Municipal Separate Storm Sewer System (MS4) Program Plan

MS4 General Permit (VAR040090)

Prepared for

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Executive Summary

The Virginia Stormwater Management Program (VSMP) General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4s) requires Christopher Newport University (CNU) to develop and implement a comprehensive stormwater management (SWM) program consistent with the Virginia General Permit (VAR04), effective July 9, 2008. CNU registered for continuation of coverage under the current permit on January 10, 2008, and was approved by the Virginia Department of Conservation and Recreation (DCR) on July 15, 2008 (MS4 General Permit VAR040090).

CNU's Stormwater Management Program is presented here in the form of six minimum control measures as required by the Virginia General Permit. This program has been developed with a campus-wide implementation strategy and was further refined and guided by a Program Audit conducted in 2009. Therefore, this Program Plan represents a significant program update in order to meet the permit conditions, as well as to improve the overall effectiveness of the Program. These updated goals and objectives were developed to reduce the discharge of pollutants from the University's MS4 to the maximum extent practicable (MEP), and as such, protect water quality and maintain compliance with water quality standards and corresponding requirements of the Clean Water Act and regulations.

Regulated Small MS4

The CNU regulated small MS4 is contained within the campus boundaries as shown on Exhibit 1, Appendix A. The campus is located in the Lower James River watershed within the Hydrologic Unit Code JL43 (Exhibit 2, Appendix A). The Campus is also located within the City of Newport News and therefore drains, in part, to the City Newport News and the Virginia Department of Transportation regulated MS4s (Appendix A).

Responsible Christopher Newport University Personnel

The following personnel are listed as the responsible persons for implementing, coordinating, and/or reporting on tasks or measurable goals as outlined within this Program Plan.

Mr. William L. Brauer
Executive Vice President
(757) 594-7040

Mr. R. Dean Whitehead
Director of Grounds
(757) 594-8416

Mr. Hunter Bristow
University Architect
(757) 594-7780

Mr. Doug Shipley
Executive Director of Auxiliary Support
(757) 594-7444

Mr. Bruce Bronstein
Director of Communications
(757) 594-7699

Mr. Jonathan S. Waters
Assistant Director of Athletics
(757) 594-8895

Mr. Linwood Gardner, RA
Clerk of the Works
(757) 594-7119

Mr. Leonard L. Alger
Director of Plant Operations Department
(757) 594-7863

Dr. Andy Sheston
Director of Housing
(757) 594-7756

Mr. Keith Outten
Construction and Sign Coordinator
(757) 594-7913

Program Self-Audit

The CNU MS4 program is currently operating under the Registration Statement and accompanying program Minimum Control Measures and Measureable Goals approved in accordance with General Permit No. VAR04. Key changes were made to this General Permit (4 VAC 50-60-1240) compared to that which expired December 9, 2007. In addition, a DCR review of the CNU Program identified significant updates and revisions necessary to comply with the new permit conditions and meet an acceptable level of implementation.

Therefore, in order to effectively evaluate the program measureable goals and improve long-term program administration and implementation, CNU implemented a Program Self-Audit in 2009. The audit identified and provided recommendations to address issues and deficiencies and improve program effectiveness. This Self-Audit consisted of a comprehensive evaluation of all components of the MS4 program, in particular the identification of responsible parties (and roles and responsibilities) for each measure, as well as appropriate reporting metrics. The EPA MS4 Program Evaluation Guidance (EPA-833-R-07-003) was utilized to develop, report and implement the findings. The results of the Program Self-Audit are incorporated into this revised Program Plan.

Minimum Control Measures

CNU's VSMP permit requires that the MS4 Program Plan include the six (6) minimum control measures outlined in the permit. They are the following:

- Public education & outreach - Implement a public education program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of stormwater discharges on water bodies and the steps that the public can take to reduce pollutants in stormwater runoff.
- Public involvement/participation - Promote access to or copies of the MS4 Program Plan and annual report(s) and participate in local activities aimed at increasing public participation to reduce stormwater pollutant loads and improve water quality.
- Illicit discharge detection and elimination – Develop, implement and enforce a program to detect and eliminate illicit discharges into the regulated small MS4.
- Construction site runoff control – Develop, implement, and enforce procedures to reduce pollutants in any stormwater runoff to the regulated small MS4 from construction activities.
- Post-construction runoff control – Develop, implement, and enforce procedures to address stormwater runoff to the regulated small MS4 from new development and redevelopment projects.
- Pollution prevention/good housekeeping – Develop and implement an operation and maintenance program consistent with the MS4 Program Plan that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations.

CNU must implement best management practices (BMPs) to reduce impacts on its receiving waters to the maximum extent practicable (MEP) for each of these six minimum control measures.

Minimum Control Measure No. 1: Public Education and Outreach on Stormwater Impacts

Permit Language: Implement a public education program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of stormwater discharges on water bodies and the steps that the public can take to reduce pollutants in stormwater runoff. The public education program should inform the public about the steps they can take to reduce stormwater pollution. EPA recommends that the public education program be tailored, using a mix of locally appropriate strategies, to target specific audiences and communities.

Responsible Party: Director of Communications

Summary: Minimum Control Measure (MCM) 1 provides for a public education program to conduct outreach activities about the impacts of stormwater discharges on water bodies and the steps that the public can take to reduce pollutants in stormwater runoff. This measure includes the posting of educational materials around the campus, hosting informational workshops, and other activities.

The "public" in the case of CNU is defined as the faculty, students, employees, and visitors to the campus. Therefore, most of these outreach efforts will be part of an on-campus effort to increase the CNU community's knowledge about the steps that they can take to reduce stormwater pollution. These efforts will also be coordinated with MCM No. 2 in order to increase individual and group involvement in local water quality improvement initiatives (discussed in MCM No. 2). CNU will explore opportunities to partner with the adjacent MS4s on education and outreach efforts to engage the broader community through an off-campus effort where possible.

BMPs: CNU implements this MCM through the BMPs provided below. Information concerning each BMP including a detailed description, measurable goals, key personnel and implementation dates are provided in Table 1 on the following page.

- MS4 Program Audit
- CNU MS4 Website
- Community Service Day
- Recycling Program
- Storm Drain Medallions
- Construction Signage

Table 1: MCM No. 1 - Public Education and Outreach **Responsible Party: Director of Grounds**

BMP	Description	Key Personnel	Measurable Goal	Implementation Year
1.1 - MS4 Program Audit	Conduct a self assessment and audit of the MS4 Program to identify and proactively address issues and deficiencies, as well as identify opportunities to improve program effectiveness.	Dean Whitehead	Complete self assessment and audit.	Completed 2008-2009
1.2 - CNU MS4 Website	Update the CNU website to include information on the MS4 Program, copies of the permit, Program Plan and annual reports, educational information about stormwater, links to other stormwater-related websites and stormwater incident reporting information.	Bruce Bronstein	Update CNU website to include information on the MS4 Program. Review website annually and update any necessary information based on changes to CNU policies and/or staffing.	Website initially updated to include MS4 information in 2009-2010; Annual review and updates
1.3 - Community Service Day	Educate students participating in a Lake Maury clean-up (during the community service day held each year in August) about the importance of Lake Maury as a stormwater BMP.	Dean Whitehead	Educate students about Lake Maury as a stormwater BMP annually in August of each year.	Ongoing; Annually (August each year)
1.4 - Recycling Program	Conduct a recycling program on campus. Include information on the recycling program on the CNU website to educate the public about recycling and stormwater management.	Doug Shipley Dean Whitehead Leonard L. Alger Andy Sheston	Continue CNU recycling program. Record the amount of material that is recycled annually.	Ongoing; Annual review and update of information on CNU website

Table 1: MCM No. 1 - Public Education and Outreach			Responsible Party: Director of Grounds	
BMP	**Description**	**Key Personnel**	**Measurable Goal**	**Implementation Year**
1.5 - Storm Drain Medallions	Install storm drain medallions on all campus storm drain inlets to help remind the CNU community about stormwater pollution. The markers read, "No dumping, Drains to Waterway". All storm drain inlets will be monitored on an annual basis to ensure that medallions are replaced when missing or damaged.	Leonard L. Alger	Install storm drain markers on all campus storm drain inlets. Evaluate storm drain markers annually. Replace any missing or damaged markers annually.	Completed 2009-2010; Ongoing to replace any missed or damaged markers annually
1.6 – Construction Signage	Develop a sign to be placed on construction site fencing at all on-campus construction projects explaining the importance of proper erosion and sediment control practices and its connection to stormwater quality.	Bruce Bronstein Leonard L. Alger Hunter Bristow	Install educational sign on fencing at all on-campus construction projects. Inspect and replace any missing or damaged signs as needed.	Completed 2010-2011; Ongoing to inspect and replace any missed or damaged signs as needed

Minimum Control Measure No. 2: Public Involvement/Participation

Permit Language: Promote the availability of the operator's MS4 Program Plan and any modifications for public review and comment. Provide access to or copies of the MS4 Program Plan and annual report(s) or any modifications upon request of interested parties in compliance with all applicable freedom of information regulations. Participate, through promotion, sponsorship, or other involvement, in local activities aimed at increasing public participation to reduce stormwater pollutant loads and improve water quality.

Responsible Party: Director of Communications

Summary: Minimum Control Measure (MCM) 2 provides for public participation by making this MS4 Program Plan available for public review and input. The Program Plan will be placed on the CNU website. More importantly, MCM No. 2 provides for public participation in watershed activities that further the education and awareness of stormwater impacts to receiving water quality.

Through this MCM, CNU will develop a series of activities that will actively involve the students, faculty, and staff and, to the maximum extent practicable, the community at large. CNU will continue to identify programs and partnership opportunities with adjacent MS4s.

BMPs: CNU implements this MCM through the BMPs provided below. Information concerning each BMP including a detailed description, measurable goals, key personnel and implementation dates are provided in Table 2 on the following page.

- MS4 Program Audit
- CNU MS4 Website
- Community Service Day
- Recycling Program
- Storm Drain Medallions
- Construction Signage

Table 2: MCM No. 2 - Public Involvement/Participation **Responsible Party: Director of Grounds**

BMP	Description	Key Personnel	Measurable Goal	Implementation Year
2.1 - MS4 Program Audit	Conduct a self assessment and audit of the MS4 Program to identify and proactively address issues and deficiencies, as well as identify opportunities to improve program effectiveness.	Dean Whitehead	Complete self assessment and audit.	Completed 2008-2009
2.2 - CNU MS4 Website	Update the CNU website to include information on the MS4 Program, copies of the permit, Program Plan and annual reports, educational information about stormwater, links to other stormwater-related websites and stormwater incident reporting information.	Bruce Bronstein	Update CNU website to include information on the MS4 Program. Review website annually and update any necessary information based on changes to CNU policies and/or staffing.	Website initially updated to include MS4 information in 2009-2010; Annual review and updates
2.3 - Community Service Day	Educate students participating in a Lake Maury clean-up (during the community service day held each year in August) about the importance of Lake Maury as a stormwater BMP.	Dean Whitehead	Educate students about Lake Maury as a stormwater BMP annually in August of each year.	Ongoing; Annually (August each year)
2.4 - Recycling Program	Conduct a recycling program on campus. Include information on the recycling program on the CNU website to educate the public about recycling and stormwater management.	Doug Shipley Dean Whitehead Leonard L. Alger Andy Sheston	Continue CNU recycling program. Record the amount of material that is recycled annually.	Ongoing; Annual review and update of information on CNU website

Table 2: MCM No. 2 - Public Involvement/Participation			Responsible Party: Director of Grounds	
BMP	**Description**	**Key Personnel**	**Measurable Goal**	**Implementation Year**
2.5 - Storm Drain Medallions	Install storm drain medallions on all campus storm drain inlets to help remind the CNU community about stormwater pollution. The markers read, "No dumping, Drains to Waterway". All storm drain inlets will be monitored on an annual basis to ensure that medallions are replaced when missing or damaged.	Leonard L. Alger	Install storm drain markers on all campus storm drain inlets. Evaluate storm drain markers annually. Replace any missing or damaged markers annually.	Completed 2009-2010; Ongoing to replace any missed or damaged markers annually
2.6 – Construction Signage	Develop a sign to be placed on construction site fencing at all on-campus construction projects explaining the importance of proper erosion and sediment control practices and its connection to stormwater quality.	Bruce Bronstein Leonard L. Alger Hunter Bristow	Install educational sign on fencing at all on-campus construction projects. Inspect and replace any missing or damaged signs as needed.	Completed 2010-2011; Ongoing to inspect and replace any missed or damaged signs as needed

Minimum Control Measure No. 3: Illicit Discharge Detection and Elimination

Permit Language: Develop, implement and enforce a program to detect and eliminate illicit discharges, as defined at 4VAC50-60-10, into the regulated small MS4. Develop, if not already completed, and maintain, an updated storm sewer system map, showing the location of all known outfalls of the regulated small MS4 including those physically interconnected to a regulated MS4, the associated surface waters and HUCs, and the names and locations of all impaired surface waters that receive discharges from those outfalls. To the extent allowable under state, tribal or local law or regulatory mechanism, effectively prohibit, through ordinance, or other regulatory mechanism, nonstormwater discharges into the storm sewer system and implement appropriate enforcement procedures and actions. Develop and implement procedures to detect and address nonstormwater discharges, including illegal dumping, to the regulated small MS4. Prevent or minimize to the maximum extent practicable, the discharge of hazardous substances or oil in the stormwater discharge(s) from the regulated small MS4. In addition, the MS4 Program must be reviewed to identify measures to prevent the recurrence of such releases and to respond to such releases, and the program must be modified where appropriate. Track the number of illicit discharges identified, provide narrative on how they were controlled or eliminated, and submit the information in accordance with the permit.

Responsible Party: Director of Grounds

Summary: Minimum Control Measure (MCM) 3 requires a program to detect and eliminate illicit discharges into the regulated small MS4. The main BMP for MCM No. 3 is the development and implementation of an Illicit Discharge Detection and Elimination (IDDE) Policy that effectively prohibits non-stormwater discharges into the MS4. Other BMPs include mapping of the MS4, and detecting, eliminating, and preventing any non-stormwater discharges into the MS4, including hazardous substances. This measure also provides for the development of a process with which CNU will track the number and nature of any illicit discharges, the manner in which they are eliminated, and the notification of neighboring or interconnected MS4s.

BMPs: CNU implements this MCM through the BMPs provided below. Information concerning each BMP including a detailed description, measurable goals, key personnel and implementation dates are provided in Table 3 on the following page.

- IDDE Policy
- CNU Stormwater Study
- CNU MS4 Website
- Illicit Discharge Detection Tracking and Reporting
- Outfall Inspections
- Recycling Program
- IDDE Training

Table 3: MCM No. 3 - Illicit Discharge Detection and Elimination **Responsible Party: Director of Grounds**

BMP	Description	Key Personnel	Measurable Goal	Implementation Year
3.1 – IDDE Policy	Develop and adopt an Illicit Discharge, Detection and Elimination (IDDE) Policy to prevent the discharge of contaminated stormwater runoff from CNU properties and operations into the MS4.	Dean Whitehead	Develop and adopt IDDE Policy.	Completed 2009-2010
3.2 - CNU Stormwater Study	Develop and maintain an updated storm sewer system map. CNU developed a Stormwater Quality and Quantity Study in 2002 which was revised in 2008. This study contains detailed information on the existing stormwater conveyance system at CNU. The study also provides detailed storm sewer mapping including drainage areas.	Hunter Bristow	Develop storm sewer system map. Review CNU Stormwater Plan and update any necessary information based on changes to the campus and/or stormwater conveyance system.	Completed 2008-2009; Review and update as needed
3.3 - CNU MS4 Website	Update the CNU website annually to include information on the MS4 Program, copies of the permit, Program Plan and annual reports, educational information about stormwater, links to other stormwater-related websites and stormwater incident reporting information.	Bruce Bronstein	Review website annually and update any necessary information based on changes to CNU policies and/or staffing.	Website initially updated to include MS4 information in 2009-2010; Annual review and updates
3.4 – Illicit Discharge Detection Tracking and Reporting	Develop a procedure and format for tracking training efforts, inspections, and other activities related to the IDDE program. As part of the IDDE program, CNU will document any illicit discharges that are detected.	Dean Whitehead Leonard L. Alger Andy Sheston Doug Shipley Jonathan S. Waters	Develop a procedure and format for tracking training efforts, inspections, and other activities related to the IDDE program. Document any illicit discharges that are detected on an annual basis.	Completed 2010-2011; Ongoing to document any illicit discharges detected annually

Table 3: MCM No. 3 - Illicit Discharge Detection and Elimination **Responsible Party: Director of Grounds**

BMP	Description	Key Personnel	Measurable Goal	Implementation Year
3.5 – Outfall Inspections	Inspect each MS4 outfall on a semi-annual basis. Outfall inspections will be documented and kept as part of the MS4 documentation.	Dean Whitehead	Inspect each MS4 outfall on a semi-annual basis. Maintain records of outfalls that were inspected.	Implemented 2009-2010; Inspect all outfalls semi-annually
3.6 - Recycling Program	Conduct a recycling program on campus. Include information on the recycling program on the CNU website to educate the public about recycling and stormwater management.	Dean Whitehead Leonard L. Alger Andy Sheston Doug Shipley Jonathan S. Waters	Continue CNU recycling program. Record the estimated amount of material that is recycled annually.	Ongoing; Annual review and update of information on CNU website
3.7 – Pollution Prevention Training	CNU will prepare and distribute educational materials regarding the IDDE Policy to all in-house staff on an annual basis.	Dean Whitehead Leonard L. Alger Andy Sheston Doug Shipley Jonathan S. Waters	Prepare and distribute educational materials regarding the IDDE Policy to all in-house staff annually.	Implemented 2010-2011; Annually

Minimum Control Measure No. 4: Construction Site Stormwater Runoff Control

Permit Language: The operator shall develop, implement, and enforce procedures to reduce pollutants in any stormwater runoff to the regulated small MS4 from construction activities that result in a land disturbance of greater than or equal to one acre or equal to or greater than 2,500 square feet in all areas of the jurisdictions designated as subject to the Chesapeake Bay Preservation Area Designation and Management Regulations adopted pursuant to the Chesapeake Bay Preservation Act. Additionally, reduction of stormwater discharges from construction activity disturbing less than one acre must be included in the program if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more.

Responsible Party: University Architect

Summary: Any construction activities that take place on the CNU campus are regulated by the Virginia Erosion and Sediment Control (ESC) Law (§10.560 et seq.) and Regulations (4 VAC 50-30). In addition, all projects must obtain a VSMP General Permit for Discharges of Stormwater from Construction Activities (DCR 01/VAR10). Therefore, this Minimum Control Measure includes provisions to ensure that all construction activities are in compliance with these regulations and permits.

BMPs: CNU implements this MCM through the BMPs provided below. Information concerning each BMP including a detailed description, measurable goals, key personnel and implementation dates are provided in Table 4 on the following page.

- Annual Specifications
- Project Inspections
- ESC Contract Provisions
- Construction Signage
- Land Disturbing Activities Tracking

Table 4: MCM No. 4 - Construction Site Stormwater Runoff Control			Responsible Party: University Architect	
BMP	**Description**	**Key Personnel**	**Measurable Goal**	**Implementation Year**
4.1 – Annual Specifications	The City of Newport News currently performs erosion and sediment control plan review and approval for CNU projects. CNU will consider whether to develop and adopt annual specifications.	Hunter Bristow Linwood Gardner Keith Outten Leonard L. Alger Dean Whitehead	Review ESC plan review and approval process annually.	Completed initial review of draft annual specifications 2009-2010; Annual evaluation of ESC plan review and approval process to decide whether to adopt annual specifications or continue partnership with City of Newport News
4.2 – Project Inspections	The contractor for each construction project is required to inspect the project at least once every seven (7) calendar days or once every 14 calendar days and within 48 hours following a runoff-producing storm event. CNU will audit the compliance of the contractor by reviewing the inspection documentation, revisions to the SWPPP, and overall site compliance quarterly.	Hunter Bristow Linwood Gardner Keith Outten Leonard L. Alger Dean Whitehead	Review copies of all contractors' inspection reports and review each project's Stormwater Pollution Prevention Plan (SWPPP) on a quarterly basis to track compliance with the SWPPP.	Implemented 2009-2010; Reviewing copies of inspection reports is an ongoing activity; Review of each project's SWPPP on a quarterly basis

Table 4: MCM No. 4 - Construction Site Stormwater Runoff Control			Responsible Party: University Architect	
BMP	**Description**	**Key Personnel**	**Measurable Goal**	**Implementation Year**
4.3 – ESC Contract Provisions	Require that for all contracts for construction projects disturbing greater than 2,500 ft^2, the primary contractor must obtain the VSMP Permit for Discharges of Stormwater from Construction Activities, and must also carry out all the provisions required of the Construction Site Operator. Keep copies of permit authorization letters for all construction projects and review each project's Stormwater Pollution Prevention Plan (SWPPP) to ensure adequacy of the SWPPP.	Hunter Bristow Linwood Gardner Keith Outten Leonard L. Alger Dean Whitehead	Maintain copies of permit authorization letters for all construction projects and review each project's Stormwater Pollution Prevention Plan (SWPPP) on a quarterly basis to track compliance with the SWPPP.	Implemented 2009-2010; Maintaining copies of permit authorization letters is an ongoing activity; Review of each project's SWPPP on a quarterly basis
4.4 – Construction Signage	Develop a sign to be placed on construction site fencing at all on-campus construction projects explaining the importance of proper erosion and sediment control practices and its connection to stormwater quality.	Bruce Bronstein Leonard L. Alger Hunter Bristow	Install educational sign on fencing at all on-campus construction projects. Inspect and replace any missing or damaged signs as needed.	Completed 2010-2011; Ongoing to inspect and replace any missed or damaged signs as needed
4.5 – Land-Disturbing Activities Tracking	Track regulated land-disturbing activities on campus and submit the number of regulated land-disturbing activities and the total disturbed acreage associated with each. Keep this information on file as part of the MS4 documentation and included as part of the MS4 Annual Report.	Hunter Bristow	Track the number of regulated land-disturbing activities on campus and report the total disturbed acreage.	Implemented 2008-2009; Updated annually

Minimum Control Measure No. 5: Post-Construction Stormwater Management in New and Redevelopment

Permit Language: The operator shall develop, implement, and enforce procedures to address stormwater runoff to the regulated small MS4 from new development and redevelopment projects that disturb greater than or equal to one acre or equal to or greater than 2,500 square feet in all areas of the jurisdictions designated as subject to the Chesapeake Bay Preservation Area Designation and Management Regulations adopted pursuant to the Chesapeake Bay Preservation Act, including projects less than one acre that are part of a larger common plan of development or sale, that discharge into the regulated small MS4. The procedures must ensure that controls are in place that would prevent or minimize water quality and quantity impacts.

Responsible Party: Director of Grounds

Summary: Stormwater management for the entire CNU campus has been evaluated and documented in the CNU Campus Stormwater Quality and Quantity Management Study. This study serves to document CNU's on-going compliance with the VSMP Stormwater Management requirements, including the long term operation and maintenance of the structural BMPs located on the campus.

BMPs: CNU implements this MCM through the BMPs provided below. Information concerning each BMP including a detailed description, measurable goals, key personnel and implementation dates are provided in Table 5 on the following page.

- CNU Stormwater Study
- ESC Contract Provisions
- BMP Inspections
- BMP Tracking
- BMP Maintenance

Table 5: MCM No. 5 - Post-Construction Stormwater Management in New and Redevelopment			Responsible Party: Director of Grounds	
BMP	**Description**	**Key Personnel**	**Measurable Goal**	**Implementation Year**
5.1 - CNU Stormwater Study	Develop and maintain an updated storm sewer system map. CNU developed a Stormwater Quality and Quantity Study in 2002 which was revised in 2008. This study contains detailed information on the existing stormwater conveyance system at CNU. The study also provides detailed storm sewer mapping including drainage areas.	Hunter Bristow	Develop storm sewer system map. Review CNU Stormwater Plan and update any necessary information based on changes to the campus and/or stormwater conveyance system.	Completed 2008-2009; Review and update as needed
5.2 – ESC Contract Provisions	Require that for all contracts for construction projects disturbing greater than 2,500 ft^2, the primary contractor must obtain the VSMP Permit for Discharges of Stormwater from Construction Activities, and must also carry out all the provisions required of the Construction Site Operator. Keep copies of permit authorization letters for all construction projects and review each project's Stormwater Pollution Prevention Plan (SWPPP) to ensure adequacy of the SWPPP.	Hunter Bristow Linwood Gardner Keith Outten Leonard L. Alger Dean Whitehead	Maintain copies of permit authorization letters for all construction projects and review each project's Stormwater Pollution Prevention Plan (SWPPP) on a quarterly basis to track compliance with the SWPPP.	Implemented 2009-2010; Maintaining copies of permit authorization letters is an ongoing activity; Review of each project's SWPPP on a quarterly basis
5.3 – BMP Inspections	Inspect all known permanent stormwater management facilities on an annual basis. Keep copies of inspection reports on file as part of the MS4 documentation.	Dean Whitehead	Continue CNU BMP inspection program. Maintain records of BMPs that were inspected.	Implemented 2009-2010; Inspect all BMPs annually

Table 5: MCM No. 5 - Post-Construction Stormwater Management in New and Redevelopment			Responsible Party: Director of Grounds	
BMP	**Description**	**Key Personnel**	**Measurable Goal**	**Implementation Year**
5.4 – BMP Tracking	Track all known permanent stormwater management facilities on an annual basis and submit information including the type of facility, geographic location (HUC), impaired surface water that the facility is discharging into (if applicable), and the number of acres treated by the facility. Keep this information on file as part of the MS4 documentation and included as part of the MS4 Annual Report.	Hunter Bristow	Track all known permanent stormwater management facilities on an annual basis.	Implemented 2009-2010; Annually
5.5 – BMP Maintenance	Properly maintain all structural BMPs on the CNU campus and/or under the operational control of CNU in effective operating condition in accordance with good engineering practices and, where applicable, manufacturer specifications. Perform maintenance of permanent stormwater management facilities will be performed, if needed, based on the results of BMP inspections performed as part of this MS4 Program Plan. Any necessary maintenance performed on permanent stormwater management facilities will be documented and included as part of the MS4 Annual Report.	Dean Whitehead	Continue CNU BMP maintenance program as needed based on results of annual BMP inspections. Maintain records of BMP maintenance activities.	Implemented 2009-2010; Ongoing, BMP maintenance as needed based on annual BMP inspections

Minimum Control Measure No. 6: Pollution Prevention/Good Housekeeping

Permit Language: Develop and implement an operation and maintenance program consistent with the MS4 Program Plan that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations. Using training materials including those available from EPA, state, tribe, or other organizations, the program shall include employee training to prevent and reduce stormwater pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and MS4 maintenance. The operator shall identify, implement, evaluate and modify, as necessary, BMPs to meet the following pollution prevention/good housekeeping for municipal operations measurable goals:

- Operation and maintenance programs including activities, schedules, and inspection procedures shall include provisions and controls to reduce pollutant discharges into the regulated small MS4 and receiving surface waters;
- Illicit discharges shall be eliminated from storage yards, fleet or maintenance shops, outdoor storage areas, rest areas, waste transfer stations, and other municipal facilities;
- Waste materials shall be disposed of properly;
- Materials that are soluble or erodible shall be protected from exposure to precipitation;
- Materials, including but not limited to fertilizers and pesticides, that have the potential to pollute receiving waters shall be applied according to manufacturer's recommendations; and
- For state agencies with lands where nutrients are applied, nutrient management plans shall be developed and implemented.

Responsible Party: Director of Grounds

Summary: Minimum Control Measure (MCM) 6 provides for a comprehensive pollution prevention and good housekeeping program. The ultimate goal of pollution prevention/good housekeeping is to prevent or reduce pollutant runoff from campus operations. This measure includes both training and awareness of stormwater impacts to receiving water quality as well as on-campus activities which both prevent and reduce pollutant runoff to the MS4.

BMPs: CNU implements this MCM through the BMPs provided below. Information concerning each BMP including a detailed description, measurable goals, key personnel and implementation dates are provided in Table 6 on the following page.

- Pollution Prevention Training
- Grounds Clean-Up
- Illicit Discharge Detection Tracking and Reporting
- Nutrient Management Plan
- Recycling Program
- Underground Infrastructure Cleaning
- Street Sweeping
- Storm Drain Medallions

Table 6: MCM No. 6 - Pollution Prevention/Good Housekeeping **Responsible Party: Director of Grounds**

BMP	Description	Key Personnel	Measurable Goal	Implementation Year
6.1 – Pollution Prevention Training	CNU will prepare and distribute educational materials regarding the IDDE Policy to all in-house staff on an annual basis.	Dean Whitehead Leonard L. Alger Andy Sheston Doug Shipley Jonathan S. Waters	Prepare and distribute educational materials regarding the IDDE Policy to all in-house staff annually.	Implemented 2010-2011; Annually
6.2 – Grounds Clean-Up	Continue the CNU Grounds Department clean-up program to remove trash and debris on a regular basis. The quantity of trash removed from campus grounds will be kept on file as part of the MS4 Program Plan documentation.	Dean Whitehead	Continue CNU grounds clean-up program. Record the estimated amount of material that is collected annually.	Ongoing; Annually
6.3 – Illicit Discharge Detection Tracking and Reporting	Develop a procedure and format for tracking training efforts, inspections, and other activities related to the IDDE program. As part of the IDDE program, CNU will document any illicit discharges that are detected.	Dean Whitehead Leonard L. Alger Andy Sheston Doug Shipley Jonathan S. Waters	Develop a procedure and format for tracking training efforts, inspections, and other activities related to the IDDE program. Document any illicit discharges that are detected on an annual basis.	Completed 2010-2011; Ongoing to document any illicit discharges detected annually
6.4 – Nutrient Management Plan	Implement a Nutrient Management Plan (NMP) for the athletic facilities and the balance of the campus. The CNU Grounds Department currently operates using the NMP and will continue to evaluate the NMP once every three years and provide any updates, as needed.	Dean Whitehead Jonathan S. Waters	Continue operating under the CNU NMP for the campus. Review the NMP and update any necessary information.	Completed 2009-2010; Review once every three years and update as needed

Table 6: MCM No. 6 - Pollution Prevention/Good Housekeeping **Responsible Party: Director of Grounds**

BMP	Description	Key Personnel	Measurable Goal	Implementation Year
6.5 - Recycling Program	Conduct a recycling program on campus. Include information on the recycling program on the CNU website to educate the public about recycling and stormwater management.	Dean Whitehead Leonard L. Alger Andy Sheston Doug Shipley Jonathan S. Waters	Continue CNU recycling program. Record the estimated amount of material that is recycled annually.	Ongoing; Annual review and update of information on CNU website
6.6 – Underground Infrastructure Cleaning	Perform maintenance by cleaning a portion of the campus stormwater infrastructure (catch basins, storm drain pipes) on an annual basis. Document the estimated length of storm drain pipe cleaned and/or the estimated number of catch basins cleaned on an annual basis to include in the annual report.	Leonard L. Alger Dean Whitehead	Continue CNU underground infrastructure maintenance program. Record the estimated length of storm drain pipe cleaned and/or the estimated number of catch basins cleaned on an annual basis.	Ongoing; Annually
6.7 – Street Sweeping	Continue the ongoing street sweeping program. Vacuum sweep selected campus roads and parking lots on an annual basis. Document the quantity of material collected on an annual basis to include in the annual report.	Dean Whitehead	Continue CNU street sweeping program. Record the amount of material that is removed annually.	Ongoing; Selected campus roads and parking lots are vacuum swept on an annual basis
6.8 - Storm Drain Medallions	Install storm drain medallions on all campus storm drain inlets to help remind the CNU community about stormwater pollution. The markers read, “No dumping, Drains to Waterway”. All storm drain inlets will be monitored on an annual basis to ensure that medallions are replaced when missing or damaged.	Dean Whitehead	Install storm drain markers on all campus storm drain inlets. Evaluate storm drain markers annually. Replace any missing or damaged markers annually.	Completed 2009-2010; Ongoing to replace any missed or damaged markers annually

Table 7: MCM Summary

BMP	Responsible Party	Key Personnel
MCM No. 1 – Public Education and Outreach		
1.1 - MS4 Program Audit	Dean Whitehead	Dean Whitehead
1.2 - CNU MS4 Website	Dean Whitehead	Bruce Bronstein
1.3 – Community Service Day	Dean Whitehead	Dean Whitehead
1.4 - Recycling Program	Dean Whitehead	Doug Shipley Dean Whitehead Leonard L. Alger Andy Sheston
1.5 - Storm Drain Medallions	Dean Whitehead	Leonard L. Alger
1.6 – Construction Signage	Dean Whitehead	Bruce Bronstein Leonard L. Alger Hunter Bristow
MCM No. 2 – Public Involvement/Participation		
2.1 - MS4 Program Audit	Dean Whitehead	Dean Whitehead
2.2 - CNU MS4 Website	Dean Whitehead	Bruce Bronstein
2.3 - Community Service Day	Dean Whitehead	Dean Whitehead
2.4 - Recycling Program	Dean Whitehead	Doug Shipley Dean Whitehead Leonard L. Alger Andy Sheston
2.5 - Storm Drain Medallions	Dean Whitehead	Leonard L. Alger
2.6 – Construction Signage	Dean Whitehead	Bruce Bronstein Leonard L. Alger Hunter Bristow
MCM No. 3 – Illicit Discharge Detection and Elimination		
3.1 – IDDE Policy	Dean Whitehead	Dean Whitehead
3.2 - CNU Stormwater Study	Dean Whitehead	Hunter Bristow
3.3 - CNU MS4 Website	Dean Whitehead	Bruce Bronstein
3.4 – Illicit Discharge Detection Tracking and Reporting	Dean Whitehead	Dean Whitehead Leonard L. Alger Andy Sheston Doug Shipley Jonathan S. Waters
3.5 – Outfall Inspections	Dean Whitehead	Dean Whitehead
3.6 - Recycling Program	Dean Whitehead	Dean Whitehead Leonard L. Alger Andy Sheston Doug Shipley Jonathan S. Waters

Table 7: MCM Summary

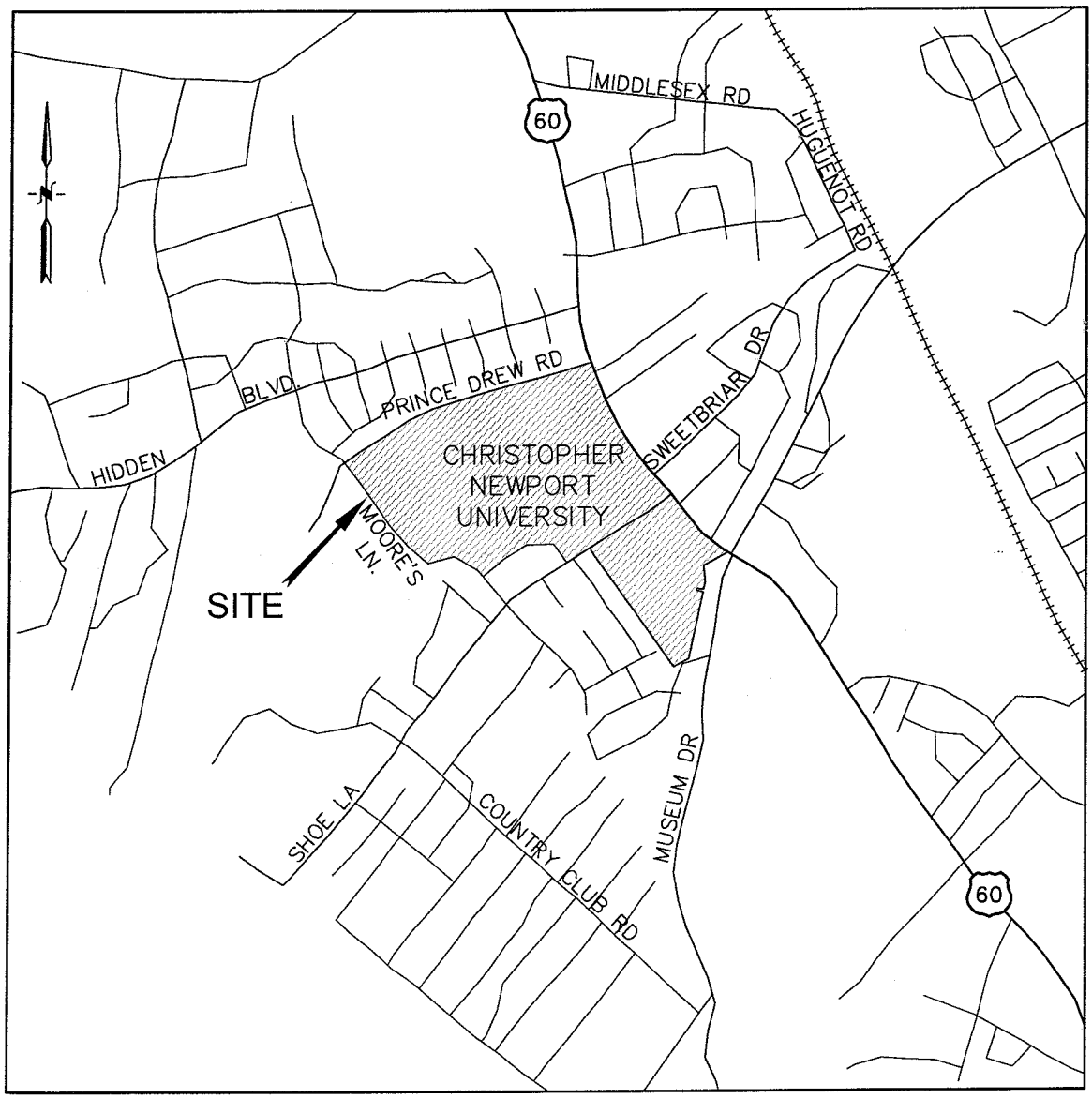
BMP	Responsible Party	Key Personnel
3.7 – Pollution Prevention Training	Dean Whitehead	Dean Whitehead Leonard L. Alger Andy Sheston Doug Shipley Jonathan S. Waters
MCM No. 4 – Construction Site Stormwater Runoff Control		
4.1 – Annual Specifications	Hunter Bristow	Hunter Bristow Linwood Gardner Keith Outten Leonard L. Alger Dean Whitehead
4.2 – Project Inspections	Hunter Bristow	Hunter Bristow Linwood Gardner Keith Outten Leonard L. Alger Dean Whitehead
4.3 – ESC Contract Provisions	Hunter Bristow	Hunter Bristow Linwood Gardner Keith Outten Leonard L. Alger Dean Whitehead
4.4 – Construction Signage	Hunter Bristow	Bruce Bronstein Leonard L. Alger Hunter Bristow
4.5 – Land-Disturbing Activities Tracking	Hunter Bristow	Hunter Bristow
MCM No. 5 – Post-Construction Stormwater Management in New and Redevelopment		
5.1 – CNU Stormwater Study	Dean Whitehead	Hunter Bristow
5.2 – ESC Contract Provisions	Dean Whitehead	Hunter Bristow Linwood Gardner Keith Outten Leonard L. Alger Dean Whitehead
5.3 – BMP Inspections	Dean Whitehead	Dean Whitehead
5.4 – BMP Tracking	Dean Whitehead	Hunter Bristow
5.5 – BMP Maintenance	Dean Whitehead	Dean Whitehead
MCM No. 6 – Pollution Prevention/Good Housekeeping		
6.1 – Pollution Prevention Training	Dean Whitehead	Dean Whitehead Leonard L. Alger Andy Sheston Doug Shipley Jonathan S. Waters

Table 7: MCM Summary

BMP	Responsible Party	Key Personnel
6.2 – Grounds Clean-Up	Dean Whitehead	Dean Whitehead
6.3 – Illicit Discharge Detection Tracking and Reporting	Dean Whitehead	Dean Whitehead Leonard L. Alger Andy Sheston Doug Shipley Jonathan S. Waters
6.4 – Nutrient Management Plan	Dean Whitehead	Dean Whitehead Jonathan S. Waters
6.5 – Recycling Program	Dean Whitehead	Dean Whitehead Leonard L. Alger Andy Sheston Doug Shipley Jonathan S. Waters
6.6 – Underground Infrastructure Cleaning	Dean Whitehead	Leonard L. Alger Dean Whitehead
6.7 – Street Sweeping	Dean Whitehead	Dean Whitehead
6.8 - Storm Drain Medallions	Dean Whitehead	Dean Whitehead

Appendix A
Maps

(Reference CNU Stormwater Quality and Quantity Management Study – Koontz-Bryant, P.C., May 2002, Revised December 2008)

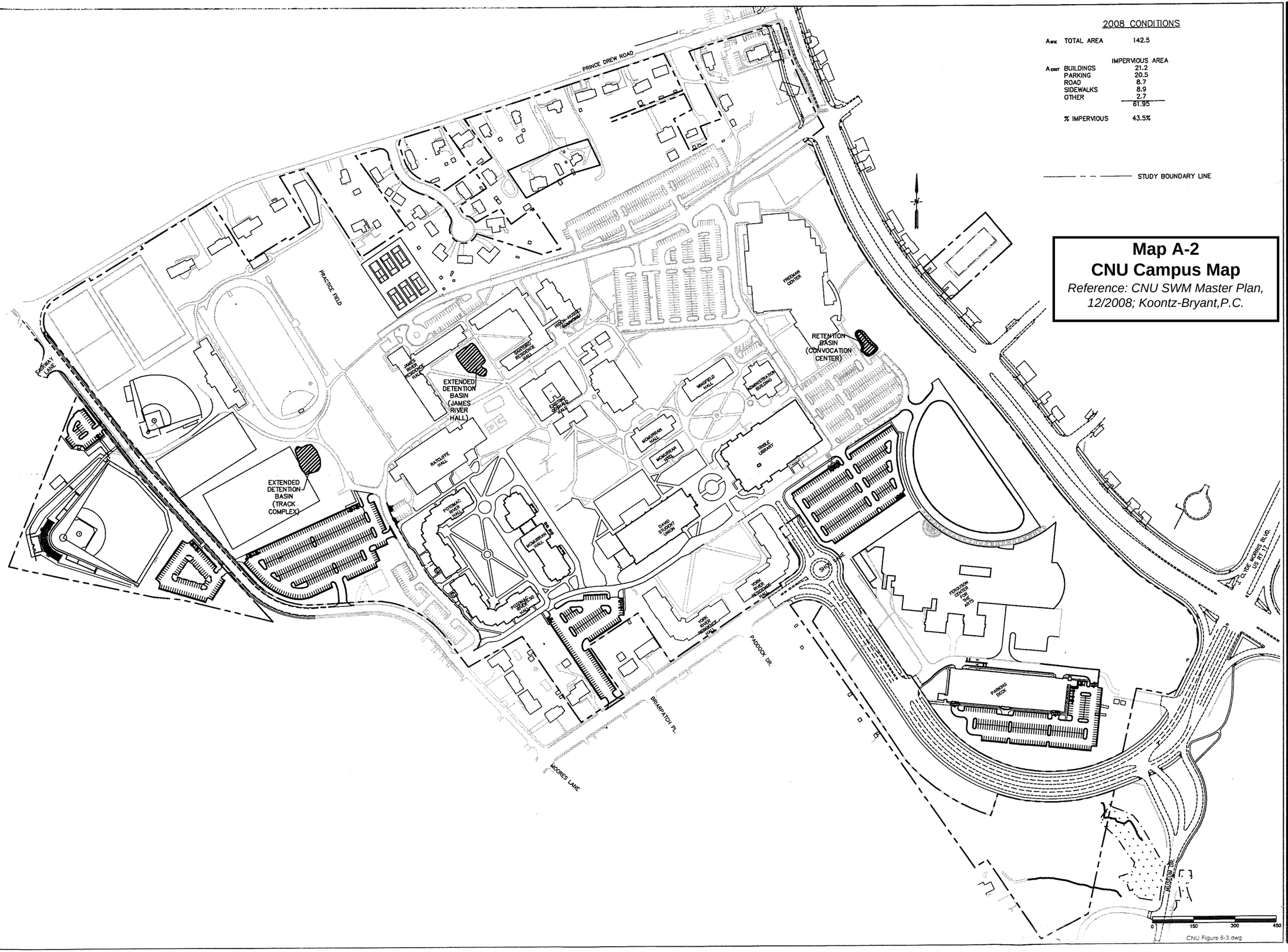


VICINITY MAP

SCALE: 1" = 2000'

Map A-1

Reference: CNU SWM Master Plan, 12/2008; Koontz-Bryant, P.C.



2008 CONDITIONS

A_{SITE}	TOTAL AREA	142.5
		IMPERVIOUS AREA
A_{DEV}	BUILDINGS	21.2
	PARKING	20.5
	ROAD	8.7
	SIDEWALKS	8.9
	OTHER	2.7
		61.95
	% IMPERVIOUS	43.5%

——— – – ——— STUDY BOUNDARY LINE

Map A-2
CNU Campus Map

Reference: CNU SWM Master Plan, 12/2008; Koontz-Bryant,P.C.

REVISIONS:

DESIGNED: WWW
DRAWN: VLS
CHECKED: PFH

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kbpc@koontzbryant.com

CHRISTOPHER NEWPORT UNIVERSITY
NEWPORT NEWS VIRGINIA

2008 CURRENT CONDITIONS AND IMPERVIOUS AREA

DATE: APRIL 30, 2002
SCALE: 1"= 150'
JN: 1585

6-3

Appendix B
Stormwater BMP Maintenance and Inspection Documents

(Reference CNU Stormwater Quality and Quantity Management Study – Koontz-Bryant, P.C., May 2002, Revised December 2008)

BMP Maintenance Summary

Maintenance guidelines were taken from the Virginia Stormwater Management Manual and maintenance information provided by IWT/Cargo-Guard.

Retention Basin

- General maintenance
  - Earthen Embankment
    - The embankment should be mowed regularly with grass cut no less than 6 to 8 inches in height
    - Lime and fertilizer should be applied as necessary
    - All erosion gullies should be backfilled with topsoil, reseeded and mulched until vegetation is established
    - All bare areas should be seeded or stabilized to prevent erosion
    - All animal burrows should be back filled and compacted and burrowing animals should be removed from the area
    - All trees, woody vegetation, and deep rooted growth should be removed from the embankment and adjacent areas.
  - Principle Spillway
    - Periodically clear spillway structures of debris
    - Check concrete structures for cracks and leaks during low water conditions
    - Annually clear outlet protection and discharge channels of brush
    - Trash racks and locking mechanisms should be periodically checked to make sure they are intact and operable
    - All gates and valves should be operated and inspected to insure proper function
    - Any repairs made to the principal spillway should be reviewed by a professional engineer
  - Vegetative Emergency Spillway
    - Should be mowed concurrent with the embankment
    - Periodically clear the approach and discharge channels of brush and woody vegetation
    - After any flow through the emergency spillway, the spillway should be checked for erosion and repaired and stabilized as necessary
  - Sediment Forebay
    - Provide access to the forebay, possibly with a staging pad
    - Install a fixed sediment depth marker
    - Sediment should be removed every 3 to 5 years or when 6 to 12 inches of sediment has accumulated
    - Designate a spoil area for disposal of dredging material
  - Landscaping
    - Landscaping should be maintained in accordance to specific plant requirements.
    - Dead plants are to be replaced and diseased plants are to be treated

        - Aquatic and emergent vegetation may need to be periodically thinned or reinforced
- Vegetation
    - The side slopes, embankment and emergency spillway should be mowed at least twice a year to discourage woody growth
    - Water-tolerant, hardy, and slow-growing grass should be planted in the bottom of the basin where mowing is difficult
    - Replacement plantings should be installed as necessary
    - Aquatic plants should not require harvesting before winter plant die-back
- Debris and litter removal
    - Litter and debris that accumulates in the inflow points and the outlet control structures should be removed periodically
- Sediment removal
    - Periodically monitor sediment deposition
    - Sediment will need to be removed from the basin every 5 to 10 years.
    - The low flow or extended-detention orifice may need to be cleaned more often
    - Any pumping of standing water or dewatering of dredged sediments must comply with VESCH and any local requirements
    - Sediments should be tested regularly and before disposal to find leaching potential and the level of accumulation of hazardous material, disposal of hazardous material shall be in compliance with health department requirements
- Inspections
    - Annual inspection shall be made to insure basin is functioning in the manner intended

Extended Detention Basin

- Vehicle access should be provided to the sediment forebay to allow for long term maintenance and repairs
- Establish an onsite location for sediment dewatering and disposal
- Test sediment for accumulation of heavy metals and properly dispose of the sediment depending on the test results.
- Post a sign that designates the person or organization responsible for basin maintenance
- Routine maintenance inspections should be conducted by authorized personnel
- See maintenance plan for Retention Basin

Lake Maury BMP

- Sediment Forebay
    - Install a fixed sediment depth marker
    - Sediment should be removed when 6 to 12 inches of sediment has accumulated
    - Inspections should occur every 3 months or after every major storm
- Plunge Pool

- Monitor sediment in plunge pool. Inspections should be made every 3 months or after every major storm.
- Clear out the sediment accumulated in the plunge pool to prevent the necessity of dredging the forebay annually or semi-annually depending on sediment accumulation.

- Baffle Curtain
  - Inspect baffle weekly at start of deployment to ensure anchors are properly set and holding and that no debris is accumulating in flow through window.
  - After a few weeks of monitoring without issue the baffle only needs to be inspected monthly and after every major rainstorm.
  - Check to see that the lower skirt is not buried by accumulated sediments by looking to see if the freeboard is consistent across the length of the barrier
  - If the floatation is beginning to submerge, then the curtain needs to be lifted up and out of the mud line.
  - Check for wear and tear on the baffle, curtain should last 10 years if properly maintained

INSPECTION REPORT
Christopher Newport University
Lake Maury BMP

Instructions: This inspection record will be completed bi-annually and after a major storm event. Mark each item on this list as being acceptable or needing attention. If an item needs attention then the date of this observation should be noted and this list is to remain active until the issue is resolved and the date of the repair is noted. The comment section for each item is to be used for noting problems and documenting how they were resolved.

Date(s) and time of examination:_____

Name(s) of person(s) conducting inspection:_____

	Acceptable	Needs Attention	
Check for accumulated sediment Remove sediment every 5 years Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check for accumulated sediment in plunge pool Remove sediment every 5 years Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check baffle anchors to assure they are set and holding Repair, reinforce, or replace as necessary Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check for debris in flow through window Remove debris if obstructing flow Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check for consistent floatation If submerged lift curtain up and out of the mud line Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check for wear and tear on the baffle Curtain should need replacing after 10 years Comments:_____	☐	☐	Date Noticed: Date Repaired:

Other Observations:

INSPECTION REPORT
Christopher Newport University
Extended Detention Basin near Track Complex

Instructions: This inspection record will be completed bi-annually and after a major storm event. Mark each item on this list as being acceptable or needing attention. If an item needs attention then the date of this observation should be noted and this list is to remain active until the issue is resolved and the date of the repair is noted. The comment section for each item is to be used for noting problems and documenting how they were resolved.

Date(s) and time of examination:_____

Name(s) of person(s) conducting inspection:_____

	Acceptable	Needs Attention	
Check height of grass on embankment and spillway Ensure included in campus mowing schedule Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check health of grass on embankment and spillway Apply lime or fertilizer as necessary Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check for erosion gullies Backfill with topsoil, reseed and mulch to establish vegetation Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check Vegetation for bare areas Seed or stabilize areas Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check for animal burrows Remove animals and fill and compact burrows Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check embankment for trees, woody vegetation and deep rooted growth Remove plant material Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check spillway structure for debris Clear debris Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check concrete structures for cracks and leaks Repair or replace structures Comments:_____	☐	☐	Date Noticed: Date Repaired:

	Acceptable	Needs Attention	
Check outlet protection and discharge channel for brush Remove brush or other debris Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check trash racks and locking mechanisms Repair or replace if not intact and operable Comments:_____	☐	☐	Date Noticed: Date Repaired:
Inspect and operate spillway gates and valves Repair or replace if not functioning properly Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check approach and discharge channels for obstructions Clear away brush, debris, or woody vegetation Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check emergency spillway for erosion Repair and stabilize Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check for accumulated sediment Remove sediment every 5 years Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check landscaping for dead or diseased plants Treat or replace plant material as necessary Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check aquatic and emergent vegetation Thin or reinforce as necessary Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check sediment accumulation in low flow orifice Clean out orifice Comments:_____	☐	☐	Date Noticed: Date Repaired:

Other Observations:

INSPECTION REPORT
Christopher Newport University
Extended Detention Basin near James River Residence Hall

Instructions: This inspection record will be completed bi-annually and after a major storm event. Mark each item on this list as being acceptable or needing attention. If an item needs attention then the date of this observation should be noted and this list is to remain active until the issue is resolved and the date of the repair is noted. The comment section for each item is to be used for noting problems and documenting how they were resolved.

Date(s) and time of examination:_____

Name(s) of person(s) conducting inspection:_____

	Acceptable	Needs Attention	
Check height of grass on embankment and spillway Ensure included in campus mowing schedule Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check health of grass on embankment and spillway Apply lime or fertilizer as necessary Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check for erosion gullies Backfill with topsoil, reseed and mulch to establish vegetation Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check Vegetation for bare areas Seed or stabilize areas Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check for animal burrows Remove animals and fill and compact burrows Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check embankment for trees, woody vegetation and deep rooted growth Remove plant material Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check spillway structure for debris Clear debris Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check concrete structures for cracks and leaks Repair or replace structures Comments:_____	☐	☐	Date Noticed: Date Repaired:

	Acceptable	Needs Attention	
Check outlet protection and discharge channel for brush Remove brush or other debris Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check trash racks and locking mechanisms Repair or replace if not intact and operable Comments:_____	☐	☐	Date Noticed: Date Repaired:
Inspect and operate spillway gates and valves Repair or replace if not functioning properly Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check approach and discharge channels for obstructions Clear away brush, debris, or woody vegetation Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check emergency spillway for erosion Repair and stabilize Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check for accumulated sediment Remove sediment every 5 years Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check landscaping for dead or diseased plants Treat or replace plant material as necessary Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check aquatic and emergent vegetation Thin or reinforce as necessary Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check sediment accumulation in low flow orifice Clean out orifice Comments:_____	☐	☐	Date Noticed: Date Repaired:

Other Observations:

INSPECTION REPORT
Christopher Newport University
Retention basin near Convocation, Sports & Wellness Center

Instructions: This inspection record will be completed bi-annually and after a major storm event. Mark each item on this list as being acceptable or needing attention. If an item needs attention then the date of this observation should be noted and this list is to remain active until the issue is resolved and the date of the repair is noted. The comment section for each item is to be used for noting problems and documenting how they were resolved.

Date(s) and time of examination:_____

Name(s) of person(s) conducting inspection:_____

	Acceptable	Needs Attention	
Check height of grass on embankment and spillway Ensure included in campus mowing schedule Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check health of grass on embankment and spillway Apply lime or fertilizer as necessary Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check for erosion gullies Backfill with topsoil, reseed and mulch to establish vegetation Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check Vegetation for bare areas Seed or stabilize areas Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check for animal burrows Remove animals, fill and compact burrows Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check embankment for trees, woody vegetation and deep rooted growth Remove plant material Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check spillway structure for debris Clear debris Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check concrete structures for cracks and leaks Repair or replace structures Comments:_____	☐	☐	Date Noticed: Date Repaired:

	Acceptable	Needs Attention	
Check outlet protection and discharge channel for brush Remove brush or other debris Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check trash racks and locking mechanisms Repair or replace if not intact and operable Comments:_____	☐	☐	Date Noticed: Date Repaired:
Inspect and operate spillway gates and valves Repair or replace if not functioning properly Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check approach and discharge channels for obstructions Clear away brush, debris, or woody vegetation Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check emergency spillway for erosion Repair and stabilize Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check for accumulated sediment Remove sediment every 5 years Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check landscaping for dead or diseased plants Treat or replace plant material as necessary Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check aquatic and emergent vegetation Thin or reinforce as necessary Comments:_____	☐	☐	Date Noticed: Date Repaired:
Check sediment accumulation in low flow orifice Clean out orifice Comments:_____	☐	☐	Date Noticed: Date Repaired:

Other Observations: