.8*-3.0*-2.0*</b>	April 15 - May 15	N – Fertilize & Lime	50% or greater	0.5	0	0	
	Sept 1	Aerate, Overseed & Fertilize	50% or greater	0.9	1.5	1.0	
	Oct 1	Fertilize	50% or greater	0.9	1.5	1.0	
	Nov 1	Fertilize	50% or greater	0.5	0	0	
	<b>Totals:</b>			<b>2.8</b>	<b>3.0</b>	<b>2.0</b>	

**Notes:**

\* Up to 3.5 lbs. of nitrogen per 1000 ft<sup>2</sup> is allowed per the VNMS&C, but only 2.8 lbs. per 1000 ft<sup>2</sup> is recommended in this plan for consistency. Up to 3 lbs. of P<sub>2</sub>O<sub>5</sub> per 1000 ft<sup>2</sup> is allowed per soil test results and 3.0 lb. of P<sub>2</sub>O<sub>5</sub> per 1000 ft<sup>2</sup> is recommended in this plan. Up to 2.5 lbs. of K<sub>2</sub>O per 1000 ft<sup>2</sup> is allowed per soil test results but only 2.0 lbs. of K<sub>2</sub>O per 1000 ft<sup>2</sup> is recommended in this plan.

1. Fertilizer recommendations are flexible as long as the following conditions are met: a) no more than 0.7 pounds of Water Soluble N per 1000 ft<sup>2</sup> is applied within a 30-day period; b) no more than 0.9 pounds of Total N (per 1000 ft<sup>2</sup>) may be applied within a 30-day period; and c) total annual fertilizer amounts for each nutrient should not exceed the Annual Nutrient Needs listed in column 1.

2. The month and day designations are a general guideline. Apply as close to the month as possible, using the day designation to determine the interval between applications.

3. According to the soil sample results, no lime applications are needed for this Nutrient Management Area. Liming for years 2 and 3 should be based on additional soil pH and Buffer pH testing.

4. Do not apply inorganic fertilizers on frozen or snow-covered ground, or on denuded areas. 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.

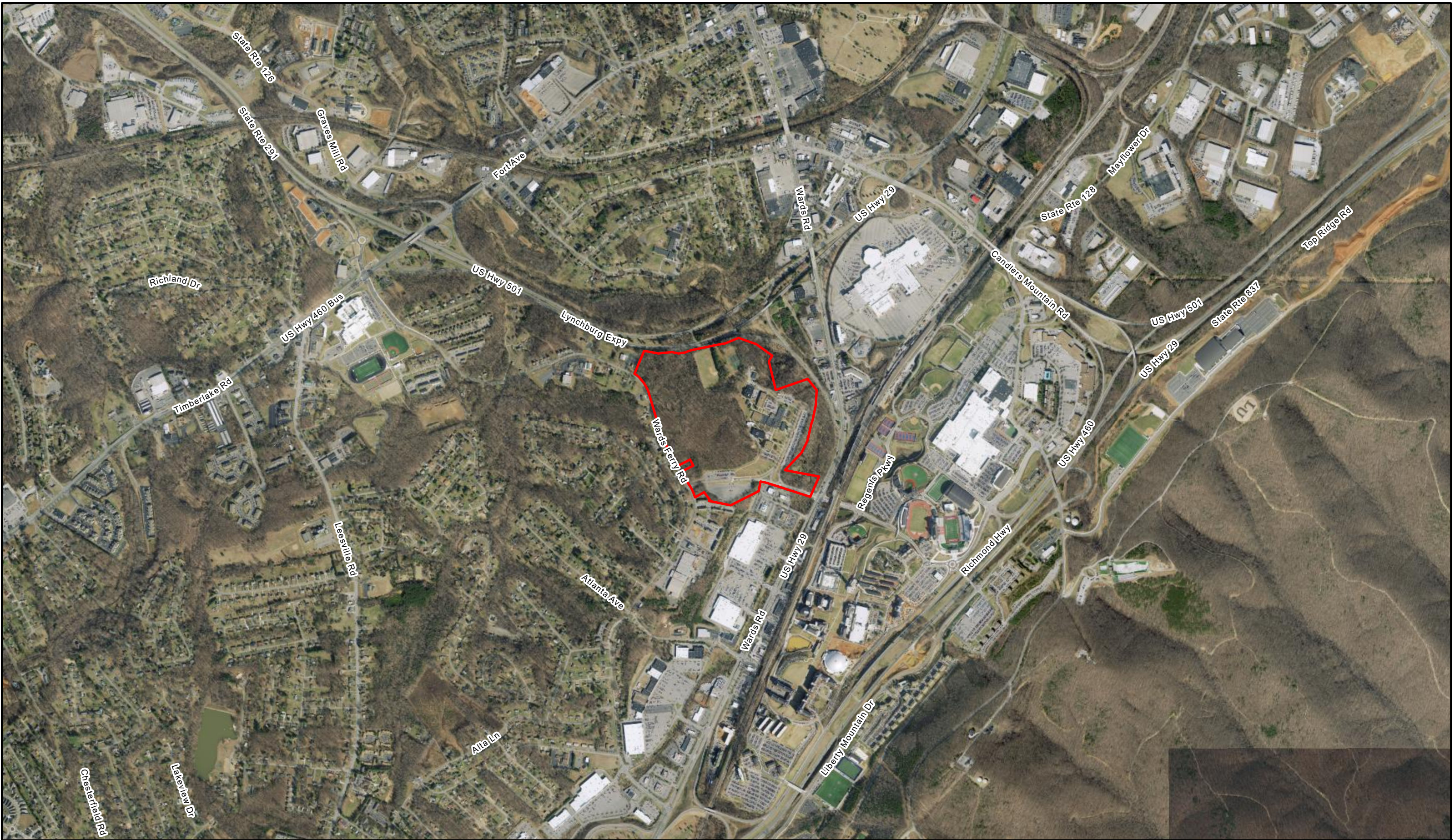
5. Use a drop spreader for application of inorganic fertilizers on turf areas less than 10 feet wide or on slopes greater than 2%.

6. Apply pre and or post emergent herbicides as needed, but do not use herbicide containing fertilizer prior to April 15, and conditions must be met in Note 1.

## FIGURES

**Figure 1: Project Location**








**Figure 2: Soil Sampling Areas**







Prepared by JDB, 6/30/2022 10:22 AM  
Sources: ESRI, OpenStreetMap  
Projection: NAD 1983 StatePlane Virginia South FIPS 4502 Feet

\* NHD data was revised by WSSI personnel using aerial imagery in order to compensate for variations in scale.

CV-1	CV-5	CVCC Boundary
CV-2	CV-6	Environmentally Sensitive Area
CV-3	CV-7	National Hydrography Dataset (NHD)
CV-4	CV-8	

**FIGURE 2**  
**CVCC SOIL SAMPLING AREAS**  
CVCC NMP

0 250 500 Feet


Lynchburg, Virginia



**Figure 3: Nutrient Management Areas**













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a DAVEY company

N

\* NHD data was revised by WSSI personnel using aerial imagery in order to compensate for variations in scale.

Prepared by JDB, 6/30/2022 10:35 AM  
Sources: ESRI, OpenStreetMap  
Projection: NAD 1983 StatePlane Virginia South FIPS 4502 Feet

	NMA 1		CVCC Boundary
	NMA 2		Environmentally Sensitive Area
	NMA 3		National Hydrography Dataset (NHD)

**FIGURE 3**  
**CVCC NUTRIENT MANAGEMENT AREAS**  
CVCC NMP

0 250 500 Feet

Lynchburg, Virginia



**Figure 4: Liming Areas**





\* NHD data was revised by WSSI personnel using aerial imagery in order to compensate for variations in scale.

Prepared by JDB, 6/30/2022 11:31 AM  
Sources: ESRI, OpenStreetMap  
Projection: NAD 1983 StatePlane Virginia South FIPS 4502 Feet

**Liming Area:**

45 lbs/1000 ft²

CVCC Boundary

Environmentally Sensitive Area

National Hydrography Dataset (NHD)

**FIGURE 4**  
**CVCC LIMING AREA**  
CVCC NMP

0 250 500 Feet

Lynchburg, Virginia



## **APPENDICES**

## **Appendix A: Laboratory Soil Test Results**

Report Number: 22-112-0503

Account Number: 78934

*"Every acre...Every year."™*

7621 Whitepine Road, Richmond, VA 23237

Main 804-743-9401 ° Fax 804-271-6446

www.waypointanalytical.com

**Send To:** Wetlands Studies Solutions  
201 Church Street  
Suite C  
Blacksburg VA 24060

**Grower:** Central Virginia Community Colleg CVCC  
3506 Wards Road  
Lynchburg, VA 24502

**SOIL ANALYSIS REPORT**

Analytical Method(s): SMP Buffer pH Mehlich 3 Loss On Ignition Water pH

Date Received: 04/22/2022

Date Of Analysis: 04/25/2022

Date Of Report: 04/25/2022

Sample ID Field ID	Lab Number	OM	W/V	ENR	Phosphorus			Potassium	Magnesium	Calcium	Sodium	pH		Acidity	C.E.C
		% Rate	Soil Class	lbs/A	M3 ppm Rate	ppm Rate	ppm Rate	K ppm Rate	Mg ppm Rate	Ca ppm Rate	Na ppm Rate	Soil pH	Buffer Index	H meq/100g	meq/100g
CV-1	10323	5.7 H		150	9 VL			122 M	165 H	1068 M		5.9	6.78	1.5	8.5
CV-2	10324	3.3 M		105	7 VL			90 M	86 L	1234 H		6.3		0.8	7.9
CV-3	10325	3.1 M		99	3 VL			70 L	90 L	1670 VH		7.5		0.0	9.3
CV-4	10326	4.7 M		131	28 L			109 M	155 M	1296 H		6.4		0.8	8.9
CV-5	10327	2.1 L		75	6 VL			79 L	98 L	2214 VH		7.1		0.0	12.1

Sample ID Field ID	Percent Base Saturation					Nitrate	Sulfur	Zinc	Manganese	Iron	Copper	Boron	Soluble Salts		
	K %	Mg %	Ca %	Na %	H %	NO <sub>3</sub> N ppm Rate	S ppm Rate	Zn ppm Rate	Mn ppm Rate	Fe ppm Rate	Cu ppm Rate	B ppm Rate	SS ms/cm Rate		
CV-1	3.7	16.2	62.8		17.6										
CV-2	2.9	9.1	78.1		10.1										
CV-3	1.9	8.1	89.8		0.0										
CV-4	3.1	14.5	72.8		9.0										
CV-5	1.7	6.7	91.5		0.0										

Values on this report represent the plant available nutrients in the soil. Rating after each value: VL (Very Low), L (Low), M (Medium), H (High), VH (Very High). ENR - Estimated Nitrogen Release. C.E.C. - Cation Exchange Capacity.

Explanation of symbols: % (percent), ppm (parts per million), lbs/A (pounds per acre), ms/cm (milli-mhos per centimeter), meq/100g (milli-equivalent per 100 grams). Conversions: ppm x 2 = lbs/A, Soluble Salts ms/cm x 640 = ppm.

This report applies to sample(s) tested. Samples are retained a maximum of thirty days after testing.

Analysis prepared by: Waypoint Analytical Virginia, Inc.

by: *Paucic Mc Groary*

Paucic Mc Groary Ph.D., CPAg





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SOIL ANALYSIS REPORT

Analytical Method(s): SMP Buffer pH Mehlich 3 Loss On Ignition Water pH

Date Received: 04/22/2022 Date Of Analysis: 04/25/2022 Date Of Report: 04/25/2022

Sample ID Field ID	Lab Number	OM	W/V	ENR	Phosphorus			Potassium	Magnesium	Calcium	Sodium	pH		Acidity	C.E.C
		% Rate	Soil Class	lbs/A	M3 ppm Rate	ppm Rate	ppm Rate	K ppm Rate	Mg ppm Rate	Ca ppm Rate	Na ppm Rate	Soil pH	Buffer Index	H meq/100g	meq/100g
CV-6	10328	2.9 M		84	9 VL			68 VL	113 VL	3261 VH		7.3		0.0	17.4
CV-7	10329	2.2 L		78	14 L			78 L	110 L	1994 VH		7.5		0.0	11.1
CV-8	10330	3.7 M		112	4 VL			68 L	128 M	1205 H		6.2		1.0	8.3

Sample ID Field ID	Percent Base Saturation					Nitrate	Sulfur	Zinc	Manganese	Iron	Copper	Boron	Soluble Salts		
	K %	Mg %	Ca %	Na %	H %	NO <sub>3</sub> N ppm Rate	S ppm Rate	Zn ppm Rate	Mn ppm Rate	Fe ppm Rate	Cu ppm Rate	B ppm Rate	SS ms/cm Rate		
CV-6	1.0	5.4	93.7		0.0										
CV-7	1.8	8.3	89.8		0.0										
CV-8	2.1	12.9	72.6		12.0										

Values on this report represent the plant available nutrients in the soil. Rating after each value: VL (Very Low), L (Low), M (Medium), H (High), VH (Very High). ENR - Estimated Nitrogen Release. C.E.C. - Cation Exchange Capacity.

Explanation of symbols: % (percent), ppm (parts per million), lbs/A (pounds per acre), ms/cm (milli-mhos per centimeter), meq/100g (milli-equivalent per 100 grams). Conversions: ppm x 2 = lbs/A, Soluble Salts ms/cm x 640 = ppm.

This report applies to sample(s) tested. Samples are retained a maximum of thirty days after testing.

Analysis prepared by: Waypoint Analytical Virginia, Inc.

by: *Pauc Mc Groary*

Pauc Mc Groary Ph.D., CPAg

## **Appendix B: Application Record Forms**

Fertilizer Application Records								
Customer Information					Management Area Information			
Name:					Management Area ID:			
Address:					Management Area Size:			
					Target Species:			
					Notes:			
Date	Supervisor/Applicator	Weather Conditions			Fertilizer Analysis	Rate	Amount Fertilizer Used (1000 lbs/AC)	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>								

Herbicide Application Records								
Customer Information					Management Area Information			
Name:					Management Area ID:			
Address:					Management Area Size:			
					Target Species:			
					Notes:			
Date	Supervisor/Applicator	Weather Conditions			Herbicide Analysis	Rate	Amount Herbicide 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>								

Lime Application Records								
Customer Information					Management Area Information			
Name:					Management Area ID:			
Address:					Management Area Size:			
					Notes:			
Date	Supervisor/Applicator	Weather Conditions			Lime Analysis	Rate	Amount Lime Used (1000 lbs/AC)	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>								

Pesticide Application Records								
Customer Information					Management Area Information			
Name:					Management Area ID:			
Address:					Management Area Size:			
					Target Species:			
					Notes:			
Date	Supervisor/Applicator	Weather Conditions			Pesticide Analysis	Rate	Amount Pesticide 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>								