

# STORMWATER UTILITY MONTHLY REPORT

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## PART 1: WATER QUANTITY DRIVEN WORK

### 1. Public Works Stream Restoration



**Project Description:** This project involves two phases of repairing/restoring a badly eroding stream channel in an extremely high risk situation adjacent to Public Works. The first phase will be preliminary engineering; the second will be construction/restoration.

**Project Background:** There are two unnamed intermittent streams that flow from the south side of downtown along South Greensboro Street and Old Pittsboro Road, join just above the 54 Bypass, and then flow under the bypass and along the Public Works property line before joining Morgan Creek. The stream channel is very incised adjacent to Public Works, with an extremely actively eroding bank. During Hurricane Florence, a large section of the streambank immediately adjacent to the fuel tanks (as well as outbuildings) collapsed, escalating and accelerating the importance of addressing the bank erosion. This project has been an identified need since 2015.

**Status: Active/Funded.** The Council approved assistance with preliminary engineering from a private engineering firm in June. A contract was executed with Jennings Environmental in August. 30% design review occurred in October, 60% review in November, and 90% review in January. The adjacent property owner has provided permissions. The final design, bid documents, and construction cost estimates are being prepared, with preliminary engineering scheduled to be completed in February. Construction bidding is anticipated for mid 2020. Staff are continuing to work diligently with NCDPS and FEMA to pursue federal assistance for this project. Stormwater staff consider this to be the highest priority capital project.

**Fiscal and Staffing Considerations:** The contract with Jennings Environmental is for \$58k. Construction is preliminarily estimated to cost \$200k-\$300k. FEMA/NCDPS have reviewed past and planned work and have not raised concerns, although this is not a guarantee of federal funding. There is a significant staff impact associated with project and grant management.

**Additional Information:**

[https://www.fema.gov/media-library-data/1534520496845-4b41646e3d8839c768deb3a7f4ded513/PADeliveryModelFactSheetFINAL\\_Updated\\_052418.pdf](https://www.fema.gov/media-library-data/1534520496845-4b41646e3d8839c768deb3a7f4ded513/PADeliveryModelFactSheetFINAL_Updated_052418.pdf)  
<https://carrboro.legistar.com/LegislationDetail.aspx?ID=2288740&GUID=0B2EA271-314B-4ED8-8A38-0E199F87A49F%3E&FullText=1>

## 2. Broad Street Culvert Replacement



**Project Description:** This project will involve two phases to replace an old and undersized culvert on the 400 block of Broad Street. The first phase will be preliminary engineering; the second will be construction.

**Project Background:** An old and undersized culvert on Broad Street has been responsible for previous overtopping of the road. This site has been included in previous Town flood studies by Sungate Engineering.

**Status: Active/Funded.** The Council approved funding for preliminary engineering in June with budget modification in January. An RFQ for assistance with preliminary engineering from a private engineering firm(s) was released in June. Interviews were held in July, and contract negotiations and coordination continued in August-October since the bids that were received exceeded the amount approved by the Council and currently available in the Stormwater Enterprise Fund. Sungate Design provided the lowest responsive bid, and will be providing preliminary engineering support. Preliminary engineering will be completed in FY 19/20, and construction bid in the summer of 2020.

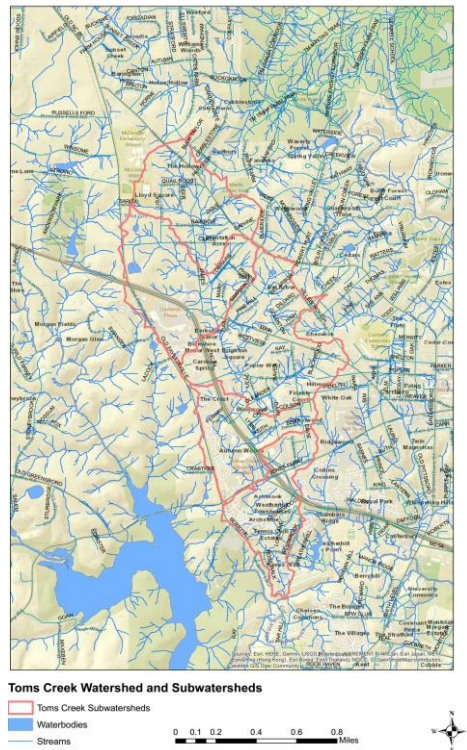
**Fiscal and Staffing Considerations:** The preliminary engineering will cost \$50k. Construction is estimated to cost approximately \$125k; a separate project ordinance will be brought to Council for that phase of work. There is a staff impact associated with project management.

**Additional Information:**

<https://carrboro.legistar.com/LegislationDetail.aspx?ID=2288740&GUID=0B2EA271-314B-4ED8-8A38-0E199F87A49F%3E&FullText=1>

<https://carrboro.legistar.com/LegislationDetail.aspx?ID=2288740&GUID=0B2EA271-314B-4ED8-8A38-0E199F87A49F%3E>

### 3. Toms Creek Watershed Assessment and Outreach



**Project Description:** In April 2019, the Council directed staff to move forward with an assessment of conditions in a subwatershed. In June, 2019, an outreach session was held. There is an ongoing need to address flooding issues in the upper Toms Creek watershed.

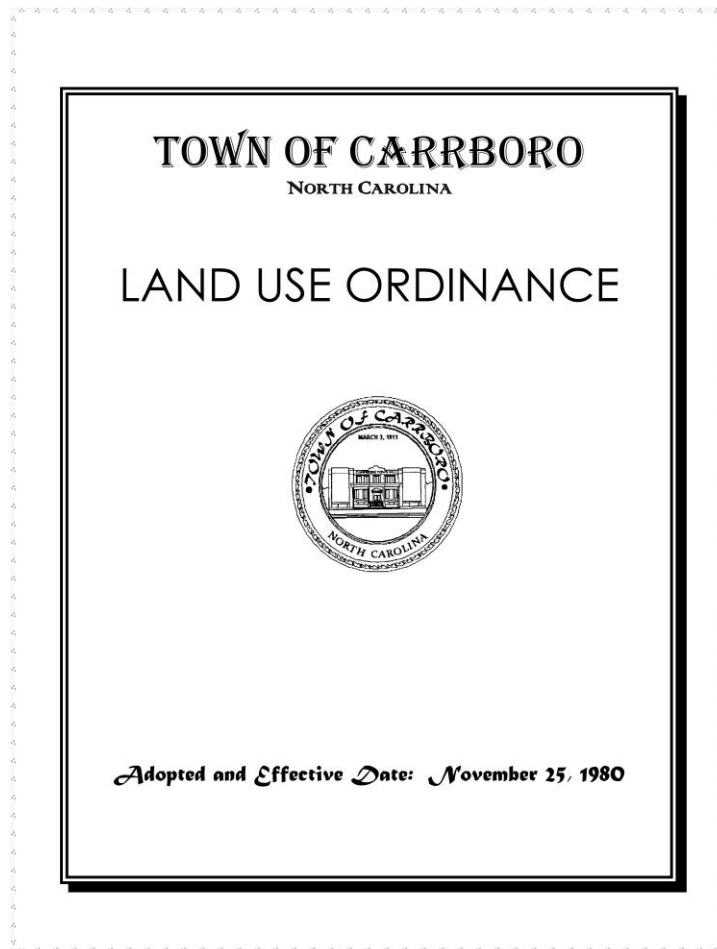
**Project Background:** For the Toms Creek watershed, flooding and drainage is a recurring and important theme. The upper watershed has received the most attention in recent years due to the degree of flooding and drainage issues experienced by residential property owners both in the regulated floodplain and other areas. A watershed based approach is needed to comprehensively address the issues that exist. An emerging concern is resiliency in consideration of the growing number of recent intense storms and the potential for a shift to more flooding in the future due to climate change.

**Status: Active/funded.** An outreach session was held in June. Sungate Engineering is pursuing additional studies of a catchment between Hillsborough Rd. and West Main Street with known drainage issues. Work with the Center for Neighborhood Technology (CNT) to assist with neighborhood preparedness and resilience to flooding and drainage concerns is underway, including coordination with the Stormwater Advisory Commission. A presentation and discussion is planned for February 13<sup>th</sup>. Program design recommendations and preparation of draft and final reports will be pursued in early 2020.

**Fiscal and Staffing Considerations:** Sungate's work is costing \$16.5k and the Center for Neighborhood Technology's work is costing \$25k. There could be further implementation costs as a result of these projects. There will be a staff impact with overseeing the work.

**Additional Information:** Additional information is available from multiple Council agenda items from 2013-2019. A [project website](#) has been created with relevant historical and project related information.

#### 4. Land Use Ordinance Stormwater Provisions Review



**Project Description:** LUO stormwater provisions are currently under review.

**Project Background:** At the April 16th meeting, the Council referred further review of the stormwater provisions in the LUO to staff and the Stormwater Advisory Commission in consideration of the flooding and drainage impacts being experienced and elevated risk for increasing impacts due to climate change.

**Status:** *Pending staff capacity.* This is being considered by Planning and Public Works staff, the Town Engineer, and the Stormwater Advisory Commission.

**Fiscal and Staffing Considerations:** There is no fiscal impact with reviewing and amending the LUO. There is a staff impact with performing the review.

**Additional Information:**

<https://carrboro.legistar.com/LegislationDetail.aspx?ID=3919560&GUID=59CDD594-2973-4C2B-813C-738A1CF5707B&Options=&Search>

<http://www.townofcarrboro.org/DocumentCenter/View/698/Article-XVI-Floodways-Floodplains-Drainage-and-Erosion-PDF>

## 5. FEMA Hazard Mitigation Grant Program (HMGP) Active Elevation Project



**Project Description:** Utilization of FEMA HMGP funds to elevate homes on Lorraine Street.

**Project Background:** In 2016, the Town was awarded a FEMA grant (administered by the NC Department of Public Safety [NCDPS]) to elevate two homes at 400 Lorraine Street and 403 Lorraine Street. After start up project delays, the Town hired Summit Design and Engineering Services in the late spring of 2018 to assist with pre-construction/design and bidding services, construction administration and grant compliance monitoring. Stormwater staff began providing administrative support for the project in October 2018. Summit wrapped up the preconstruction/design phase of the project in December, construction bid advertisement followed, and a responsive bid was received, but the bid exceeded the available funding. Staff requested grant extension and additional funding to cover increased construction costs in February.

**Status: Active-construction.** A request for additional funding and a grant extension through March, 2020 were approved in December. Staff coordinated with a contractor, Summit staff, and the owners to begin construction in January, with a goal of completion by the end of March. Both Planning and Public Works staff are providing administrative and project management support.

**Fiscal and Staffing Considerations:** Costs for work covered by the grant (>\$300k) will first be borne by the Town and then reimbursed to the Town with a combination of both Federal and State funds covering eligible costs, provided that all grant requirements are met. There is a significant staff impact to administer the grant funds.

### **Additional Information:**

<https://carrboro.legistar.com/LegislationDetail.aspx?ID=3767377&GUID=67B319F8-E1CC-4E4B-9DC2-5FA5AEC6CCED&Options=&Search=&FullText=1>

<https://carrboro.legistar.com/LegislationDetail.aspx?ID=2825729&GUID=06EB126A-0AE5-4A83-BFD0-0AA28C2CA6F1&Options=ID|Text|&Search=Flood>

[https://www.fema.gov/media-library-data/1493317448449-b83f27544e36b7bf67913f964a56b15a/HMA\\_Homeowners\\_Guide\\_040717\\_508.pdf](https://www.fema.gov/media-library-data/1493317448449-b83f27544e36b7bf67913f964a56b15a/HMA_Homeowners_Guide_040717_508.pdf)

## 6. FEMA Hazard Mitigation Grant Program Letters of Interest (Acquisition and Elevation)



**Project Description:** The information presented below is for an acquisition project for 116 Carol Street, and a new elevation project for 100 James Street

**Project Background:** Following on Hurricane Florence and Tropical Storm Michael, FEMA announced new rounds of HMGP funding. In addition to the Lorraine Street properties discussed above, two additional homeowners at 116 Carol Street and 100 James Street (properties included in previous HMGP applications for acquisitions that did not move forward) have responded, and were included in Letters of Interest submitted by the Town to the NC Department of Public Safety (NCDPS). Staff submitted one Letter of Interest for an acquisition project for 116 Carol Street and a second Letter of Interest for elevation of the home at 100 James Street in early 2019. Staff received notification in the summer of 2019 that the NCDPS would accept applications.

**Status: Applications in progress.** Staff have submitted application materials to the NCDPS. Application materials for the 116 Carol acquisition were submitted in October under Hurricane Florence and application materials for the 100 James Street elevation were submitted in November under Tropical Storm Michael. Staff anticipate a response to the applications in early 2020, and if approved, finalization of one or both grant agreements later in 2020.

**Fiscal and Staffing Considerations:** If the Town is able to successfully enter into grant agreements (one for acquisition and one for elevation), costs for work covered by the grants will first be borne by the Town and then reimbursed to the Town with a combination of both Federal and State funds covering eligible costs, provided that all grant requirements are met. Elevation costs can be reimbursed at up to \$175k per home and acquisition costs at up to \$276k per home. There would be a significant staff impact to administer the grant funds.

### **Additional Information:**

[https://www.fema.gov/media-library-data/1493317448449-b83f27544e36b7bf67913f964a56b15a/HMA Homeowners Guide 040717 508.pdf](https://www.fema.gov/media-library-data/1493317448449-b83f27544e36b7bf67913f964a56b15a/HMA_Homeowners_Guide_040717_508.pdf)

## 7. FEMA Public Assistance: Damage Recovery from Hurricane Florence



### Overview

Public Assistance (PA) is FEMA's largest grant program providing funds to assist communities responding to and recovering from major disasters or emergencies declared by the President. The program provides emergency assistance to save lives and protect property, and assists with permanently restoring community infrastructure affected by a federally declared incident.

### Eligible Applicants

Eligible applicants include states, federally recognized tribal governments (including Alaska Native villages and organizations so long as they are not privately owned), U.S. territories, local governments, and certain private non-profit (PNP) organizations.

PNPs must have "an effective ruling letter from the U.S. Internal Revenue Service, granting tax exemption under sections 501(c), (d), or (e) of the Internal Revenue Code of 1954, or satisfactory evidence from the State that the nonrevenue producing organization or entity is a nonprofit one organized or doing business under State law."<sup>1</sup> Additionally, for a PNP operated facility to be eligible, the PNP must demonstrate the facility provides a critical service or provides a non-critical, but essential government service and is open to the general public. A facility that provides a critical service is defined as one used for an educational, utility, emergency, or medical purpose.<sup>2</sup>

### Project Categories

FEMA processes PA grant funding according to the type of work the applicant undertakes. Eligible work must be required as a result of the declared incident, be located in the designated area, be the legal responsibility of the applicant, and be undertaken at a reasonable cost.

Eligible work is classified into the following categories:

#### Emergency Work

Category A: Debris removal  
Category B: Emergency protective measures

#### Permanent Work

Category C: Roads and bridges  
Category D: Water control facilities  
Category E: Public buildings and contents  
Category F: Public utilities  
Category G: Parks, recreational, and other facilities

Federal funding guidelines for each of these categories are listed in the *Public Assistance Program and Policy Guide*, which is located online at <https://www.fema.gov/media-library/assets/documents/111781>.

### Application Process

After a federal declaration, the recipient (i.e. state, tribe, or territory) conducts Applicant Briefings to inform potential applicants (i.e. state, local, tribal, territorial, and PNP officials) of the assistance available and how to apply. Applicants must then file a Request for Public Assistance within 30 days of the date their respective area is designated by the federal declaration.

Following the approved request, FEMA and the applicants will conduct additional meetings to discuss disaster

**Project Description:** The Town has been working through the FEMA Public Assistance process for damage recovery from Hurricane Florence. This aspect of Public Assistance is associated with covering the costs associated with debris removal, emergency protective measures, restoring roads, equipment and facilities to pre-storm conditions, and administrative costs. It is considered separately from the activities described in #3 and #4 above, although also under the Public Assistance umbrella.

**Project Background:** Stormwater staff have been leading the Town's pursuit of FEMA Public Assistance funding. Staff have submitted claims for losses not covered by insurance and have been working with FEMA/NCDPS staff to document and receive reimbursement, as well as reimbursement for staff time associated with emergency response and follow up. This process has been underway since the winter.

**Status: Active/nearing completion.** The Florence damage recovery Public Assistance described above is nearing completion. The Town is awaiting final review and reconciliation from FEMA and the NCDPS.

**Fiscal and Staffing Considerations:** The Town has received about \$59k in uninsured costs to date and could receive up to \$78k of additional funds, not including the Public Assistance for the stream restoration project (first item in this report). This work has required over 400 hundred hours of Stormwater staff time.

### Additional Information:

[https://www.fema.gov/media-library-data/1534520496845-4b41646e3d8839c768deb3a7f4ded513/PADeliveryModelFactSheetFINAL\\_Updated\\_052418.pdf](https://www.fema.gov/media-library-data/1534520496845-4b41646e3d8839c768deb3a7f4ded513/PADeliveryModelFactSheetFINAL_Updated_052418.pdf)  
[https://www.fema.gov/pdf/government/grant/pa/fema323\\_app\\_handbk.pdf](https://www.fema.gov/pdf/government/grant/pa/fema323_app_handbk.pdf)



## PART 2: WATER QUALITY & FEDERAL/STATE REGULATORY DRIVEN WORK

### 8. NPDES Town Wide Permit

#### What is an MS4 Permit Compliance Audit?

An MS4 Audit is a structured review of the Stormwater Management Program to evaluate whether the MS4 is meeting the requirements specified in the NPDES MS4 Permit & Stormwater Management Plan (SWMP)



AKA do you have your ducks in a row?

Department of Environmental Quality



**Regulatory Requirement:** The Town is regulated under a town wide permit that requires the Town to implement a comprehensive stormwater management program that includes six minimum measures:

- (1) Public education and outreach on stormwater impacts
- (2) Public involvement/participation
- (3) Illicit discharge detection and elimination
- (4) Construction site stormwater runoff control (delegated to Orange County)
- (5) Post-construction stormwater management for new development and redevelopment, and
- (6) Pollution prevention/good housekeeping for municipal operations.

The initial Carrboro permit was issued effective July 1, 2005, renewed in 2011, and again in 2017.

**Background:** In 1990, under the authority of the federal Clean Water Act and starting with large (population >100k) municipalities (and industries), EPA began regulating stormwater runoff. In 2000, the scope was extended to smaller municipalities, and EPA delegated the authority to the State to issue these municipalities (including Carrboro) a stormwater permit.

**Status: Active.** There is a planned EPA/State NPDES Phase II stormwater permit audit in 2020, with new compliance expectations from EPA and the State. Given: the State's communications about the new requirements, and that 16 of the 20 communities that have been audited in 2019 have received Notices of Violation and 3 additional communities have received Notices of Deficiency, staff anticipate that a Notice of Violation or at best a Notice of Deficiency will result from the audit.

**Fiscal and Staffing Considerations:** Preparing for this audit and improving the Town's permit compliance and record keeping activities has been and will continue to be a major undertaking for staff.

**Additional Information:**

<https://deq.nc.gov/about/divisions/energy-mineral-and-land-resources/stormwater/stormwater-program/npdes-ms4-permitting>

## 9. NPDES Public Works Facility NPDES Permit

STATE OF NORTH CAROLINA  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
DIVISION OF ENERGY, MINERAL, AND LAND RESOURCES  
**GENERAL PERMIT NO. NCG080000**

TO DISCHARGE STORMWATER UNDER THE  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

for establishments primarily engaged in the following activities:

### **Vehicle Maintenance Areas**

**Regulatory Requirement:** Under federal and state law, the Public Works facility continues to be regulated through an NPDES stormwater general permit.

**Background:** In 1990, under the authority of the federal Clean Water Act and starting with large (population >100k) municipalities (and industries), EPA began regulating stormwater runoff. In 2000, the scope was extended to smaller municipalities, and EPA delegated the authority to the State to issue these municipalities a stormwater permit. In addition to receiving a town wide permit, Carrboro received a separate permit for the Public Works facility given the operations occurring at the site and potential for stormwater impacts on water quality.

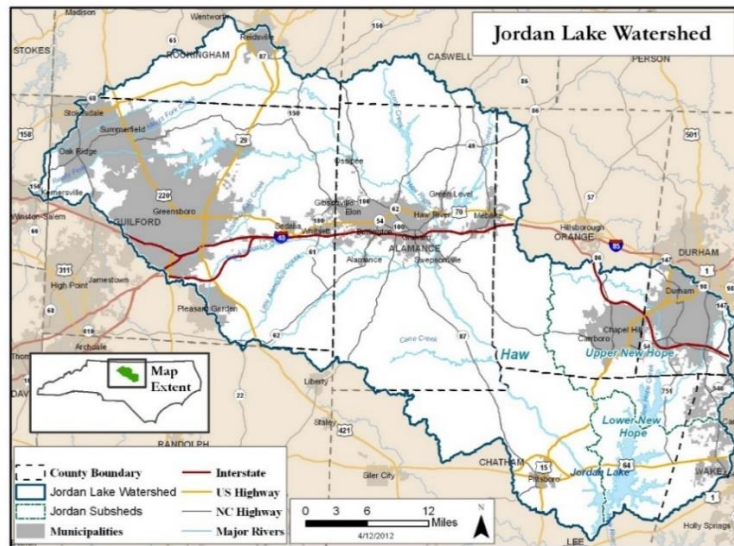
**Status: Active.** This activity has been and remains in a regular/routine operational status, with the facility remaining compliant with federal/state requirements.

**Fiscal and Staffing Considerations:** The Town has been working with a consultant for about \$6k/year to support regulatory compliance. There is also an ongoing and relatively low level of staff activity to maintain compliance.

**Additional Information:**

<https://deg.nc.gov/about/divisions/energy-mineral-land-resources/npdes-stormwater-gps>

## 10. Jordan Lake Rules Compliance



**Regulatory Requirement:** The Jordan Lake Rules are a nutrient management strategy designed to restore water quality in the lake by reducing the amount of pollution entering upstream. Restoration and protection of the lake is essential because it serves as a water supply for several thriving communities, a prime recreation area for more than a million visitors each year, and an important aquatic ecosystem.

**Background:** Jordan Lake was impounded in 1983 by damming the Haw River near its confluence with the Deep River. It was created to provide flood control, water supply, protection of water quality downstream, fish and wildlife conservation, and recreation. The lake has had water quality issues from the beginning, with the North Carolina Environmental Management Commission declaring it as nutrient-sensitive waters (NSW) the same year it was impounded. Since that time, Jordan Lake has consistently rated as eutrophic or hyper-eutrophic, with excessive levels of nutrients present. The most relevant provisions in the rules for Carrboro relate to stormwater management for both new and existing development, riparian buffers, and fertilizer application.

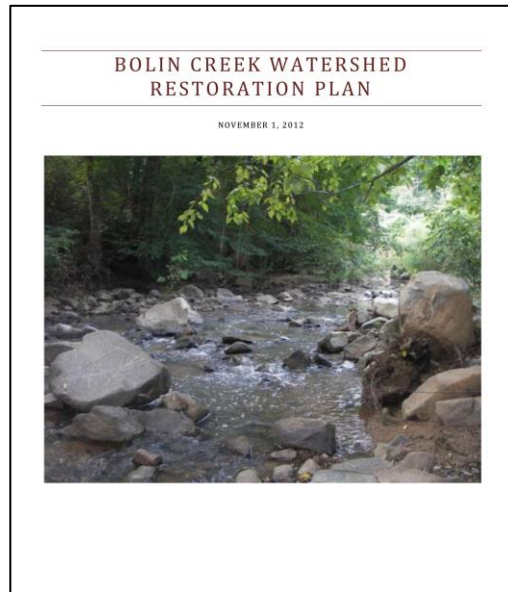
**Status: Awaiting State Review.** There was significant Town activity between about 2005 and 2015 to prepare for and enact ordinance provisions and begin work on implementation activities. Legislative action has delayed further implementation. Jordan Lake Rules regulatory review is anticipated for 2020 now that a UNC Collaboratory study has wrapped up. TJCOG is coordinating stakeholder collaboration.

**Fiscal and Staffing Considerations:** The Town continues to be required to submit annual reports identifying stormwater retrofits, and has programmed several projects in the CIP. It is preliminary at this point to speculate on the potential fiscal/staff/regulatory impacts that will result, beyond an understanding that some staff time will be required to stay informed and report back as the review is pursued.

### Additional Information:

<https://deq.nc.gov/about/divisions/water-resources/water-planning/nonpoint-source-planning/jordan-lake-nutrient>  
<https://www.tjco.org/programs-energy-environment%E2%80%AF-water-resources/jordan-lake-one-water>

## 11. Bolin Creek Watershed Restoration Plan Implementation



**Regulatory Requirement:** The downstream extent of Bolin Creek in Carrboro, and continuing into Chapel Hill, is on the state/federal list of impaired waters. Local actions are needed to improve water quality.

**Background:** Carrboro staff worked with Chapel Hill and other local, state and federal agency staff in 2006 to create the Bolin Creek Watershed Restoration Team (BCWRT) because of the impaired waters listing. At the time, the Bolin Creek watershed was selected as one of only 7 watersheds in the state to receive focused state and federal assistance in preparing grant applications and leveraging other resources to remove Bolin Creek from the impaired waters list. The selection was based on the listing and the existence of restoration planning efforts for the larger Morgan and Little Creek Watersheds, but also, because of the local interest in and capacity for progressive environmental initiatives. The BCWRT's long term goal is to improve the health of Bolin Creek and its tributaries and remove it from the impaired waters list. This is an ambitious goal that will require a robust commitment for many years to come.

**Status: Pending staff capacity/funding.** Watershed restoration plan implementation has been inactive since 2012 due to insufficient capacity/resources. Stormwater staff met with Bolin Forest neighborhood representatives and others regarding collaborating on a potential grant application.

**Fiscal and Staffing Considerations:** There are no near term considerations. Longer term fiscal and staff considerations are uncertain. Competitive 319 grant funds (40% local match) could be pursued.

**Additional Information:**

<https://townofcarrboro.org/280/Bolin-Creek-Watershed-Restoration>

## PART 3: WORK DRIVEN BY BOTH WATER QUANTITY AND QUALITY INTERESTS

### 12. Stormwater Service Delivery Review

#### The Stormwater Finance Landscape:

*Where We've Come from and Where We've Yet to Go*



**Description:** The purpose of this review is to research, consider, and prepare background material related to options for service delivery for the stormwater program going forward.

**Background:** The Town has been incrementally increasing the levels of stormwater services for several decades through Land Use Ordinance changes, preparation and implementation of multiple federal and state regulatory requirements, and in the past decade, in response to increases in intense rainfall events and increased flooding. This culminated in the creation of the Stormwater Utility and establishment of dedicated stormwater funding in 2017-18, setting the stage for the most significant increase in service delivery to date. The purpose of this review is to review current service delivery and look at options for service delivery going forward.

**Status: Complete.** Staff presented the review and options and received feedback on September 10<sup>th</sup>. A public hearing occurred on January 21<sup>st</sup> and amendments to the rate structure were adopted.

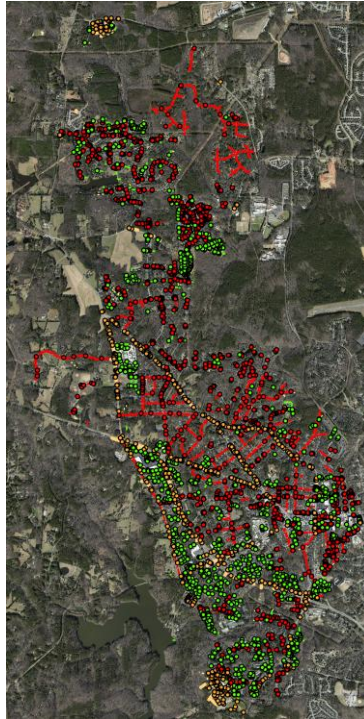
**Fiscal and Staffing Considerations:** Adoption of the rate structure amendments provides additional capacity. Staff will be working through the details of fiscal and staff impacts in the coming months.

**Additional Information:**

[https://efc.sog.unc.edu/sites/default/files/2019/NC%20Stormwater%20Landscape\\_Final%20Draft\\_0.pdf](https://efc.sog.unc.edu/sites/default/files/2019/NC%20Stormwater%20Landscape_Final%20Draft_0.pdf)

<https://www.epa.gov/sites/production/files/2018-01/documents/overcoming-barriers-to-development-and-implementation-of-asset-management-plans.pdf>

### 13. MS4 Inventory Update, Condition Assessment, Asset and Workflow Management



**Description:** This initiative involves using new technology to update the MS4 inventory, assess MS4 conditions, and create asset management and workflow systems and tools. Asset management is a strategic approach to maintaining and sustaining infrastructure in order to deliver services at the lowest overall life cycle cost. This method is intended for managing any assets, has traditionally been used for drinking water and wastewater, and is increasingly being used by stormwater utilities.

**Background:** A GIS based system inventory was first completed about 15 years ago in preparation for the Town's NPDES permit. While maintenance of the inventory is ongoing, some additional work is needed to fully complete the inventory so it can serve as the foundation for comprehensive stormwater workflow, regulatory tracking and asset management needs. The Town is in the process of implementing a new workflow management system (CityWorks) and GIS based field inventory capabilities. A system condition assessment has not been completed, nor has an asset management system been created. It is recommended that sufficient resources be allocated to allow this work to move forward.

**Status: Active.** Investments are being made in new information technology and staff are in the early phase of systems development, configuration, and staff training. Stormwater staff participated in Public Works review and configuration of City Works in September and October, and will be participating in training in the coming months.

**Fiscal and Staffing Considerations:** There is no direct fiscal impact currently. The need for additional resources (additional staffing and/or engineering or contractual services) will depend on the technical requirements and overall staff workload and the desired pace of moving this work forward.

**Additional Information:** <https://louisville.edu/cepm/projects/sustainable-community-capacity-building/asset-management-for-stormwater>

<https://www.epa.gov/sites/production/files/2018-01/documents/overcoming-barriers-to-development-and-implementation-of-asset-management-plans.pdf>

## 14. Stormwater Project Planning and Prioritization

	Criteria	Type	Possible	Points							
				10	9	8	7	6	5	4	
	Public safety/welfare	Public interest	Mandatory	High infrastructure impacts			Medium infrastructure impacts				Low infrastructure impacts
Community Benefits	Conveyance repair/replacement	Infrastructure	10	Public infrastructure or insurable structures affected			Private property impacted				
	Public visibility/educational value	Public interest	10	High			Medium				
	Detention	Flood mitigation	10	Public infrastructure, insurable structures protected			private insurable structures protected				no insurable structures protected
	Water supply protection	Public interest	10				Yes				
	Green infrastructure	Multiple	10	Green street/parking lot			> 1 acre & reduction in curve # by >15				Other green infrastructure
Environmental Benefits	Stream/riparian repair/restoration	Stream/geomorphic	10	Perennial stream			Intermittent stream				
	Runoff (volume) reduction	Multiple	10	>cfs			> < cfs				>< cfs
	Impaired waters	Water quality/stream	8			Lower Bolin Creek		Upper Bolin Creek			
	Nutrient reduction	Water quality	7				> N reduction				< < N reduction
Feasibility	Landowner	Feasibility	10	Town owned		Other local agency		State/federal			Private-landowner easement/agreement
	In CIP?	Feasibility	5							Yes	

**Description:** The purpose of this work is to create a process for planning for and prioritizing large stormwater improvement/capital projects, to inventory all potential projects with a 10-20 year planning horizon, and to develop a prioritized 5 year project list/CIP update during FY 20.

**Background:** Carrboro has been identifying stormwater capital projects in the Capital Improvements Program (CIP) since 2012. These projects have historically been significantly but not solely motivated by the implementation of State’s rules to restore Jordan Lake. Other studies have been completed and potential projects identified by the Town Engineer and also through, for example, the State’s Ecosystem Enhancement program, Bolin Creek watershed restoration efforts, and efforts to identify infrastructure replacement/ improvement and stream repair/restoration projects. Identifying and implementing capital projects is an ongoing Town process, with updates to the CIP typically prepared annually.

**Status: Active.** Town staff have been working on planning level cost projections as part of the Service Delivery Review (#12). Jordan Lake Rules (#10), Bolin Creek Watershed Restoration (#11), and Condition Assessment/Asset Management (#13) are also relevant. Stormwater input has been provided as part of the annual CIP update.

**Fiscal and Staffing Considerations:** There is no fiscal impact associated with identifying, planning for, and prioritizing projects. There will be a staff impact to pursue this work through FY 19/20, and a lower level impact in subsequent years.

**Additional Information:**

<http://www.townofcarrboro.org/AgendaCenter/ViewFile/Agenda/12052018-3552>

## 15. Drainage Policy Review and Residential Assistance Program

### TOWN DRAINAGE POLICY

The following constitutes a statement of the official policy of the Town of Carrboro, as adopted by the Board of Aldermen on June 12, 1984, relating to the improvement and maintenance of drainage ways within the town. This supersedes all previously adopted policies.

#### **I. Drainage on Public Rights-Of-Way and Easements**

The Town will continue to maintain at its own expense all drainage ditches, piped and un piped, and other drainage ways located within public street rights-of-way or drainage easements conveyed to and accepted by the Town.

#### **II. Drainage Problems On Private Property For Which the Town Is Legally Responsible**

The Town will correct at its own expense a drainage problem created on private property where it is demonstrated to the reasonable satisfaction of the Public Works Director that: (i) surface water is being channeled from the public street right-of-way onto private property in a location where water would not naturally have flowed in the pre-development stage; or (ii) the drainage problem is created by water being channeled from the public street right-of-way onto private property, into a natural drainage way that is inadequate to handle the volume of water so channeled, and a substantial portion of the water consists of runoff from land not drained by the natural drainage way in the predevelopment stage; or (iii) the Town is otherwise legally responsible and liable for creating the drainage problem.

#### **III. Town Participation In Drainage Improvements On Private Property Where The Town Is Not Legally Responsible For The Drainage Problem.**

A. The Board of Aldermen has determined that drainage problems exist throughout the Town and that it is in the public interest and serves a public purpose for the Town to establish a public drainage system and to participate in the costs of making improvements to the public drainage system in accordance with the policies and procedures set forth in this section.

B. The Board of Aldermen hereby adopts that map entitled Stormwater Drainage Map and dated May 1, 1984 as the official public drainage system map for the town. The map indicates the network of natural drainage ways located on private property within the Town that the Town will improve and maintain, subject to the remaining provisions of this

**Description:** Stormwater staff have initiated a review of the Town's 1984 Drainage Policy and development of recommendations for an assistance program for residential property owners.

**Background:** Since the Stormwater Utility was formed, stormwater technical assistance provided by staff has increased. The residential assistance that staff have provide to date has not involved any financial assistance. An updated policy and program would help clarify the details of both technical and financial assistance (if any) that the Town may wish to provide for private residential property owners.

**Status:** *See Pilot Study (#3)*. The work by the Center for Neighborhood Technology (CNT) described in #3 will inform the development of an updated policy and program. Staff anticipate working on the drainage policy review and program recommendations after the CNT pilot project through internal staff review initially, followed by Stormwater Advisory Commission and Town Council review.

**Fiscal and Staffing Considerations:** Any fiscal impact resulting from financial assistance to be provided as part of a new program will be determined through administrative and policy level review. There has been and will continue to be a staff impact associated with technical assistance. This impact will increase if staff will be administering a new program.

#### **Additional Information:**

<http://www.townofcarrboro.org/AgendaCenter/ViewFile/Agenda/03142019-3607>