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February 7, 2018

Memo to: City of New Bern Governing Board

Copy: Mark Stephens, City Manager *[Signature]* 2/7/18
Krissy Culler, Assistant City Manager *[Signature]*

From: Matt Montanye, Director of Public Works *[Signature]* 2/7/18

Re: **FY-18 Stormwater Projects Overview**

As an addendum to the monthly project report, below is a detailed outline of the approved Stormwater Projects for FY-18. As part of the approved budget for FY-18, the Board of Aldermen approved \$1,500,000 for Stormwater Infrastructure Improvements, which would be funded through an installment loan and repaid by the general fund. During the budget process, several projects were identified as high priority improvements that would be made using the approved funds. The list below outlines these projects and the estimates that were provided during the budget process.

• New Street, Bern Street & Cedar Street Drainage Improvements	\$ 750,000
• Neuse Blvd. Drainage Improvements	\$ 75,000
• Elizabeth Avenue Culvert Crossing	\$ 35,000
• Cardinal Drive / McCarthy Blvd Drainage Improvements	\$ 250,000
• Craven Street / Johnson Street Infrastructure Improvements	\$ 100,000
• S. Front Street/Hancock Street Infrastructure Improvements	\$ 60,000
• Middle Street (200-300 Block) Infrastructure Improvements	\$ 125,000
• Spencer Avenue (1800 Block) Infrastructure Improvements	\$ 25,000
• King Street Infrastructure Improvements	<u>\$ 100,000</u>
TOTAL	\$1,520,000

• **New Street, Bern Street & Cedar Street Drainage Improvements**

This project was identified due to the significant flooding that takes place during heavy rain events. Over the years, staff has continued to see flooding in the two low areas at the intersection of Queen Street & New Street as well as the intersection of Cedar Street and Bloomfield Street, due to aging pipe, under sized pipes and pipes filled with tree roots. Due to the scale of this project, we are working with Draper Aden and Associates out of Raleigh, N.C. to do a complete drainage study of the drainage areas and to put together a report with recommendations, cost estimates and the effects that would be seen if improvements were made to the infrastructure in this area. To date, staff has received a draft copy of the drainage

report and are expecting the final report within this weeks. Once the final report is received, staff will review the recommendations and the effects of the improvements and determine the best course of action for proceeding with plans and construction. The cost associated with surveying and engineering is \$35,000 with a total project cost estimated at \$750,000.



Flooding along New Street



Roots from clogged pipe along Cedar Street

- **Neuse Blvd. Drainage (Under Sized Pipes)**

This project was identified as improvements to Neuse Blvd. because Neuse Blvd., as well as the Colony Estates and Derby Park area, were where the effects of the undersized pipes that crossed under the Public Works facility were impacted. Though this project has been on the radar since Hurricane Irene in 2011, it was during a storm on June 24, 2017 that these pipes completely failed causing both pipes to be undermined and the existing road being washed away. Immediately following the beginning of FY 18 budget year the once existing dual 36" pipes were replaced with a single arched pipe greater than the equivalent of dual 72" pipes. The Public Works staff did all of the construction administration and the pipe was installed by Thomas Simpson Construction. The total cost of the project was \$116,141.



After June 2017 Storm



After June 2017 Storm



During Construction



After Construction

- **Elizabeth Avenue Culvert Crossing**

This project was identified to improve the flow of stormwater runoff that crosses under Elizabeth Avenue from the area in and around the Weatherstone community. The Weatherstone area, as well as the adjoining streets of Belmont and Preakness, are subject to severe flooding during large rain events. The construction administration for this project will be performed by the City of New Bern Public Works Department and the contractor for this project will be Trader Construction. This project should begin in the early spring of 2018.



Weatherstone Apartments



Weatherstone Apartments

- **Cardinal Drive / McCarthy Blvd. Drainage Improvements (Wanda Kay's School of Dance)**

This project is intended to redirect and improve the drainage from the McCarthy Blvd. and Cardinal Drive area that eventually crosses under Glenburnie Road and through the Greenbrier neighborhood. Over the past several years during significant rain events properties along Cardinal Drive have flooded on multiple occasions. This project will look to reroute the drainage around the properties on Cardinal Drive as well as improve the downstream drainage. For this project, staff is working with Avolis Engineering to perform a drainage study of the surrounding area as well as draft a plan for these improvements. The costs associated with surveying and engineering is \$25,890 and the total project cost is estimated at \$250,000 with some improvements beginning in the next 60 days.



McCarthy Blvd. Outlet



McCarthy Blvd.

- **Craven Street / Johnson Street - Infrastructure Improvements**

This project consist of improving the aging infrastructure along Johnson Street between Craven Street and Middle Street. The stormdrain pipes in this area are old terra cotta and brick pipes that are failing, undersized and filled with tree roots. For this project, we are working in conjunction with the City of New Bern Water Resources Department to upgrade all of the utilities at one time. Construction plans and construction administration is being done by the

City of New Bern. The estimated cost associated with the stormwater improvements is \$100,000 and the project is anticipated to begin prior to the end of the fiscal year.



Clogged Pipe on Johnson Street



Roots from Clogged Pipe

- **South Front Street / Hancock Street - Infrastructure Improvements**

Over the past two years, the Stormwater Division has had to make several repairs to the old brick and corrugated metal stormdrain pipe that crosses under South Front Street from Hancock Street towards the Trent River. This project will remove and replace this existing pipe from the existing catch basin on Hancock Street to the existing stormdrain manhole across South Front Street. For this project, we are working with Robert Chiles Engineering for surveying and construction plans with the construction administration being done by the City of New Bern. This project is estimated to cost \$60,000 with improvements beginning in the next 60-90 days.



Existing Pipe



Existing Patch over Multiple Repairs

- **Middle Street (200-300 Blocks) - Infrastructure Improvements**

This project consist of improving the aging infrastructure along the 200-300 blocks of Middle Street. The stormdrain pipes in this area are 8"-12" terra-cotta pipe that are failing, undersized and filled with tree roots. In 2013 infrastructure improvements were made to the 400 block of Middle Street with the plan that the 200-300 blocks would be done in the future. Over the past 24 months, the City of New Bern Stormwater Maintenance Division has had to make four separate repairs along the 200 block due to the failing infrastructure. For this project, we are working with Robert Chiles Engineering for surveying and construction plans for both the Middle Street Project as well as the Hancock Street Project. Construction administration is being done

by the City of New Bern Public Works Department. The costs associated with surveying and engineering for this project is \$4,335 and the total project cost is estimated at \$125,000 with improvements beginning in the next 60-90 days.



Ponding Water along Middle Street



Collapsed Pipe on Middle Street

- **Spencer Avenue - Infrastructure Improvements**

This project consist of improving the aging infrastructure along the 1800 blocks of Spencer Avenue. The stormdrain pipes in this area are failing and filled with tree roots. For this project, we are working in conjunction with the City of New Bern Water Resources Department to upgrade all of the utilities at one time. City staff are doing Engineering and project management for this project. The contractor for this project will be James L. Cayton Utilities and construction is scheduled to begin in the next 30-45 days. In addition, we will be adding some additional improvements at the intersection of Spencer Avenue and Second Street. The estimated cost of the stormwater improvements for this project is \$50,000 and the project is anticipated to begin prior to the end of the fiscal year.

- **King Street - Infrastructure Improvements**

This project consist of improving the aging infrastructure along King Street from the intersection of East Front Street to the Neuse River. The stormdrain pipes in this area are old terra-cotta and brick pipe that are failing, undersized filled with tree roots. For this project, we are working in conjunction with the City of New Bern Water Resources Department to upgrade all of the utilities at one time. Construction plans and construction administration is being done in-house. The estimated cost of the stormwater improvements for this project is \$100,000 and the project is anticipated to begin prior to the end of the fiscal year.

In addition to these improvements, the Stormwater Division has completed two emergency repair projects. These projects were managed by the City of New Bern's Stormwater Maintenance Superintendent and funded through the FY-18 Stormwater Maintenance operating budget.

- **Derby Park (Belmont Blvd. / Preakness Street)**

For several years, Belmont Blvd and Preakness Place have had severe flooding up to 2-feet high in the street. This has caused flooding to cars and property. In July 2017 while performing maintenance in this area, staff discovered a 36" pipe that crossed between two properties that was collapsed and completely blocked. This blockage caused water to back up on Belmont and Preakness causing significant flooding. Staff investigated the issues and worked with Trader Construction to replace approximately 200-feet of 36" pipe as well as a drop inlet off Belmont

Blvd. A few weeks later, following a Sunday afternoon rain event that would have easily caused flooding in the past, staff went door-to-door talking with residents on Belmont Blvd. and were informed that no ponding of water occurred on the street during that Sunday afternoon rain event. This project was completed at a cost of \$25,500.



Clogged Pipe in Derby Park



Flooding in Derby Park

- **Glenburnie Road (Windy Trail Community)**

Recently staff received calls from several residents in the Windy Trail neighborhood about flooding and the fact that water was not draining from their neighborhood. Upon investigating the issue, the Stormwater Superintendent determined that the existing 36" plastic pipe that drained this area by conveying water towards Glenburnie Road had collapsed causing a complete blockage. Due to the depth of the existing pipe and the size of the existing trees that had to be removed staff worked with Trader Construction to complete this project at a cost of \$25,000.



New Pipe and Clearing Operation



New Pipe Installed