

# EXHIBIT 1

CWSNC'S Articles of Incorporation are on file with the  
NCUC.

## EXHIBIT 2

Not Applicable - Applicants are not doing business as a partnership

## EXHIBIT 3

Not Applicable - Applicant is not doing business under a trade name or a d/b/a.

# EXHIBIT 4

Water System Plan Approval Attached.



State of North Carolina  
Department of Environmental Quality  
Division of Water Resources  
Public Water Supply Section  
1634 Mail Service Center, Raleigh, NC  
Telephone (919) 707-9100

CARTERET COUNTY UTILITIES  
302 COURTHOUSE SQ  
ATTN: EUGENE FOXWORTH  
BEAUFORT, NC 28516

SYSTEM NAME: MERRIMON WATER SYSTEM  
RESPONSIBLE PERSON: CAHOON, TONY  
5231 BUSINESS DRIVE  
ATTN: CARTERET CO UTILITIES  
NEWPORT, NC 28570

PWS ID: NC0416198 Carteret County  
OWNER ID: 78019

**2022 PERMIT TO OPERATE A COMMUNITY PUBLIC WATER SYSTEM**

POPULATION SERVED: 71

The above named Community or Non-Transient Non-Community Public Water Supply System is granted a permit to operate this facility for the calendar year 2022. The permit expires at midnight on December 31, 2022.

The permit signifies that the annual fee has been paid in full and that a completed annual operating permit application has been submitted.

All permitted community and non transient non-community water systems shall comply with 15A NCAC 18C, which are the Rules Governing Public Water Systems. Rule .02102(f) requires that the supplier of water who holds a current operating permit shall inform the Department of any changes of address or transfer of ownership within 30 days of the changes.

Payment of the 2023 operating permit fee is due by November 2022. Administrative Penalties will be assessed for payments not received by December 31, 2022. Renewal notices will be sent in September 2022.

Sincerely,

A handwritten signature in black ink that reads "R.W. Midgette".

R.W. (Bob) Midgette, P.E.  
Section Chief

cc: HEIDI COX, Regional Engineer



State of North Carolina  
Department of Environmental Quality  
Division of Water Resources  
Public Water Supply Section  
1634 Mail Service Center, Raleigh, NC  
Telephone (919) 707-9100

CARTERET COUNTY UTILITIES  
302 COURTHOUSE SQ  
ATTN: EUGENE FOXWORTH  
BEAUFORT, NC 28516

SYSTEM NAME: NORTH RIVER/MILL CREEK WATER SERVICE I

RESPONSIBLE PERSON: CAHOON, TONY  
5231 BUSINESS DRIVE  
ATTN: CARTERET CO UTILITIES  
NEWPORT, NC 28570

PWS ID: NC0416197 Carteret County  
OWNER ID: 78019

**2022 PERMIT TO OPERATE A COMMUNITY PUBLIC WATER SYSTEM**

POPULATION SERVED: **2,950**

The above named Community or Non-Transient Non-Community Public Water Supply System is granted a permit to operate this facility for the calendar year 2022. The permit expires at midnight on December 31, 2022.

The permit signifies that the annual fee has been paid in full and that a completed annual operating permit application has been submitted.

All permitted community and non transient non-community water systems shall comply with 15A NCAC 18C, which are the Rules Governing Public Water Systems. Rule .02102(f) requires that the supplier of water who holds a current operating permit shall inform the Department of any changes of address or transfer of ownership within 30 days of the changes.

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Sincerely,

A handwritten signature in black ink that reads "R.W. Midgette".

R.W. (Bob) Midgette, P.E.  
Section Chief

cc: HEIDI COX, Regional Engineer

OFFICIAL COPY

Aug 02 2022

# EXHIBIT 5

Sewer System plan approvals attached.



PAT MCCRORY

*Governor*

MICHAEL S. REGAN

*Secretary*

S. JAY ZIMMERMAN

October 4, 2017

Tommy R. Burns, County Manager  
c/o John W. Simons Jr, Water Plant Supervisor, ORC  
302 Courthouse Square  
Beaufort, North Carolina 28516

Subject: **Issuance of NPDES Permit NC0086975**  
Laurel Road WTP, Class 1  
534 Laurel Road, Beaufort  
Carteret County

Dear Mr. Burns:

The Division of Water Resources (the Division or DWR) hereby issues the attached NPDES permit for the subject facility. We issue this permit pursuant to the requirements of North Carolina General Statute 143-215.1 and the Memorandum of Agreement between North Carolina and the U.S. Environmental Protection Agency dated October 15, 2007, or as subsequently amended.

Changes to Your Previous Permit. The Division notes from your renewal application that you have made no significant changes to your wastewater treatment processes since last renewal. We also acknowledge your written comments on the permit draft received August 17, 2017 from Tyndall Lewis of McDavid-Inc. Accordingly, we have updated your permit conditions, format and site map, consistent with current permitting strategies and WTP guidance, incorporating the following:

1. Per your written request [of 17Aug2017], DWR hereby reinstated TSS limits Monthly Average and Daily Maximum [from 10/15 to 15/30 mg/L], noting that the pervious permit should not have applied stricter TSS limits at renewal [a permitting error] because this facility's flow was not at the time "new or expanding," as defined under NCAC 02B .0224 (1) (b) (ii);
2. Discontinued monitoring for Total Manganese [required only of WS class waters];
3. Added permit limits for Total Copper, Total Lead and Total Zinc, in accord with databases showing *reasonable potential*; increased monitoring from Quarterly and 2/Month to **Monthly**; please note that North Carolina groundwater conditions often exceed surface water-quality standards; i.e., if you use it, you assume responsibility for its treatment and discharge;
4. Added a Compliance Period for metals [Pb, Cu, and Zn] to allow the Permittee time to research and establish methods for treatment; permit limits become active five (5) years from the permit effective date [see new footnote #5, A. (1.), and Special Condition A. (3.)];
5. Updated Supplement to Permit Cover Sheet narrative (see page 2);
6. Updated Acute Toxicity narrative and footnote amended for current versions [see A. (1.) and A. (2.)];
7. Added eDMR requirements narrative [A. (3.)];
8. Changes to the Permit Draft – Updated Fact Sheet text detailing *dissolved metals* calculations and requirements;
9. Changes to the Permit Draft – no longer require *concurrent sampling* of metals with WET-test sampling; removed previous footnote #5 [see draft A. (1.)];



Records show that you have successfully registering with the *Electronic* Discharge Monitoring Report (eDMR) Program. Please be reminded that until the state's eDMR application is approved by the Department as compliant with EPA's *Cross-Media Electronic Reporting Regulation* (CROMERR), all permittees must continue to submit hardcopy of DMR as backup to eDMR reporting [see permit section A. (5.)].

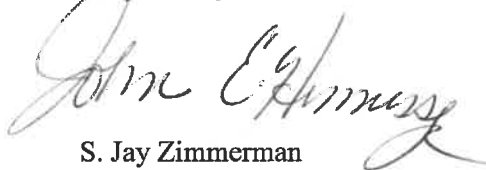
Please be reminded that this facility discharges to waters classified SA; HQW [habitat-critical area; High Quality Water].

If any parts, measurement frequencies, or sampling requirements contained in this permit are unacceptable, you have the right to an adjudicatory hearing, upon written request, submitted within thirty (30) days after receiving this letter. Your request must take the form of a written petition conforming to Chapter 150B of the North Carolina General Statutes, and you must file it with the office of Administrative Hearings, 6714 Mail Service Center, Raleigh, North Carolina 27699-6714. Unless such a demand is made, this permit shall be final and binding.

This permit is not transferable except after notifying the Division of Water Resources. The Division may modify, revoke or re-issue this permit. Please note that this permit does not affect your legal obligation to obtain other permits required by the Division of Water Resources, the Division of Land Resources, the Coastal Area Management Act, or any other federal or local government.

If you have questions, or if we can further assist you, please contact Joe R. Corporon, L.G. at [[joe.corporon@ncdenr.gov](mailto:joe.corporon@ncdenr.gov)] or call his direct line (919) 807-6394.

Respectfully,



S. Jay Zimmerman

Enclosure: NPDES Permit NC0086975 (issuance final)

hc: Central Files  
WiRO/SWPS Supervisor, Jim Gregson  
NPDES Program Files

ec: WiRO, Jim Gregson  
ATB, Susan Meadows, Cindy Moore (Draft and Fact Sheet)  
OCU, Maureen Kinney (Draft and Fact Sheet)

STATE OF NORTH CAROLINA  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
DIVISION OF WATER RESOURCES

# PERMIT

TO DISCHARGE WASTEWATER UNDER THE  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM  
(NPDES)

In compliance with the provision of North Carolina General Statute 143-215.1, other lawful standards and regulations promulgated and adopted by the North Carolina Environmental Management Commission, and the Federal Water Pollution Control Act, as amended, the

## County of Carteret

is hereby authorized to discharge wastewater from a facility located at the

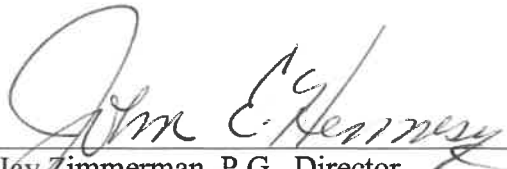
Laurel Road WTP  
534 Laurel Road, Beaufort  
Carteret County

to receiving waters designated as Feltons Creek within the White Oak River Basin in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Parts I, II, III, and IV hereof.

This permit shall become effective on **November 1, 2017**.

This permit and authorization to discharge shall expire at midnight on **July 31, 2022**.

Signed this day **October 4, 2017**

  
\_\_\_\_\_  
S. Jay Zimmerman, P.G., Director  
Division of Water Resources  
By Authority of the Environmental Management Commission

## SUPPLEMENT TO PERMIT COVER SHEET

All previous NPDES Permits issued to this facility, whether for operation or discharge are hereby revoked. As of this permit issuance, any previously issued permit bearing this number is no longer effective. Therefore, the exclusive authority to operate and discharge from this facility arises under the permit conditions, requirements, terms, and provisions included herein.

### County of Carteret

is hereby authorized to:

1. continue to operate a wastewater treatment system in support of potable-water production, discharging *Ion-Exchange* (IE) backwash/rinsate wastewater, with potential to discharge *Greensand Filter* backwash, a system currently designed to produce 0.300 MGD potable water, and a wastewater discharge reported as 0.0072 MGD (max. monthly average), utilizing treatment components including;
  - two (2) each 10 ft-diameter greensand filters with potassium permanganate [KMnO<sub>4</sub>] feed system
  - two (2) each 8 ft-diameter water softeners (with brine regeneration system)
  - chemical-feed systems for zinc ortho-polyphosphate [Zn PO<sub>4</sub>] inhibitor and chloramines disinfection (aqueous ammonia, chlorine)
  - two (2) each 20 ft x 20 ft settling basins with decant pumps, recycle pumps (for *greensand* filter backwash)
  - settling basin (9,000-gallon for softener-backwash wastewater)
  - collection basin with effluent transfer pumps
  - liquid chemical feed system for dechlorination
  - backwash pumps and controls for sandfilter and softener operation
  - sample port and appurtenant piping to outfall

these facilities located at the Laurel Road WTP, 534 Laurel Road, Beaufort, Carteret County, and

2. discharge from said treatment works via Outfall 001, a location specified on the attached map, into Feltons Creek [stream segment 21-35-1-1], a waterbody currently classified SA HQW; PNA within subbasin 03-05-04 [HUC: 03020301] of the White Oak River Basin.

**A. (1.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**  
[15A NCAC 02B.0400 et seq., 02B.0500 et seq.]

During the period beginning on the effective date of this permit and lasting until expiration, the Permittee is authorized to discharge *Ion-Exchange* filter backwash/rinse wastewater from Outfall 001. Such discharges shall be limited, monitored and reported <sup>1</sup> by the Permittee, as specified below:

EFFLUENT CHARACTERISTICS (Parameter Code)		LIMITS		MONITORING REQUIREMENTS		
		Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location <sup>2</sup>
Flow, MGD <sup>3</sup>	50050			Weekly	Estimate <sup>3</sup>	E
Total Suspended Solids	00530	10.0 mg/L	15.0 mg/L	2/Month	Grab	E
pH	00400	Not > 6.8 or < 8.5 s. u.		2/Month	Grab	E
pH	00400			2/Month	Grab	S1
Total Residual Chlorine <sup>4</sup>	50060		13 µg/L <sup>4</sup>	2/Month	Grab	E
Total Lead	01051	4.25 µg/L <sup>5</sup>	110 µg/L <sup>5</sup>	Monthly	Grab	E
Total Copper, µg/L	01042	1.85 µg/L <sup>5</sup>	2.9 µg/L <sup>5</sup>	Monthly	Grab	E
Total Zinc, µg/L	01092	42.8 µg/L <sup>5</sup>	47.2 µg/L <sup>5</sup>	Monthly	Grab	E
Dissolved Oxygen, mg/L	00300			Monthly	Grab	E
Dissolved Oxygen, mg/L	00300			Monthly	Grab	S1
Salinity, ppt	00480			Monthly	Grab	E
Salinity, ppt	00480			Monthly	Grab	S1
Conductivity, µmohs/cm	00094			Monthly	Grab	E
Total Dissolved Solids, mg/L	70295			Monthly	Grab	E
Ammonia [NH <sub>3</sub> as N] mg/L	00610			Monthly	Grab	E
Turbidity, NTU	00070			Monthly	Grab	E
WET Acute Toxicity <sup>6</sup>	TGE3E	Monitor & Report		Quarterly	Grab	E

**Footnotes:**

1. The permittee shall submit discharge monitoring reports (DMRs) *electronically* using the Division's eDMR system [see A. (3.)].
2. E = Effluent; Instream S1 = center of Feltons Creek, east side of bridge; Outfall 001 at west side of bridge.
3. Discharge Estimate shall be based on both flow rate and duration, both to be recorded in log book.
4. The Division shall consider compliant all effluent TRC values reported below 50 µg/L. However, the Permittee shall continue to record and submit all values reported by North Carolina-certified test methods (including field certified), even if these values fall below 50 µg/L.
5. Compliance to this limit begins on **November 1, 2022**, five (5) years from the permit effective date [see Special Condition A. (3.)].
6. Whole Effluent Toxicity (WET) testing; Acute 24-hour Pass/Fail Monitoring: (*January, April, July, and October*). Permittee shall use mysid shrimp or other approved test organism [See special condition A. (2)].

**Conditions:** All samples shall accurately represent the physical and chemical character of the discharge event. The Permittee shall discharge no floating solids or foam visible in other than trace amounts.

A. (2.) ACUTE TOXICITY PASS/FAIL MONITORING (QUARTERLY)  
[15A NCAC 02B.0500 et seq.]

The permittee shall conduct acute toxicity tests on a *quarterly* basis using protocols defined in the North Carolina Procedure Document entitled "*Pass/Fail Methodology for Determining Acute Toxicity in A Single Effluent Concentration*" (Revised December 2010 or subsequent versions). The monitoring shall be performed as a Mysid Shrimp (*Mysidopsis bahia*) 24-hour static test. The effluent concentration at which there may be at no time significant mortality is 90% (defined as treatment two in the procedure document). Effluent samples for self-monitoring purposes must be obtained during representative effluent discharge below all waste treatment. The tests will be performed during the months of *January, April, July and October*. These months signify the first month of each three-month toxicity testing quarter assigned to the facility.

All toxicity testing results required as part of this permit condition will be entered on the Effluent Discharge Monitoring Form (MR-1) for the month in which it was performed, using the parameter code TGE3E. Additionally, DWQ Form AT-2 (original) is to be sent to the following address:

Attention: North Carolina Division of Water Resources  
Water Sciences Section  
1621 Mail Service Center  
Raleigh, N.C. 27699-1621

Completed Aquatic Toxicity Test Forms shall be filed with the Environmental Sciences Section no later than 30 days after the end of the reporting period for which the report is made.

Test data shall be complete and accurate and include all supporting chemical/physical measurements performed in association with the toxicity tests, as well as all dose/response data. Total residual chlorine of the effluent toxicity sample must be measured and reported if chlorine is employed for disinfection of the waste stream.

Should there be no discharge of flow from the facility during a month in which toxicity monitoring is required, the permittee will complete the information located at the top of the aquatic toxicity (AT) test form indicating the facility name, permit number, pipe number, county, and the month/year of the report with the notation of "No Flow" in the comment area of the form. The report shall be submitted to the Environmental Sciences Section at the address cited above.

Should the permittee fail to monitor during a month in which toxicity monitoring is required, then monthly monitoring will begin immediately. Upon submission of a valid test, this monthly test requirement will revert to quarterly in the months specified above. Assessment of toxicity compliance is based on the toxicity testing quarter, which is the three-month time interval that begins on the first day of the month in which toxicity testing is required by this permit and continues until the final day of the third month.

Should any test data from this monitoring requirement or tests performed by the North Carolina Division of Water Quality indicate potential impacts to the receiving stream, this permit may be re-opened and modified to include alternate monitoring requirements or limits.

If the Permittee monitors any pollutant more frequently than required by this permit, the results of such monitoring shall be included in the calculation and reported data submitted on the DMR and AT Form.

NOTE: Failure to achieve test conditions as specified in the cited document, such as minimum control organism survival and appropriate environmental controls, shall constitute an invalid test and will require immediate follow-up testing to be completed no later than the last day of the month following the month of the initial monitoring.

## USE OF A DIFFERENT TEST ORGANISM

The permittee with **acute WET-test requirements**, discharging to either fresh water or salt water, may request the use of a different test organism upon documentation that the alternate test organism would provide an equal or greater level of protection. This test must be appropriately based on the characteristics of the discharge and receiving stream. Such documentation must consist of one of the following:

1. For saltwater classified streams, a fathead minnow may be assigned as the acute testing species if the salinity of the receiving stream at the point of discharge is <5 ppt throughout the tidally influenced cycle. This determination may be based on the best professional judgment of DWQ staff or data collection provided by the permittee and approved by DWQ staff. This evaluation should include vertical profiles of salinity/conductivity measurements at both high tide and low tide over several 24-hr cycles.
2. Three consecutive “side-by-side” tests with results indicating that the alternate test organism is as or more sensitive to the facility’s effluent. Each test series would consist of two separate toxicity tests conducted on the same sample of effluent with the length of exposure specified by the permit, the only difference between the tests being the organism used.
3. An alternate plan developed by the permittee and approved by the Aquatic Toxicology Unit that demonstrates an equal level of protection is offered by the test organism.

For items 2 and 3, it must also be demonstrated that viable and standardized culture techniques are available for that organism and standardized testing methodologies have been developed and validated. This demonstration should meet guidance provided by EPA in Section 6 of EPA-821-R-02-012, “*Short Term Methods for Estimating the Acute Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fifth Edition 2002*”.

Requests to use a different test organism and supporting documentation should be sent to North Carolina Division of Water Resources, Water Sciences Section (at the above-listed address).

### A. (3.) SPECIAL CONDITION – COMPLIANCE FOR METALS LIMITS [NCGS 143-215.1 (b)]

Compliance to permit limits for dissolved metals shall begin five (5) years from the permit effective date on **November 1, 2022**. This compliance period affords the Permittee time to research, establish and implement methods adequate to treat effluent metals. The Permittee shall submit **annually** a written progress report to the Division, due on the anniversary of the permit effective date [copy both the Division’s Central Office and the Wilmington Regional Office]. Failure to comply with this Special Condition subjects the facility to civil penalty assessment.

Submit Annual Progress Reports - copies to both:

DWR/SWPS/NPDES Expedited Permitting  
Attention: John Hennessy  
1617 Mail Service Center,  
Raleigh, North Carolina 27699

DWR/SWPS/NPDES  
Wilmington Regional Office (WiRO)  
Attention: Dean Hunkele  
127 Cardinal Drive Extension  
Wilmington, North Carolina 27889

## A. (4.) ELECTRONIC REPORTING OF DISCHARGE MONITORING REPORTS [NCGS 143-215.1 (b)]

Federal regulations require electronic submittal of all discharge monitoring reports (DMRs) and program reports. The final NPDES Electronic Reporting Rule was adopted and became effective on December 21, 2015.

NOTE: This special condition supplements or supersedes the following sections within Part II of this permit (*Standard Conditions for NPDES Permits*):

- Section B. (11.) Signatory Requirements
- Section D. (2.) Reporting
- Section D. (6.) Records Retention
- Section E. (5.) Monitoring Reports

### 1. Reporting Requirements [Supersedes Section D. (2.) and Section E. (5.) (a)]

The permittee shall report discharge monitoring data electronically using the NC DWR's Electronic Discharge Monitoring Report (eDMR) internet application.

Monitoring results obtained during the previous month(s) shall be summarized for each month and submitted electronically using eDMR. The eDMR system allows permitted facilities to enter monitoring data and submit DMRs electronically using the internet. Until such time that the state's eDMR application is compliant with EPA's Cross-Media Electronic Reporting Regulation (CROMERR), permittees will be required to submit all discharge monitoring data to the state electronically using eDMR and will be required to complete the eDMR submission by printing, signing, and submitting one signed original and a copy of the computer printed eDMR to the following address:

NC DENR / Division of Water Resources / Water Quality Permitting Section  
ATTENTION: Central Files  
1617 Mail Service Center  
Raleigh, North Carolina 27699-1617

If a permittee is unable to use the eDMR system due to a demonstrated hardship or due to the facility being physically located in an area where less than 10 percent of the households have broadband access, then a temporary waiver from the NPDES electronic reporting requirements may be granted and discharge monitoring data may be submitted on paper DMR forms (MR 1, 1.1, 2, 3) or alternative forms approved by the Director. Duplicate signed copies shall be submitted to the mailing address above. See "How to Request a Waiver from Electronic Reporting" section below.

Regardless of the submission method, the first DMR is due on the last day of the month following the issuance of the permit or in the case of a new facility, on the last day of the month following the commencement of discharge.

Starting on **December 21, 2020**, the permittee must electronically report the following compliance monitoring data and reports, when applicable:

- Sewer Overflow/Bypass Event Reports;
- Pretreatment Program Annual Reports; and

- Clean Water Act (CWA) Section 316(b) Annual Reports.

The permittee may seek an electronic reporting waiver from the Division (see “How to Request a Waiver from Electronic Reporting” section below).

## 2. **Electronic Submissions**

In accordance with 40 CFR 122.41(l)(9), the permittee must identify the initial recipient at the time of each electronic submission. The permittee should use the EPA’s website resources to identify the initial recipient for the electronic submission.

Initial recipient of electronic NPDES information from NPDES-regulated facilities means the entity (EPA or the state authorized by EPA to implement the NPDES program) that is the designated entity for receiving electronic NPDES data [see 40 CFR 127.2(b)].

EPA plans to establish a website that will also link to the appropriate electronic reporting tool for each type of electronic submission and for each state. Instructions on how to access and use the appropriate electronic reporting tool will be available as well. Information on EPA’s NPDES Electronic Reporting Rule is found at: <http://www2.epa.gov/compliance/final-national-pollutant-discharge-elimination-system-npdes-electronic-reporting-rule>.

Electronic submissions must start by the dates listed in the “Reporting Requirements” section above.

## 3. **How to Request a Waiver from Electronic Reporting**

The permittee may seek a temporary electronic reporting waiver from the Division. To obtain an electronic reporting waiver, a permittee must first submit an electronic reporting waiver request to the Division. Requests for temporary electronic reporting waivers must be submitted in writing to the Division for written approval at least sixty (60) days prior to the date the facility would be required under this permit to begin submitting monitoring data and reports. The duration of a temporary waiver shall not exceed 5 years and shall thereupon expire. At such time, monitoring data and reports shall be submitted electronically to the Division unless the permittee re-applies for and is granted a new temporary electronic reporting waiver by the Division. Approved electronic reporting waivers are not transferrable. Only permittees with an approved reporting waiver request may submit monitoring data and reports on paper to the Division for the period that the approved reporting waiver request is effective.

Information on eDMR and the application for a temporary electronic reporting waiver are found on the following web page:

<http://deq.nc.gov/about/divisions/water-resources/edmr>

## 4. **Signatory Requirements [Supplements Section B. (11.) (b) and Supersedes Section B. (11.) (d)]**

All eDMRs submitted to the permit issuing authority shall be signed by a person described in Part II, Section B. (11.) (a) or by a duly authorized representative of that person as described in Part II, Section B. (11.) (b). A person, and not a position, must be delegated signatory authority for eDMR reporting purposes.

For eDMR submissions, the person signing and submitting the DMR must obtain an eDMR user account and login credentials to access the eDMR system. For more information on North Carolina’s eDMR system, registering for eDMR and obtaining an eDMR user account, please visit the following web page:



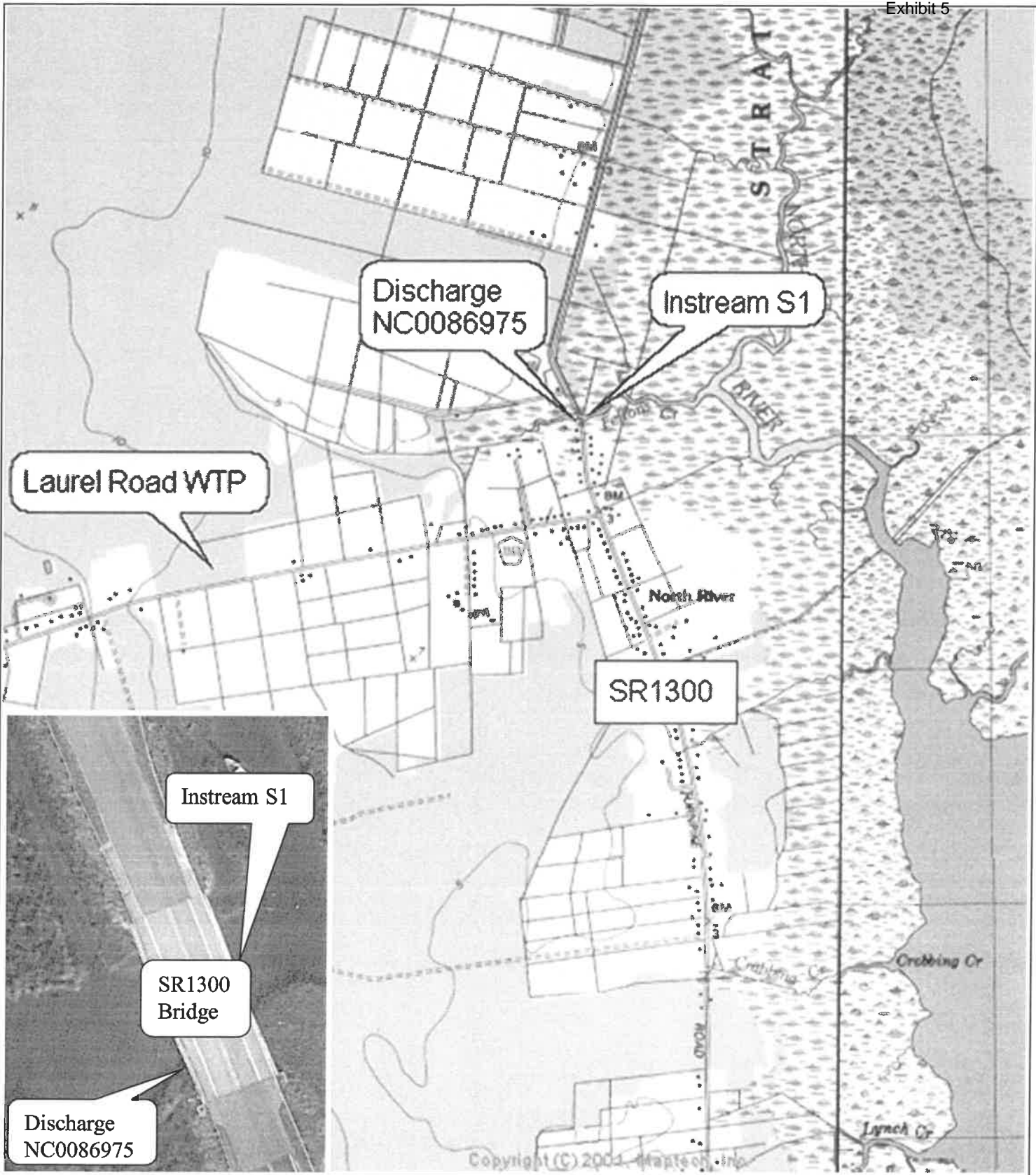
<http://deq.nc.gov/about/divisions/water-resources/edmr>

Certification. Any person submitting an electronic DMR using the state's eDMR system shall make the following certification [40 CFR 122.22]. NO OTHER STATEMENTS OF CERTIFICATION WILL BE ACCEPTED:

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

**5. Records Retention [Supplements Section D. (6.)]**

The permittee shall retain records of all Discharge Monitoring Reports, including eDMR submissions. These records or copies shall be maintained for a period of at least 3 years from the date of the report. This period may be extended by request of the Director at any time [40 CFR 122.41].



Copyright (C) 2001, MapInfo, Inc.

USGS Quad: H32SW Core Creek, NC

Outfall

Facility

Latitude: 34° 49' 12.2" N

34° 48' 50.5" N

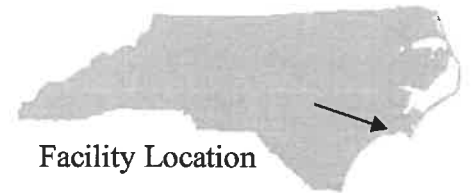
Longitude: 76° 38' 13.2" W

76° 39' 15.2" W

**White Oak Drainage Basin** - Stream Class: SA, HQW

Subbasin: 03-05-04 HUC: 03020301

Receiving Stream: Feltons Creek



Facility Location

Laurel Road WTP NC0086975  
 Carteret County



# EXHIBITS 6, 6(a), and 6(b)

Report on Chemical Analyses from Wells

# Environment 1, Incorporated

114 OAKMONT DRIVE  
 GREENVILLE, N.C. 27858

PHONE (252) 756-6208  
 FAX (252) 756-0633

## VOLATILE ORGANIC CHEMICALS ANALYSIS (VOC's)

WATER SYSTEM ID#: 04-16-197

COUNTY: CARTERET

Name of Water System: NORTH RIVER

Sample Type: (x) Entry Point ( ) Special/Non-compliance

Location Where Collected: WELL #1 & #2

Facility ID No.: WT1

Sample Point: E01

Collected By: JOHN SIMMONS JR

Collection Date	Collection Time
05/03/21	08:15 AM

Mail Results to (water system representative):

NORTH RIVER  
 ATTN: JOHN SIMMONS  
 5231 BUSINESS DRIVE  
 NEWPORT, NC 28570

Phone #: (252) 241-4646

Fax #: (252) 728-0793

Responsible Person's Email:  
 john.simmons@carteretcountync.gov

LABORATORY ID#: 37715

( ) SAMPLE UNSATISFACTORY

( ) RESAMPLE REQUESTED

CONTAM CODE	CONTAMINANT	METHOD CODE	REQUIRED REPORTING LIMIT (R.R.L.)	NOT DETECTED ABOVE R.R.L. (X)	QUANTIFIED RESULTS	ALLOWABLE LIMITS
2378	1,2,4-Trichlorobenzene	502.2	0.0005 mg/l	X	mg/l	0.07 mg/l
2380	Cis-1,2-Dichloroethylene	502.2	0.0005 mg/l	X	mg/l	0.07 mg/l
2955	Xylenes (Total)	502.2	0.0005 mg/l	X	mg/l	10.00 mg/l
2964	Dichloromethane	502.2	0.0005 mg/l	X	mg/l	0.005 mg/l
2968	o-Dichlorobenzene	502.2	0.0005 mg/l	X	mg/l	0.600 mg/l
2969	p-Dichlorobenzene	502.2	0.0005 mg/l	X	mg/l	0.075 mg/l
2976	Vinyl Chloride	502.2	0.0005 mg/l	X	mg/l	0.002 mg/l
2977	1,1-Dichloroethylene	502.2	0.0005 mg/l	X	mg/l	0.007 mg/l
2979	Trans-1,2-Dichloroethylene	502.2	0.0005 mg/l	X	mg/l	0.100 mg/l
2980	1,2-Dichloroethane	502.2	0.0005 mg/l	X	mg/l	0.005 mg/l
2981	1,1,1-Trichloroethane	502.2	0.0005 mg/l	X	mg/l	0.200 mg/l
2982	Carbon Tetrachloride	502.2	0.0005 mg/l	X	mg/l	0.005 mg/l
2983	1,2-Dichloropropane	502.2	0.0005 mg/l	X	mg/l	0.005 mg/l
2984	Trichloroethylene	502.2	0.0005 mg/l	X	mg/l	0.005 mg/l
2985	1,1,2-Trichloroethane	502.2	0.0005 mg/l	X	mg/l	0.005 mg/l
2987	Tetrachloroethylene	502.2	0.0005 mg/l	X	mg/l	0.005 mg/l
2989	Chlorobenzene	502.2	0.0005 mg/l	X	mg/l	0.100 mg/l
2990	Benzene	502.2	0.0005 mg/l	X	mg/l	0.005 mg/l
2991	Toluene	502.2	0.0005 mg/l	X	mg/l	1.000 mg/l
2992	Ethylbenzene	502.2	0.0005 mg/l	X	mg/l	0.700 mg/l
2996	Styrene	502.2	0.0005 mg/l	X	mg/l	0.100 mg/l

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ANALYSES BEGUN:	05/03/21	03:48 PM
ANALYSES COMPLETED:	05/13/21	10:24 AM

Laboratory Log #: 8018-050321-E01V

Certified By: MAO

COMMENTS:

13 OAKMONT DRIVE  
SPRINGVILLE, N.C. 27858

PHONE (252) 756-6000  
FAX (252) 756-0000

**INORGANIC CHEMICAL ANALYSIS**

WATER SYSTEM ID#: 04-16-197

COUNTY: CARTERET

Name of Water System: NORTH RIVER

Sample Type: (X) Entry Point ( ) Special/Non-compliance

Location Where Collected: WELL #1 & #2

Facility ID No.: WT1

Location Code: E01

Collected By: JOHN SIMMONS

Collection Date	Collection Time
09/01/21	08:00 AM

Mail Results to (water system representative):

NORTH RIVER  
ATTN: JOHN SIMMONS  
5231 BUSINESS DRIVE  
NEWPORT, NC 28570

Phone #: (252) 241-4646

Fax #: (252) 728-0793

Responsible Person's Email:  
john.simmons@carteretcountync.gov

LABORATORY ID#: 37715

( ) SAMPLE UNSATISFACTORY ( ) RESAMPLE REQUESTED

CONTAM CODE	CONTAMINANT	METHOD CODE	REQUIRED REPORTING LIMIT (R.R.L.)	NOT DETECTED ABOVE R.R.L. (X)	QUANTIFIED RESULTS	ALLOWABLE LIMITS
1005	Arsenic	200.8	0.005 mg/l	X	mg/l	0.010 mg/l
1010	Barium	200.8	0.400 mg/l	X	mg/l	2.000 mg/l
1015	Cadmium	200.8	0.001 mg/l	X	mg/l	0.005 mg/l
1020	Chromium	200.8	0.020 mg/l	X	mg/l	0.100 mg/l
1024	Cyanide	4500CN-E	0.050 mg/l	X	mg/l	0.200 mg/l
1025	Fluoride	4500F-C	0.100 mg/l		0.24 mg/l	4.000 mg/l
1028	Iron	200.7	0.060 mg/l	X	mg/l	0.300 mg/l
1032	Manganese	200.8	0.010 mg/l	X	mg/l	0.050 mg/l
1035	Mercury	200.8	0.0004 mg/l	X	mg/l	0.002 mg/l
1036	Nickel	200.8	0.100 mg/l	X	mg/l	N/A
1045	Selenium	200.8	0.010 mg/l	X	mg/l	0.050 mg/l
1052	Sodium	200.7	1.000 mg/l		94.875 mg/l	N/A
1055	Sulfate	4500SO4-E	15.000 mg/l	X	mg/l	250.0 mg/l
1074	Antimony	200.8	0.003 mg/l	X	mg/l	0.006 mg/l
1075	Beryllium	200.8	0.002 mg/l	X	mg/l	0.004 mg/l
1085	Thallium	200.8	0.001 mg/l	X	mg/l	0.002 mg/l
1925	pH	4500H-B	N/A		7.4 pH	6.50-8.50

	DATE:	TIME:
ANALYSES BEGUN:	09/01/21	04:49 PM
ANALYSES COMPLETED:	09/17/21	02:27 PM

Laboratory Log #: 8018-090121-E01I

Certified By: MAO

COMMENTS:

Drinking Water ID: 37715

Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE  
 GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208  
 FAX (252) 756-0633

OFFICIAL COPY

Aug 02 2022

## VOLATILE ORGANIC CHEMICALS ANALYSIS (VOC's)

WATER SYSTEM ID#: 04-16-198

COUNTY: CARTERET

Name of Water System: MERRIMON COMMUNITY

Sample Type: (X) Entry Point ( ) Special/Non-compliance

Location Where Collected: ENTRY POINT

Facility ID No.: P01

Sample Point: 010

Collected By: STACY GOFF

Collection Date	Collection Time
04/13/22	08:00 AM

Mail Results to (water system representative):

MERRIMON COMMUNITY  
 ATTN: ANTHONY FUTRELL  
 5231 BUSINESS DRIVE  
 NEWPORT, NC 28570

Phone #: (252) 241-4646

Fax #: (252) 728-0793

Responsible Person's Email:  
 leighann.welborn@carolinawaterservice

LABORATORY ID#: 37715

( ) SAMPLE UNSATISFACTORY

( ) RESAMPLE REQUESTED

CONTAM CODE	CONTAMINANT	METHOD CODE	REQUIRED REPORTING LIMIT (R.R.L.)	NOT DETECTED ABOVE R.R.L. (X)	QUANTIFIED RESULTS	ALLOWABLE LIMITS
2378	1,2,4-Trichlorobenzene	502.2	0.0005 mg/l	X	mg/l	0.07 mg/l
2380	Cis-1,2-Dichloroethylene	502.2	0.0005 mg/l	X	mg/l	0.07 mg/l
2955	Xylenes (Total)	502.2	0.0005 mg/l	X	mg/l	10.00 mg/l
2964	Dichloromethane	502.2	0.0005 mg/l	X	mg/l	0.005 mg/l
2968	o-Dichlorobenzene	502.2	0.0005 mg/l	X	mg/l	0.600 mg/l
2969	p-Dichlorobenzene	502.2	0.0005 mg/l	X	mg/l	0.075 mg/l
2976	Vinyl Chloride	502.2	0.0005 mg/l	X	mg/l	0.002 mg/l
2977	1,1-Dichloroethylene	502.2	0.0005 mg/l	X	mg/l	0.007 mg/l
2979	Trans-1,2-Dichloroethylene	502.2	0.0005 mg/l	X	mg/l	0.100 mg/l
2980	1,2-Dichloroethane	502.2	0.0005 mg/l	X	mg/l	0.005 mg/l
2981	1,1,1-Trichloroethane	502.2	0.0005 mg/l	X	mg/l	0.200 mg/l
2982	Carbon Tetrachloride	502.2	0.0005 mg/l	X	mg/l	0.005 mg/l
2983	1,2-Dichloropropane	502.2	0.0005 mg/l	X	mg/l	0.005 mg/l
2984	Trichloroethylene	502.2	0.0005 mg/l	X	mg/l	0.005 mg/l
2985	1,1,2-Trichloroethane	502.2	0.0005 mg/l	X	mg/l	0.005 mg/l
2987	Tetrachloroethylene	502.2	0.0005 mg/l	X	mg/l	0.005 mg/l
2989	Chlorobenzene	502.2	0.0005 mg/l	X	mg/l	0.100 mg/l
2990	Benzene	502.2	0.0005 mg/l	X	mg/l	0.005 mg/l
2991	Toluene	502.2	0.0005 mg/l	X	mg/l	1.000 mg/l
2992	Ethylbenzene	502.2	0.0005 mg/l	X	mg/l	0.700 mg/l
2996	Styrene	502.2	0.0005 mg/l	X	mg/l	0.100 mg/l

	DATE:	TIME:
ANALYSES BEGUN:	04/13/22	03:50 PM
ANALYSES COMPLETED:	05/02/22	10:40 AM

Laboratory Log #: 8044-041322-010V

Certified By: MAO

COMMENTS:

Drinking Water ID: 37715

Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE  
 GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208  
 FAX (252) 756-0633

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Aug 02 2022

## INORGANIC CHEMICAL ANALYSIS

WATER SYSTEM ID#: 04-16-198

COUNTY: CARTERET

Name of Water System: MERRIMON COMMUNITY

Sample Type: (X) Entry Point ( ) Special/Non-compliance

Location Where Collected: ENTRY POINT

Facility ID No.: P01

Location Code: 010

Collected By: ANTHONY FUTRELL

Mail Results to (water system representative):

**MERRIMON COMMUNITY**  
**ATTN: ANTHONY FUTRELL**  
**5231 BUSINESS DRIVE**  
**NEWPORT, NC 28570**

Phone #: (252) 241-4646

Fax #: (252) 728-0793

Responsible Person's Email:

[leighann.welborn@carolinawaterservicenc.c](mailto:leighann.welborn@carolinawaterservicenc.c)

Collection Date	Collection Time
02/01/22	12:10 PM

LABORATORY ID#: 37715

( ) SAMPLE UNSATISFACTORY

( ) RESAMPLE REQUESTED

CONTAM CODE	CONTAMINANT	METHOD CODE	REQUIRED REPORTING LIMIT (R.R.L.)	NOT DETECTED ABOVE R.R.L. (X)	QUANTIFIED RESULTS	ALLOWABLE LIMITS
1005	Arsenic	200.8	0.005 mg/l	X	mg/l	0.010 mg/l
1010	Barium	200.8	0.400 mg/l	X	mg/l	2.000 mg/l
1015	Cadmium	200.8	0.001 mg/l	X	mg/l	0.005 mg/l
1020	Chromium	200.8	0.020 mg/l	X	mg/l	0.100 mg/l
1024	Cyanide	4500CN-E	0.050 mg/l	X	mg/l	0.200 mg/l
1025	Fluoride	4500F-C	0.100 mg/l		0.35 mg/l	4.000 mg/l
1028	Iron	200.7	0.060 mg/l		0.167 mg/l	0.300 mg/l
1032	Manganese	200.8	0.010 mg/l	X	mg/l	0.050 mg/l
1035	Mercury	200.8	0.0004 mg/l	X	mg/l	0.002 mg/l
1036	Nickel	200.8	0.100 mg/l	X	mg/l	N/A
1045	Selenium	200.8	0.010 mg/l	X	mg/l	0.050 mg/l
1052	Sodium	200.7	1.000 mg/l		25.262 mg/l	N/A
1055	Sulfate	4500SO4-E	15.000 mg/l	X	mg/l	250.0 mg/l
1074	Antimony	200.8	0.003 mg/l	X	mg/l	0.006 mg/l
1075	Beryllium	200.8	0.002 mg/l	X	mg/l	0.004 mg/l
1085	Thallium	200.8	0.001 mg/l	X	mg/l	0.002 mg/l
1925	pH	4500H-B	N/A		7.1 pH	6.50- 8.50

	DATE:	TIME:
ANALYSES BEGUN:	02/02/22	03:34 PM
ANALYSES COMPLETED:	02/22/22	03:56 PM

Laboratory Log #: 8044-020122-010I

Certified By: MAO

COMMENTS:



# EXHIBIT 8

Please see attached Exhibit 7 and 7(a) which include the purchase agreements.

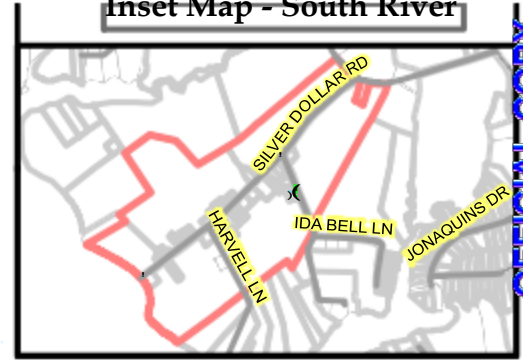
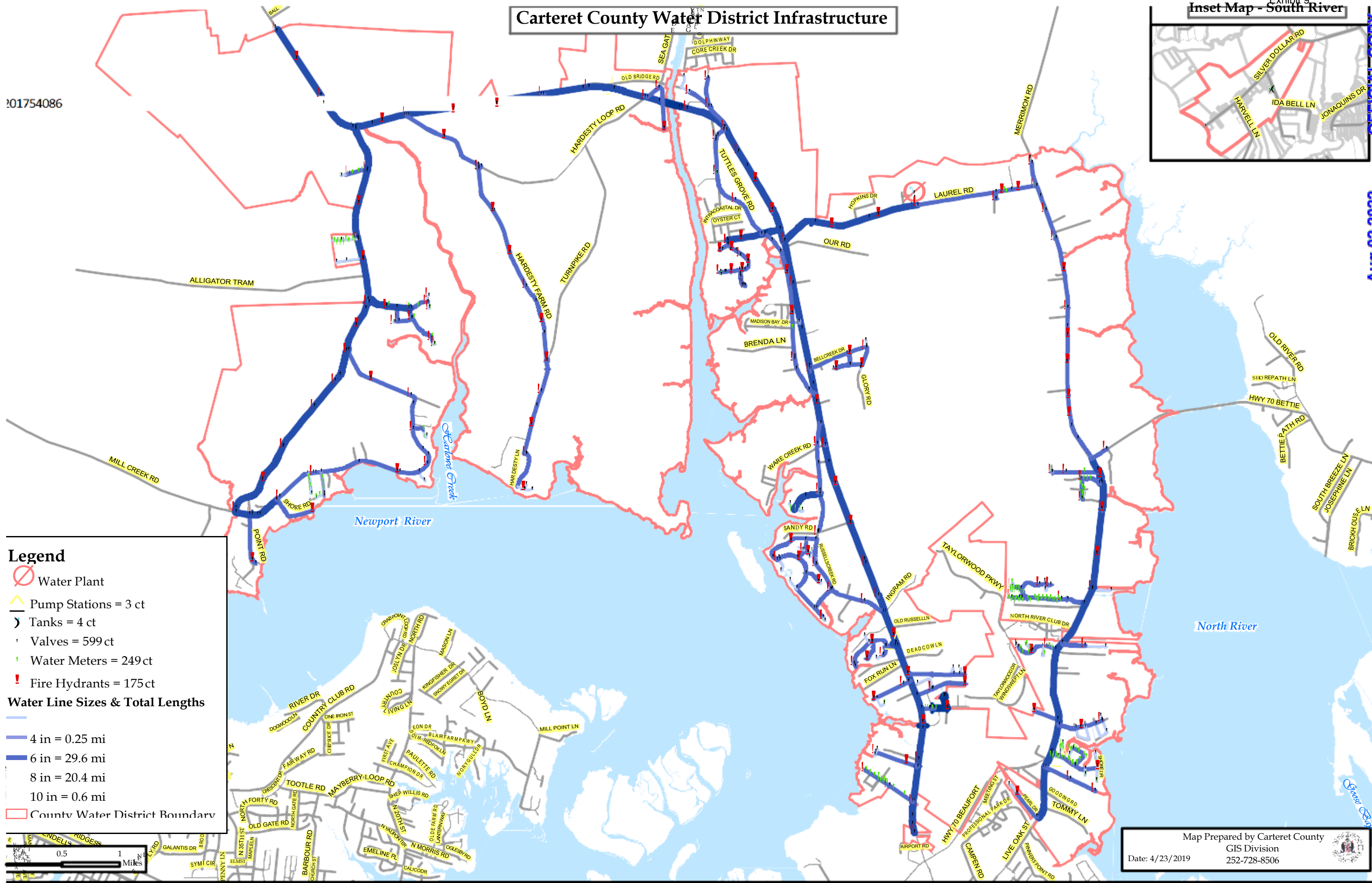
## EXHIBIT 9 and 9(a)

Please see attached service area and vicinity maps.

# Carteret County Water District Infrastructure

## Inset Map - South River

101754086

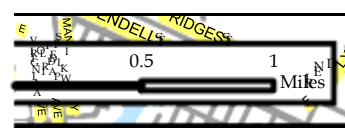


**Legend**

- Water Plant
- Pump Stations = 3 ct
- Tanks = 4 ct
- Valves = 599 ct
- Water Meters = 249 ct
- Fire Hydrants = 175 ct

**Water Line Sizes & Total Lengths**

- 4 in = 0.25 mi
- 6 in = 29.6 mi
- 8 in = 20.4 mi
- 10 in = 0.6 mi
- County Water District Boundary



Map Prepared by Carteret County  
 GIS Division  
 Date: 4/23/2019 252-728-8506

OFFICIAL COPY Aug-02-2022

**Legend**

- Road Centerlines
- Carteret County Water Lines
- Carteret County Water District
- CARTERETGIS.SDE.TAXPARCELS

CWSNC W354 SUB 399- CPCN  
 ACQUISITION OF CARTERET COUNTY WATER SYSTEM  
 Exhibit 9(a)

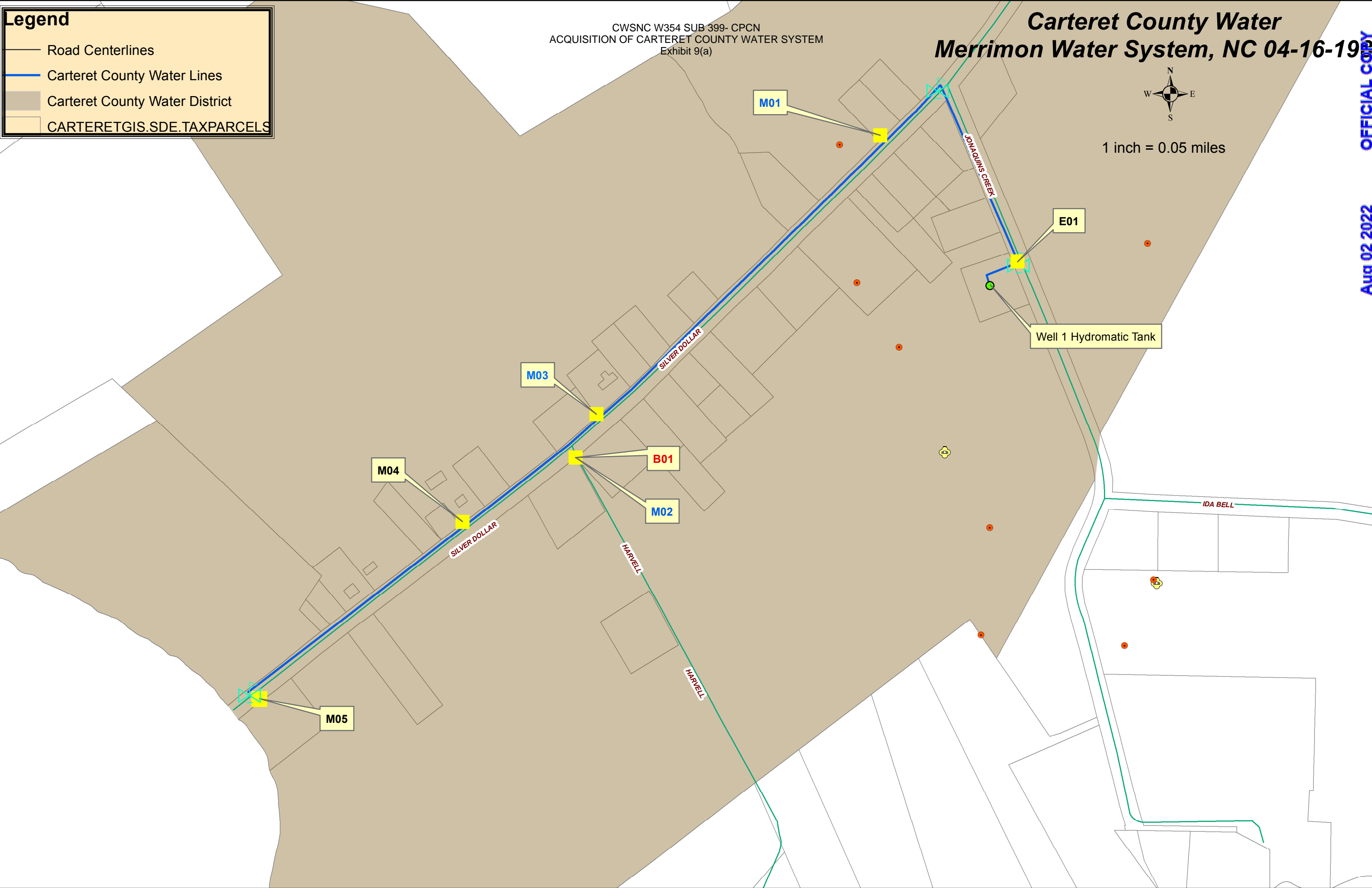
**Carteret County Water  
 Merrimon Water System, NC 04-16-19**



1 inch = 0.05 miles

OFFICIAL COPY

Aug 02 2022



# EXHIBIT 10

Please see attached service area and vicinity maps included  
in Exhibit 9 and 9a.

# EXHIBIT 11

Attached estimates and breakdown of plant.

# FEASIBILITY STUDY FOR WATER SYSTEM MERGER

## Carteret County, NC



**December 2019**


**DAA Project Number: 18080125-010204**





**Draper Aden Associates**  
*Engineering • Surveying • Environmental Services*

**3<sup>RD</sup> PARTY REVIEW**

This Report has been subjected to technical and quality reviews by:

Andy Dastidar		12/5/2019
Name:	Signature	Date
Project Engineer		

Aziz Ahmed		12/5/2019
Name:	Signature	Date
Project Manager		

C. Tyrus Clayton, Jr		12/5/2019
Name:	Signature	Date
Quality Reviewer		





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- Appendix A Carteret County Water System Maps
- Appendix B Carteret County Water Rates
- Appendix C Town of Beaufort Water Rates



## EXECUTIVE SUMMARY

Carteret County (the County) retained Draper Aden Associates (DAA) to evaluate the feasibility of a “merger” of the County’s water systems with Town of Beaufort’s (the Town) water system. The proposed “merger” would entail the Town of Beaufort taking over the ownership and operation of the County’s water systems.

### **The following tasks were performed:**

1. Evaluated the County’s water systems assets and maintenance programs.
2. Developed estimated present value of the County’s water systems.
3. Reviewed current staffing and potential impacts on the Town’s water system staffing, if the merger were to occur.
4. Reviewed the County’s water rates, revenues, operating expenses and debt service.
5. Analyzed the projected fiscal impact on the Town of Beaufort water system, if the merger occurs.
6. Developed recommendations for a win-win merger condition for both the Town and the County.

### **Major findings from the study include:**

1. County’s water infrastructure is well documented and in good condition.
2. **Estimated present value of the County’s water system is approximately \$12.3 million.**
3. County’s current water rate (\$55.10 / 5,000 gallons) is less than the Town’s out of town water rate (\$58.79 / 5,000 gallons).
4. **County has outstanding water debt of \$2,066,128 (principal only) which will be retired in Fiscal Year 2051-2052.**
5. The operating expenses of the County’s water system have exceeded revenues in recent years and the deficits have been subsidized by the tax revenues generated from the Special Water Tax District. FY 2019 is the first year where projected expenses will be lower than the revenue. The County believes that FY 2019 will be the new normal as the water system is in good condition now, and the County does not have any need for large capital investment in the foreseeable future.
6. Currently, the County has three (3) water staff and the Town has four (4) water staff. The merged system will need services of a full-time and part time County staff in addition to the four (4) Town staff. There will be a \$165,000 savings in staff compensation. These excess funds can be used for system upgrades or capital expenditures.

DAA’s findings show that a merger will be beneficial for both the County and the Town, but to make it workable for the Town, DAA made some recommendations.



---

**Recommendations:**

1. The County transfers the water systems to the Town at a cost of \$1.
2. The County continues to pay off the current debt service (\$245,800 / per year) for next 11 years to retire the debt earlier and remove or modify the water tax district after debt retirement.
3. Based on the current tax rate, the County will have excess fund (difference between water district tax revenue and debt service fee, \$177,000 per year) after merger until the debt is retired. County will work in good faith with the Town utilizing these funds for upgrades and expansions to the system during the 11-years debt pay-down period. County may also continue to participate in extensions and upgrades beyond the 11 years, for specific county needs within the existing water district boundaries.
4. The Town will maintain the water rates for the special water district at a rate that is less than the County water rates at the merger date and can increase or decrease the rates in future by the same percentage change as the in-Town water rates.

**Benefits for the Town:**

1. Acquisition of \$12.3 million worth of infrastructure without any financial investment.
2. Expansion of Town's water system and customer base.
3. County's financial support for at least 11 years to address special capital and maintenance issues in the system previously owned by the County.
4. Potential opportunity for annexation.

The advantages of this potential merger outweigh the few economic and financial limitations. Prior to merger of these water systems, the County and Town will need to address all legal and financial aspects of the merger, which will require good-faith negotiations from both entities.

-- End of Section --



## 1.0 INTRODUCTION

Carteret County and the Town of Beaufort are interested in “merging” the water systems of the two entities – with the Town taking over ownership and operation of the County’s water system.

### 1.1 Objectives

The objective of this feasibility study is to determine the value of Carteret County’s water systems, understand the staffing needs to operate and maintain the County’s systems, evaluate the financial condition of the County’s water department, identify the potential impact of the proposed merger on the utilities, and develop recommendations to make the merger beneficial for the Town and the County. The findings and recommendations are documented in this DRAFT report for further discussions with the County and the Town staff. This report will be updated based on the discussions between the County and the Town to be facilitated by DAA.

### 1.2 Report Organization

This report is organized as outlined below:

- ◆ Chapter 2.0 (Carteret County Water System Assessment) describes the County’s water system including land, physical assets, maintenance programs, and near-term capital improvement program.
- ◆ Chapter 3.0 (Estimated Current Value of Carteret County’s Water System) describes the monetary value of the assets and how the values were calculated.
- ◆ Chapter 4.0 (Organization of Carteret County Water Department) describes the current staffing structure and responsibilities.
- ◆ Chapter 5.0 (Revenues and Expenses of Carteret County Water System) describes the water rates, debt service and current financial conditions.
- ◆ Chapter 6.0 (Feasibility of Merger) describes the Town of Beaufort system, advantages to the Town in taking over the Carteret County System, and recommendations to make the merger beneficial to both the County and the Town.
- ◆ Chapter 7.0 (Conclusion) describes the outcome of this feasibility study.

-- End of Section --



## **2.0 CARTERET COUNTY WATER SYSTEM ASSESSMENT**

### **2.1 System Overview**

Carteret County (the County) relies on two groundwater wells for water supply. Water from the first well is treated at the Laurel Road Water Treatment Plant before it is pumped to three (3) elevated storage tanks for distribution within the community. These storage tanks are located with water lines extending to the Craven County line along NC Highway 101 and into the Mill Creek area. There are also water lines extending from the Beaufort Town limits along Highway 70 to East Carteret High School and along Merrimon Road to Laurel Road. The system serves approximately 1,206 customers.

The County also owns and operates a small water system about 20 miles north of Laurel Rd and Merrimon Rd intersection. This small system known as Merrimon Water System (MWS), serves approximately 25 – 30 customers. MWS receives water from the Jonaquins Creek well that consists of a well and an above-ground storage tank.

A map showing Carteret County's water system (including its water district boundary) is shown in Figure 1 of Appendix A. The MWS is shown at the inset of Figure 1 and in Figure 2 of Appendix A.

MWS system is an integral part of the County's water system and should be included in any potential water system merger or transfer discussions. Legalities of such a merger / transfer will be agreed upon and processed by participating agencies prior to acceptance and completion of the merger process.

### **2.2 Special Water Tax District**

The Board of Commissioners of Carteret County established the Special Water Tax District (SWTD) in 2010. Within this district, there is a special tax assessed to taxpayers for water supply and distribution services. The tax rate in the special water district has been 5.5 cents since 2012. In addition, sales tax revenues in the SWTD are used to support the water operations. Table 1 provides the revenue and expenditures for the SWTD for FY2018, FY2019 and FY2020.



**Table 1. Revenue and Expenses for the Special Water Tax District**

	FY 2018 (Actual) \$	FY 2019 (Amended Budget) \$	FY2020 (Budget ) \$
Expenditure Category			
Fees	1,240	3,000	3,000
Transfer to Water Fund	433,600	400,000	420,000
<b>Total</b>	<b>434,840</b>	<b>403,000</b>	<b>423,000</b>
Revenue Sources			
Ad Valorem Taxes	299,136	292,000	292,000
Sales Tax	96,329	95,000	100,000
Interest	1,505	1,000	6,000
Appropriated Fund Balances	0	15,000	25,000
<b>Total</b>	<b>396,969</b>	<b>403,000</b>	<b>423,000</b>

### 2.3 Water System Assets

The County water system assets include water mains, valves, water meters, fire hydrants, tanks, booster pump stations, a Supervisory Control and Data Acquisition (SCADA) system and land parcels. These assets are listed in Table 2.

**Table 2. Water System Assets of Carteret County**

Items	Quantity		Description
Water Plant	1		
Land	8 Parcels	16.49 acres	
Pump Stations/Pump Houses	3	Booster Pumps 1, 2, and 3	
Water Tanks	4	3 elevated tanks and one ground tank	
Valves	599		
Water Meters	1,206		
Fire Hydrants	175		
Water Lines	5 miles	2 inches	
	0.25 miles	4 inches	



Items	Quantity	Description
	29.6 miles	6 inches
	20.4 miles	8 inches
	0.6 miles	10 inches
SCADA System	1	Management of elevated water tanks and Jonaquins Creek well house

### 2.3.1 Storage Tanks

Details for the three elevated storage tanks are provided in Table 3.

**Table 3. Elevated Water Tanks**

Types of Tanks	Capacity (gallons)	Manufacturer	Design Type	Year Constructed
Taylor Farm Road Tank	200,000	Caldwell	Torus Bottom	2012
Laurel Road Tank	200,000	Phoenix	Double Ellipsoidal	1988
Mayflower Drive Tank	200,000	Phoenix	Torus Bottom	2012

### 2.3.2 Pump Stations

The County has three booster pump stations. Details of these pump stations are shown in Table 4. Booster Pump 2 provides water at the emergency connection between the Town of Beaufort and the County.

**Table 4. Pump Stations**

Types of Pump	Cat No/Model Number	Manufacturer	Horsepower (HP)	Design Type (RPM)	Installation Date
Booster Pump #1	R5P 3D/H317	Emerson Motor Co.	5	1170	2012*
Booster Pump #2	EM3774T	Baldor Electric Co.	10	1760	2012
Booster Pump #3	EM3770T	Baldor Electric Co.	7.5	1770	2012

\*Estimated, actual date of installation is not available.





### 2.3.3 Land

The total acreage utilized by the County’s water system is approximately 16.49 acres. Table 5 summarizes the properties, the street address and the acreage.

**Table 5. Carteret County Water System Property**

Property	Address	Total Acres
Laurel Road Aerial Tank	524 Laurel Road	2.04
Laurel Road Treatment Plant	526 Laurel Road	8.12
Jonaquins Creek Water House	150 Jonaquins Creek Road	0.82
Taylor Farm Elevated Tank	209 Taylor Farm Road	1.01
Booster Pump Station #1	142 Shell Landing Road	0.47
Booster Pump Station #2	1109 Hwy 101	0.60
Booster Pump Station #3	3510 Hwy 101	2.56
Mayflower Drive Elevated Tank	104 Mayflower Drive	0.87
<b>Total</b>		<b>16.49</b>

## 2.4 Asset Maintenance

### 2.4.1 Pipeline Maintenance

The County’s Public Works Department (PWD) performs system maintenance including, but limited to, the following:

- ◆ Detection and repair of leaks in the pipe lines
- ◆ Maintenance of booster pumps and other associated components of the water distribution system
- ◆ Maintenance and replacement of water meters, valves and fire hydrants
- ◆ Water service installations and / or inspections

### 2.4.2 Tank Maintenance

Southern Corrosion Inc (SCI) has an existing water tank management addendum to contract with the County until year 2030. Per contract, the tanks will be inspected every year and will be washed-out at five (5) year intervals. The tank interior will be recoated at fifteen (15) year intervals, and the exterior will be recoated at five (5) year intervals. The next wash-out is scheduled for year eight (8) of the service



(year 2023), repainting of the tank exterior is scheduled for year twelve (12) of the service (year 2027)  
repainting of tank interior is scheduled for year twelve (12) of the service (2027).

The contract does not include the complete abrasive blasting of tank exterior nor the pressure washing of tank exterior as a stand-alone apart from a surface preparation for painting.

SCI provides the following services to the County in accordance with the tank's maintenance program:

- ◆ Emergency services (tank leaks, tank failures, etc.)
- ◆ Scheduled cleaning/washout of tanks interiors
- ◆ Inspection of interior and exterior surfaces of tanks
- ◆ Application of protective coatings
- ◆ Maintenance, upkeep and long-term maintenance needs

Table 6 below indicates the scheduled maintenance activities that have taken place under this contract for the last four years. Based on the 2018 inspection results as shown in Table 6, all three tanks are in good condition without any serious deficiencies that require immediate attention.

## **2.5 Carteret County Water System Capital Improvement Plan**

In 2013, the County completed a \$3.51 million water system improvement project. Since 2013, there has been little need for significant capital projects; there were no capital projects scheduled in FY2019 and the FY2020 budget does not include any. The County continues to fund "pay as you go" capital projects, as needed. Recent capital investments include:

- ◆ Fiscal Year 2011: WTP Telemetry Base Upgrade, Addition of 10-inch Color MMI, Replace Tank Level Meter/Digital DSP-MMI, Use Existing Probe Relays-Raw Well Control, and Replace Remotes /Upgrade Phone Line and Radio. Total cost for upgrade was \$27,998.
- ◆ Fiscal Year 2016: BPS Flow Meter and RTU Repair. Total cost for repair was \$4,697.
- ◆ Fiscal Year 2017: Discharge Pump Station SCADA TIE-IN. Total cost for this implementation was \$3,309.
- ◆ Fiscal Year 2018: Softener and filter refurbishment. The total cost was \$121,446

Overall, the water system is in good condition and the County is not expecting any major capital investment in the near future.



**Table 6. Tank Maintenance Report (2015-2018)**

Tank	Year Constructed	Year-2015	Year-2016	Year-2017	Year-2018
Taylor Farm Road Tank	2012	The tank, its components, and coating systems are in good condition. The interior coating system deficiencies ranged between 0% and 10%, whereas, the exterior coating deficiencies ranged between 0%-2%. Some of the exterior deficiencies included; Pin Point Rust, and Irregular Surface Deterioration. No visual deficiencies were observed pertaining to internal coating system. The safety inspection yielded satisfactory and compliant results pertaining to structural integrity of exterior, storage, safety, and other associated components	The tank, its components, and coating systems are in good condition. The interior coating system is free of any premature failure and provides adequate protection to the structure. The upper portions of the leg ladder, sway rods, and shell wall ladder are showing signs of premature coating failure causing surface corrosion. Repair and scheduled maintenance maybe required	There was no maintenance required during this time. The coating in the exterior and interior are in excellent condition	No deficiencies or touchups were noted, and the overall visual appearance of the water tank is satisfactory
Laurel Road Tank	1988	The tank, its components, and coating systems are in good condition. The interior coating system deficiencies ranged between 0% and 10%, whereas, the exterior coating deficiencies ranged between 0%-2%. Some of the exterior deficiencies included; Irregular Surface Deterioration, Mildew, Peeling Multiple Coats, and Undercutting. Deficiencies pertaining to internal coating system included Pin Point Rust, and Irregular Surface	There were no deficiencies or touch ups noted and the overall visual appearance of the water tank (internal and external) is satisfactory. The obstruction light on tank roof was repaired	Both exterior and interior protective coating seems to be in excellent condition. The interior and exterior coating systems are free of any serious deficiencies and provides adequate protection to the structure.	The water tank, its components, and coating systems are in good condition. The interior and exterior coating systems are free of any serious deficiencies and provides adequate protection to the structure.



		<p>Deterioration. The safety inspection yielded satisfactory and compliant results pertaining to structural integrity of exterior, safety, and other associated components. The side wall coating of the storage exterior needs to be monitored as per the report.</p>			
Mayflower Drive Tank	2010	<p>The tank, its components, and coating systems are in good condition. The interior coating system deficiencies ranged between 0% and 10%, whereas, the exterior coating deficiencies ranged between 0%-2%. Some of the exterior deficiencies included; Pin Point Rust, Irregular Surface Deterioration, etc. No visual deficiencies were observed pertaining to internal coating system. The safety inspection yielded satisfactory and compliant results pertaining to structural integrity of exterior, storage, safety, and other associated components</p>	<p>The tank, its components, and coating systems are in good condition. The interior coating system is free of any premature failure and provides adequate protection to the structure. On the exterior, such as the ladder and sway/spider rods, are showing signs of premature failure and surface corrosion. Repair and a scheduled maintenance may be required.</p>	<p>Exterior deficiencies included Mildew, Fading, Chalking, Irregular Surface Deterioration, Undercutting, Peeling Paint to Substrate. Adhesion failures and surface corrosion present on 20% of the surfaces. 10% Adhesion failures and surface corrosion observed on the rods and struts. And close to 2% adhesion failure and surface corrosion observed on the catwalk and handrails. The interior protective coating system seems to be in excellent condition</p>	<p>Structural wise, the tank is in good condition, but a planned renovation needs to be scheduled by the County Officials. A weathered and weakened coating system is nearing the end of its protective cycle</p>

-- End of Section --



### 3.0 ESTIMATED CURRENT VALUE OF THE CARTERET COUNTY WATER SYSTEM

#### 3.1 Theory of Asset Valuation

DAA estimated the value of the County's water system using an asset evaluation approach as described below.

Book Value (BV) approach was used in estimating the value of the fixed assets. The BV approach uses equation (1) to estimate the present worth of an asset as stated below:

---

$$\text{Present BV of Asset (\$)} = \text{Historical Cost (\$)} - ((\text{Accumulated Depreciation (\$)} + \text{Current Depreciation (\$)}) \quad (1)$$

---

Traditionally, straight line depreciation (SLD) technique is used to estimate depreciated value of water system assets. Historical cost represents the cost of the assets on the day of acquisition. DAA was able to locate financial records pertaining to purchase prices on some of these assets from the County's finance department.

Accumulated depreciation is calculated using equation (2), and incorporates useful life of the water distribution system component:

---

$$\text{Accumulated depreciation (\$)} = (\text{Net Amount to be depreciated} / \text{Total useful life in months}) \times ((\text{Fiscal year beginning date} - \text{date of acquisition}) / 30.4167) \quad (2)$$

---

The value of 30.4167 is used for converting days to months.

Depreciation value (\$) for each asset for the current year is estimated using the following equation:

---

$$\text{Current Depreciation (\$)} = \text{Net amount to be depreciated (\$)} / \text{Total useful life (months)} \quad (3)$$

---

The equation (3) may be modified if the depreciation amount (\$) in equation (3) exceeds the difference of net amount to be depreciated and accumulated depreciation. The revised equation for Current Depreciation is stated below:

---

$$\text{Depreciation Current Year (\$)} = \text{Net Amount to be depreciated (\$)} - \text{Accumulated depreciation (\$)} \quad (4)$$

---



---

The Net amount to be depreciated (\$) is calculated using the equation (5)

---

$$\text{Net Amount to be depreciated (\$)} = \text{Historical Cost (\$)} - \text{Salvage Value (\$)} \quad (5)$$

---

For purpose of estimation, the salvage value of each system component was assumed at zero dollar (\$0). With this assumption, the net amount to be depreciated was equaled to the historical cost of the asset.

### **3.2 Estimated Value of the County’s Water Systems**

The County provided detailed asset data and historical costs for the pump stations and the water tanks. Book Value (BV) of these assets was calculated and is documented in Table 7. Historical cost data for other assets such as fire hydrants, the water treatment plant, water mains, and the SCADA system installed at Booster Pump 1 were not available, but the County provided financial data that detailed the present book value of the assets as listed in Table 8. Adding the total book values listed in the Tables 7 and 8, the net worth of the water system assets owned by the County was calculated to be approximately \$12,335,392.



**Table 7. Estimated Book Value of Carteret County Water System**

Assets	Date of Acquisition	Design Life (yrs)	Historical Cost (\$)	Total Useful life (months)	Net Amount to Be Depreciated (\$)	Accumulated Depreciation (\$)	Current Depreciation (\$)	Total Depreciation (\$)	Present Book value of Asset (\$)
Booster Pump 1	2012	50	174,284	600	174,284	19,462	3,486	22,947	151,337
Booster Pump 2	2012	50	253,111	600	253,111	28,264	5,062	33,326	219,785
Booster Pump 3	2012	50	<u>253,111</u>	600	253,111	28,264	5,062	<u>33,326</u>	<u>219,785</u>
		<b>Subtotal</b>	<b>680,507</b>				<b>Subtotal</b>	<b>89,600</b>	<b>590,907</b>
Water Tank 1	1988	50	619,263	600	619,263	366,397	12,385	378,783	240,480
Water Tank 2	2012	50	689,091	600	689,091	76,949	13,782	90,730	598,361
Water Tank 3	2012	50	<u>765,262</u>	600	765,262	85,454	15,305	<u>100,759</u>	<u>664,502</u>
		<b>Subtotal</b>	<b>2,073,616</b>				<b>Subtotal</b>	<b>570,272</b>	<b>1,503,344</b>
		<b>Total</b>	<b>2,754,123</b>				<b>Total</b>	<b>659,872</b>	<b>2,094,250</b>

See Section 3.1 for the equations used in BV calculations



**Table 8. Present Book Value of Carteret County Water System**

System No	Description	Present Book value of Asset (\$)
<b>SCADA</b>		
Booster Pump House1	SCADA System*	<b>280,000</b>
<b>Land</b>		
Laurel Road Aerial Tank	Land Property	25,428
Laurel Road Treatment Plant	Land Property	57,220
Jonaquins Creek Water House	Land Property	26,097
Aerial Tank	Land Property	130,312
Booster Pump Station-1	Land Property	40,578
Booster Pump Station-2	Land Property	35,312
Booster Pump Station-3	Land Property	34,160
Elevated Tank	Land Property	20,615
	Sub Total	<b>369,722</b>
<b>Well House</b>	Water withdrawal house*	<b>200,000</b>
<b>Jonaquins Creek Well House and Storage</b>	Merrimon Water System*	<b>400,000</b>
<b>Fire Hydrants</b>	Fire rescue purposes	<b>300,000</b>
<b>Water Treatment Plants</b>	Supply/Distribution*	<b>1,500,000</b>
<b>Piping System</b>		
2" PVC	(26,400 ft, \$10/ft)	264,000
4" PVC	(1,320 ft, \$16/ft)	21,120
6" PVC	(151,588 ft, \$24/ft)	3,638,112
6" Ductile	(4,700 ft, \$28/ft)	131,600
8 " PVC	(104,477 ft, \$28/ft)	2,925,356
8" Ductile	(3,235 ft, \$32/ft)	103,520
10" PVC	(3,168 ft, \$34/ft)	107,712
	<b>Sub Total</b>	<b>7,191,420</b>
	<b>Total (\$)</b>	<b>10,241,142</b>

\*Estimated value

--End of Section --





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## **4.0 ORGANIZATION OF CARTERET COUNTY WATER DEPARTMENT**

The County's water system is managed by the Public Works Department (PWD) Director. Water operations are managed by a lead water plant operator and utilities technician who report to the PWD Director. The PWD Director reports to General Service Director who in turn is managed by the Assistant Manager of the County. The Assistant Manager reports to the County Manager. Billing and collection responsibilities for the systems are provided by the County Finance Office. An organizational chart for the Water Department is shown in Figure 1.

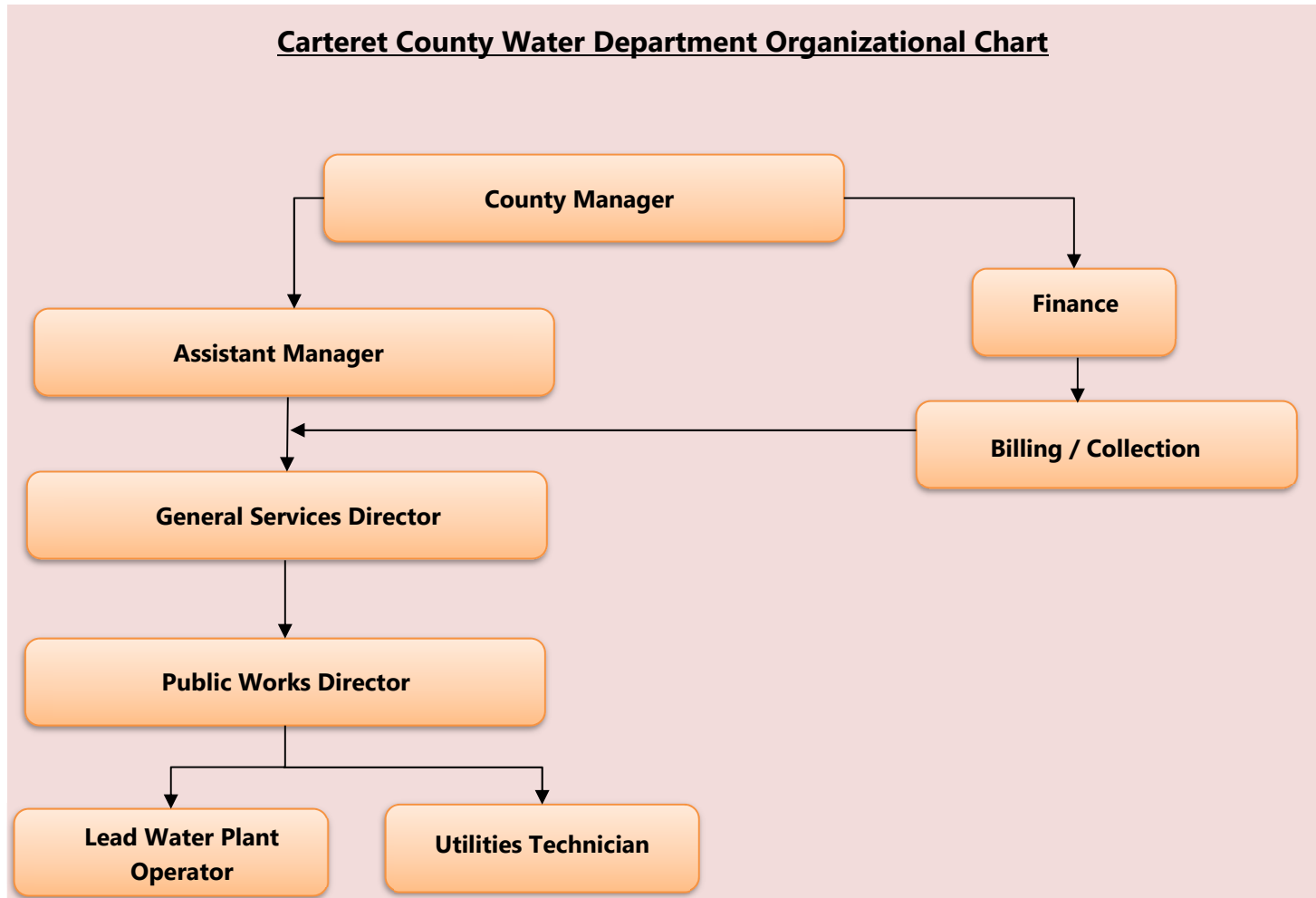


Figure 1. Carteret County Organizational Chart



## 5.0 REVENUES AND EXPENSES OF CARTERET COUNTY WATER SYSTEM

### 5.1 Water Rates

Currently, the County charges \$55.10 for every 5,000 gallons of water to customers who are billed per measurements recorded on a three-fourth (3/4) inch meter (See the County’s Water Rate Sheet in Appendix B). There is a separate water rate structure for customers served by 1, 2, and 4-inch meters. The County has also developed a specific readiness to serve rate for the Merrimon water system customers. For this study, only three-fourth (3/4) inch meter is used to conduct comparative analysis of the water rates for both the County and the Town system.

The Town charges \$35.72 for every 5,000 gallons to in-town customers using three fourth (3/4) inch meters (See the Town’s Water Rate Schedule in Appendix C). The comparative out-of-town water rate is \$58.79.

### 5.2 Outstanding Debts and Repayment Schedule

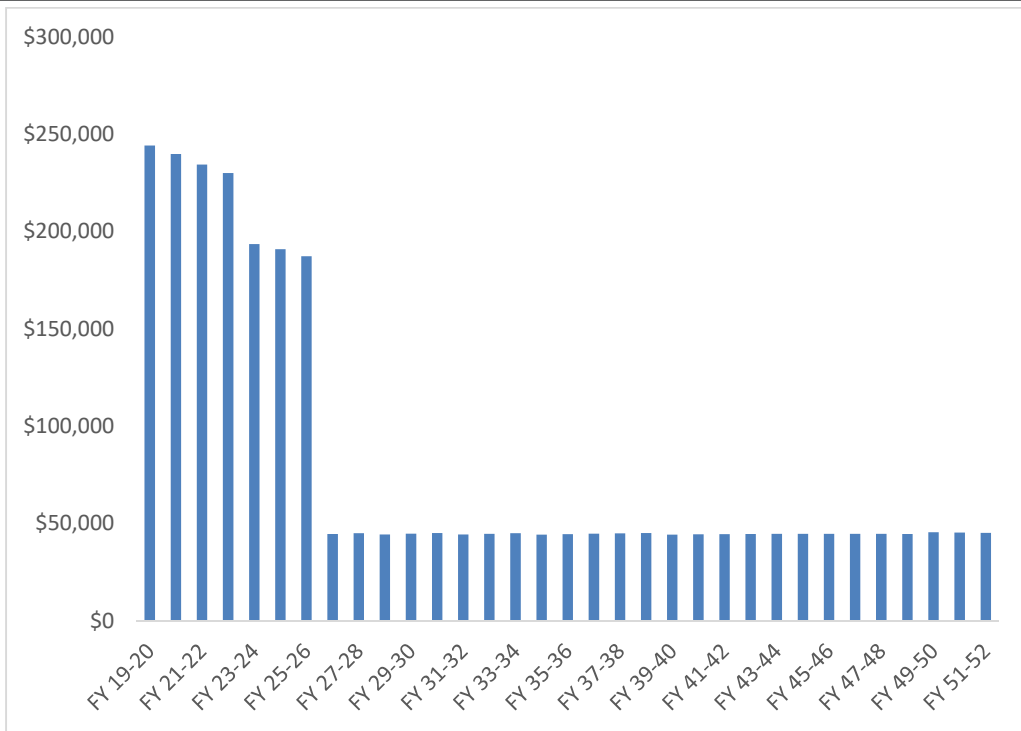
Current utility debt for the County is at \$2,066,128 with an estimated interest of \$619,319 until the loan amount is retired by the year 2052. Table 9 and Figure 2 below show the debt payment schedule for each year. The debt payment amount for each year will significantly lower after FY 2025-26 and the debt amount per year will remain relatively constant until the loans are completely retired.

**Table 9. Water Utility Debt Payment Schedule for Carteret County**

FY Year	Principal (\$)	Interest (\$)	Total Utility Debt (\$)	Years
FY 19-20	\$189,032	\$55,202	\$244,234	1
FY 20-21	\$190,032	\$49,835	\$239,867	2
FY 21-22	\$190,032	\$44,442	\$234,474	3
FY 22-23	\$191,032	\$39,047	\$230,079	4
FY 23-24	\$160,000	\$33,626	\$193,626	5
FY 24-25	\$161,000	\$29,989	\$190,989	6
FY 25-26	\$161,000	\$26,322	\$187,322	7
FY 26-27	\$22,000	\$22,660	\$44,660	8
FY 27-28	\$23,000	\$22,055	\$45,055	9
FY 28-29	\$23,000	\$21,423	\$44,423	10



FY Year	Principal (\$)	Interest (\$)	Total Utility Debt (\$)	Years
FY 29-30	\$24,000	\$20,790	\$44,790	11
FY 30-31	\$25,000	\$20,130	\$45,130	12
FY 31-32	\$25,000	\$19,443	\$44,443	13
FY 32-33	\$26,000	\$18,755	\$44,755	14
FY 33-34	\$27,000	\$18,040	\$45,040	15
FY 34-35	\$27,000	\$17,298	\$44,298	16
FY 35-36	\$28,000	\$16,555	\$44,555	17
FY 36-37	\$29,000	\$15,785	\$44,785	18
FY 37-38	\$30,000	\$14,988	\$44,988	19
FY 38-39	\$31,000	\$14,163	\$45,163	20
FY 39-40	\$31,000	\$13,310	\$44,310	21
FY 40-41	\$32,000	\$12,458	\$44,458	22
FY 41-42	\$33,000	\$11,578	\$44,578	23
FY 42-43	\$34,000	\$10,670	\$44,670	24
FY 43-44	\$35,000	\$9,735	\$44,735	25
FY 44-45	\$36,000	\$8,773	\$44,773	26
FY 45-46	\$37,000	\$7,783	\$44,783	27
FY 46-47	\$38,000	\$6,765	\$44,765	28
FY 47-48	\$39,000	\$5,720	\$44,720	29
FY 48-49	\$40,000	\$4,648	\$44,648	30
FY 49-50	\$42,000	\$3,548	\$45,548	31
FY 50-51	\$43,000	\$2,393	\$45,393	32
FY 51-52	\$44,000	\$1,210	\$45,210	33
<b>Total</b>	<b>\$2,066,128</b>	<b>\$619,139</b>	<b>\$2,685,267</b>	



**Figure 2. Carteret County Water Utility Debt Payment Schedule**

### 5.3 Revenue and Expenses

#### 5.3.1 Review of Historical Revenue and Expenses

A review of the County’s historical water system budget (including the debt services) between FY 2016 and FY 2019 listed in Table 10 shows significant water system operating expenses beyond the revenue earned. This data indicates that the County has been losing money with the water system and needed to subsidize the system with the SWTD funds to keep the system solvent. The deficit margin widened in 2018 considering the additional capital improvement expense for that year. However, for 2019, there was a marginal decline in the water system operating expense which lead to the deficit being similar to that of 2016 and 2017 respectively.



**Table 10. Budget for F2016-FY2019**

Year	Water System Revenue	Water System Operating Expense	Water System Debt Service Fee	Water System Capital Outlay	Net Income (Deficit)
2016	\$576,598	\$554,733	\$263,589	-	(\$241,724)
2017	\$584,344	\$668,215	\$259,277	-	(\$343,148)
2018	\$678,879	\$828,412	\$253,939	\$37,898	(\$441,370)
2019	\$711,732	\$726,384	\$249,600	\$25,500	(\$289,752)
Total	\$2,551,553.00	\$2,777,744.00	\$1,026,405.00	\$63,398.00	(\$1,315,994)

5.3.2 Review of FY 2020 Finances

The projected fiscal budget for the County in the year 2020 is presented in Table 11. Per projected water fund revenue and water fund expenses for FY 2020, there is a net fiscal deficit of \$162,990. This deficit may be eliminated by using revenue generated from the SWTD. Using this fund to eliminate the deficit leaves a net balance of \$14,130 that may be used for other operational expenses.

**Table 11. Projected Fiscal Budget for year 2020**

Items Description	Budget
Water Distribution System Value <sup>1</sup>	\$12,335,392
Total Utility Debt (including interests) <sup>2</sup>	\$2,685,267
Debt Pay Off Period	2051-2052
FY 2020 Debt Service Fee <sup>3</sup>	\$245,880
Water Tax District Revenue (FY 2020 Projected) <sup>4</sup>	\$423,000
Water Fund Revenue (FY 2020 Budget) <sup>4</sup>	\$710,400
Water Fund Expense (FY 2020 Budget) <sup>4</sup>	\$873,390
Water Fund Loss <sup>5</sup>	(\$162,990)
Water Tax District Revenue Balance <sup>6</sup>	\$14,130

Notes:

1. See Section 3.2 for reference
2. See Table 9 for reference
3. See Tables 9 for reference. The difference between the monetary value of \$245,880 in Table 11 compared to the fiscal value of \$244,234 in Table 9 for FY2020 may due to budgetary discretion
4. Projected FY 2020 Budget
5. Water Fund Loss/Deficit is estimated using the equation: Water Fund Revenue (\$710,400) - Water Fund Expense (\$873,390)
6. Water Tax District Revenue Balance is estimated using the equation: Water Tax District Revenue – (FY20 Debt Service Fee + Water Fund Loss)



#### 5.4 Opportunity to Eliminate Deficit

The expense in 2019 shows significant reduction over the previous years and is expected to be the norm as the County’s system does not anticipate significant capital investment in near future.

A moderate projection of 2% yearly increase in both water district tax revenue and water system expense may be adequate to run the system sustainably. Table 12 lists the yearly revenue and expenses from 2020 to 2025 using 2019 as the base year for projection. This projection shows a positive yearly cash flow. Thus, if the water system in its current condition (with a value of \$12.3 million) can be separated from the debt services, it would offer an attractive acquisition option for any utility.

**Table 12. Fiscal and Projected Budget for FY 2019-FY 2025**

Year	Water Tax District Revenue	Water System Expense	Cash Flow
2019	\$711,555	\$704,255	\$7,300
2020	\$725,786	\$718,340	\$7,446
2021	\$740,302	\$732,707	\$7,595
2022	\$755,108	\$747,361	\$7,747
2023	\$770,210	\$762,308	\$7,902
2024	\$785,614	\$777,554	\$8,060
2025	\$801,327	\$793,106	\$8,221

-- End of Section --



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## **6.0 FEASIBILITY OF MERGER**

### **6.1 Water System of Town of Beaufort**

The Town of Beaufort provides water and sewer services to its residents through established water rates that covers existing financial debts and other operational costs pertaining to these enterprise funds. The Town purchases water from the County for distribution in Eastman Creek subdivision. Currently the Town provides limited sewer service to approximately 200 customers located within County's SWTD with water purchased from the District at its existing rate. The Town has sewer force mains along NC Highway 70 serving sewer needs to East Carteret High School, also extending along NC Highway 101 serving sewer needs to Eastman's Creek and Jarrets Bay Industrial Park. This existing layout of the sewer force mains provides an opportunity to serve sewer needs within a large area of the County's SWTD which could offer an attractive condition to grow the customer base for the Town's sewer system.

Current water and sewer rate for an out-of- town customer is approximately double the rate of in-town customer. Acquiring the County's water system would increase the Town's customer base by approximately 34% with no cost for infrastructure. The potential opportunity to grow both water and sewer services within the County, at a lower rate will encourage businesses and developers to seriously consider annexation when planning growth within the merged service area.

### **6.2 Organizational Impact of Merger**

Currently, the County's PWD has three personnel who are directly responsible for water operations. The organizational responsibilities of these people have been described in Chapter 3. If a merger is executed, one and possibly two of these employees could be transferred to Town's Public Utilities Department, which now has a total of four (4) full time employees. For the purpose of this report we will calculate the Town's additional personnel needs to support the merger at service provided by a full-time and a part-time employees. The County would transfer the remaining employee to another area of need with their other operations. Based on 2020 budget, salaries for the County's 3 water staff are approximately \$330,000, including benefits. The merger could provide an opportunity to save a





minimum of half (\$165,000) that expense. With other redundancies within the budgets, this number could very well be higher.

Water billing, collection and customer service support would be completely transferred from the County to the Town. As the Town is already managing its own billing, it is assumed that no additional employee is needed for billing the merged system.

### **6.3 Key Advantages of Merger for Town of Beaufort**

There are several advantages for the Town to acquire the County's water distribution system. Some of the key benefits are listed below:

- ◆ The Town will acquire approximately \$12.3 million worth of infrastructure from the County.
- ◆ The Town will be able to operate the system largely with existing personnel plus 1.5 additional staff and equipment.
- ◆ The merged water systems would provide an opportunity not only for system growth but could also spur business and residential growth in the Town's tax base through potential annexations.
- ◆ With the merger, a new rate structure may be proposed to attract developers and business that are near the existing sewer force mains to consider annexation to avoid out-of-town rates.

### **6.4 Recommendation for Carteret County**

As shown in Table 9, the water district system has an existing debt of \$2,066,128 (principal only) that will be fully retired by the year 2052. This debt poses a liability and concern for the Town if they acquire the County's water distribution system. For a successful merger of the two water distribution systems, the following are recommended measures for the County:

- ◆ The County would maintain the SWTD for a minimum of eleven (11) years until FY 2031. The debt service for FY 2020 is \$245,800 (adopted by the County Commissioner) which will be paid using the revenue generated from special water district funds. The County should pay this same debt service fee amount for the next eleven (11) years to retire the debt. Once this existing debt is retired, the County may no longer need to maintain this special water tax district and can either eliminate the tax altogether or modify it for future needs within the district for health and safety.
- ◆ If the County transfers ownership of its water systems to the Town and agrees to continue pay \$245,880 per fiscal year toward the debt, there will be a net balance of \$177,120 (Table 11; \$423,000-\$245,880) every year, in the special water district funds. The County may use



these remaining funds to participate in capital improvement upgrades and replacements of the existing infrastructure transferred to the Town. However, capital improvements directly benefiting the Town would be subject to negotiation.

- ◆ The County would maintain the right to request upgrades to the existing system within the SWTD boundaries with mutual understanding that the cost for such an upgrade will be paid by the County for a negotiated number of years. A potential negotiated period may include the next 11 years when the County would continue to collect the SWTD revenue to pay off the debt service. It is also expected that both the Town and the County will work together to accomplish these projects through a fair assessment of capital project benefits to each entity.

### 6.5 Recommendation for Rate Modification

Existing out-of-town rates (Appendix C) established by the Town are currently seven percent (7%) higher than rates charged by the County (Appendix B). In exchange for the County’s commitment to transfer ownership of the system, participate in capital costs for a period of eleven (11) years and retire the existing debt, it is recommended that the Town adopts a readiness to serve charge for the SWTD that is the same as that for the out of town customers but keep the water use rate as that of in town customers, shown in Table 13.

**Table 13. Proposed Out of Town Water Rates**

Description	Amount (\$)
Readiness to Serve Charge <sup>1</sup>	\$20.74
Variable Rate for Water <sup>2</sup>	\$5.07/1,000 gallons
Cost for 5,000 gallons <sup>3</sup>	\$46.09

Notes:

1. Out of Town Readiness to Serve
2. Water Usage rate for in Town customers (Appendix c)
3. Cost = \$20.74 + (\$5.07\*5) = \$46.09

This rate is a recommendation only that still keeps the water rate for the current County customers below their present water rate. For this report, only the rate for 3/4 inch meters was considered; the rates for other size meters serving customers within the water district boundary can be set using similar logic.



Accepting this water rate structure in addition to acquiring the County water system infrastructure, would not limit the Town’s right to maintain another out-of-town rate for customers outside the County’s current water district boundary.

### 6.6 Financial Advantages for Town

The proposed rate structure (for 3/4-inch meters) shown in Table 13 would save County customers an estimated \$9.01 per month compared to the existing county water rate of \$55.10 per month. Though the new rate structure would reduce water sales revenues generated from the County customers, the savings in operating expense through reductions in salaries (1.5 persons instead of 3 persons) and other redundant expenses needed for operation would more than compensate for any losses. As described in Section 6.2, the merger would save nearly \$165,000 per year in salaries and benefits. Considering that saving, water system revenues and expenses for before and after merger conditions are calculated and shown in Table 14.

**Table 14. Comparison of Cash Flow - Before and After Merger**

Year	Projected Special Water District Revenue (Before Merger) <sup>1</sup>	Projected Special Water District Revenue (After Merger) <sup>2</sup>	Projected Water System Expense (Before Merger) <sup>1</sup>	Water System Expense (After Merger) <sup>3</sup>
2020	\$725,786	\$606,757	\$718,340	\$553,340
2021	\$740,302	\$618,892	\$732,707	\$567,707
2022	\$755,108	\$631,270	\$747,361	\$582,361
2023	\$770,210	\$643,896	\$762,308	\$597,308
2024	\$785,614	\$656,773	\$777,554	\$612,554
2025	\$801,327	\$669,909	\$793,106	\$628,106
<b>Total</b>	<b>\$4,578,346.51</b>	<b>\$3,871,471</b>	<b>\$3,827,121</b>	<b>\$3,3541,376</b>

Notes:

1. From Table 12
2. 83.6% of Revenue (Before Merger); 83.6% is based on Current County rate of \$55.1 and proposed rate of \$46.09 as calculated in Table 13
3. Expense (Before Merger) minus savings in staff compensation (\$165,000)

Projected after-merger revenue and expense show positive cash flow for the County system that would be acquired by the Town. The higher out-of-town rate for the acquired system would encourage



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customers and developers to strongly consider the option of annexation. The annexation would lead to lowering of utility rates and eventually increase tax base for the Town.

*-- End of Section --*



## 7.0 CONCLUSION

The merger of the two water systems will be beneficial for both the County and the Town. Acceptance of merger conditions would benefit the Town from acquiring \$12.3 million of water system assets. This would also lead to expansion of their customer base without the expenditure of major funds for years to come.

Acquiring the County's water system would require periodic upgrades and capital improvement investments, however, the capital associated with such an upgrade is not a concern due to the following reasons:

- ◆ Potential for growth in utility revenues and tax base.
- ◆ Recommended agreement for County participation in costs for a period of a minimum of eleven (11) years after transfer of the water distribution system for capital improvements to the existing system.
- ◆ County participation toward "county specific" upgrades and extensions within the district.

Considering the advantages and disadvantages of this potential merger, DAA recommends transfer of the County's water distribution system to the Town, for the sum of one dollar and other valuable considerations. The acceptance of the merger conditions by the Town will be based on refinement of these conditions and other concessions by both parties. All legal issues regarding such transfer will need to be addressed before the merger of the two water systems can be completed and executed.

*-- End of Section --*



## **8.0 REFERENCES**

Blank Depreciation Worksheet Developed for City of Dogwood Depreciation Calculation Worksheet-Government Capital Assets.

Laurel Park / Hendersonville Water System Merger Feasibility Study, Town of Laurel Park, North Carolina, June 2017.

Jordan Lake Water Supply Storage Allocation Request, City of Raleigh and Merger Partners, January 13, 2015.



## **Appendix A**

### **Carteret County Water System Maps**

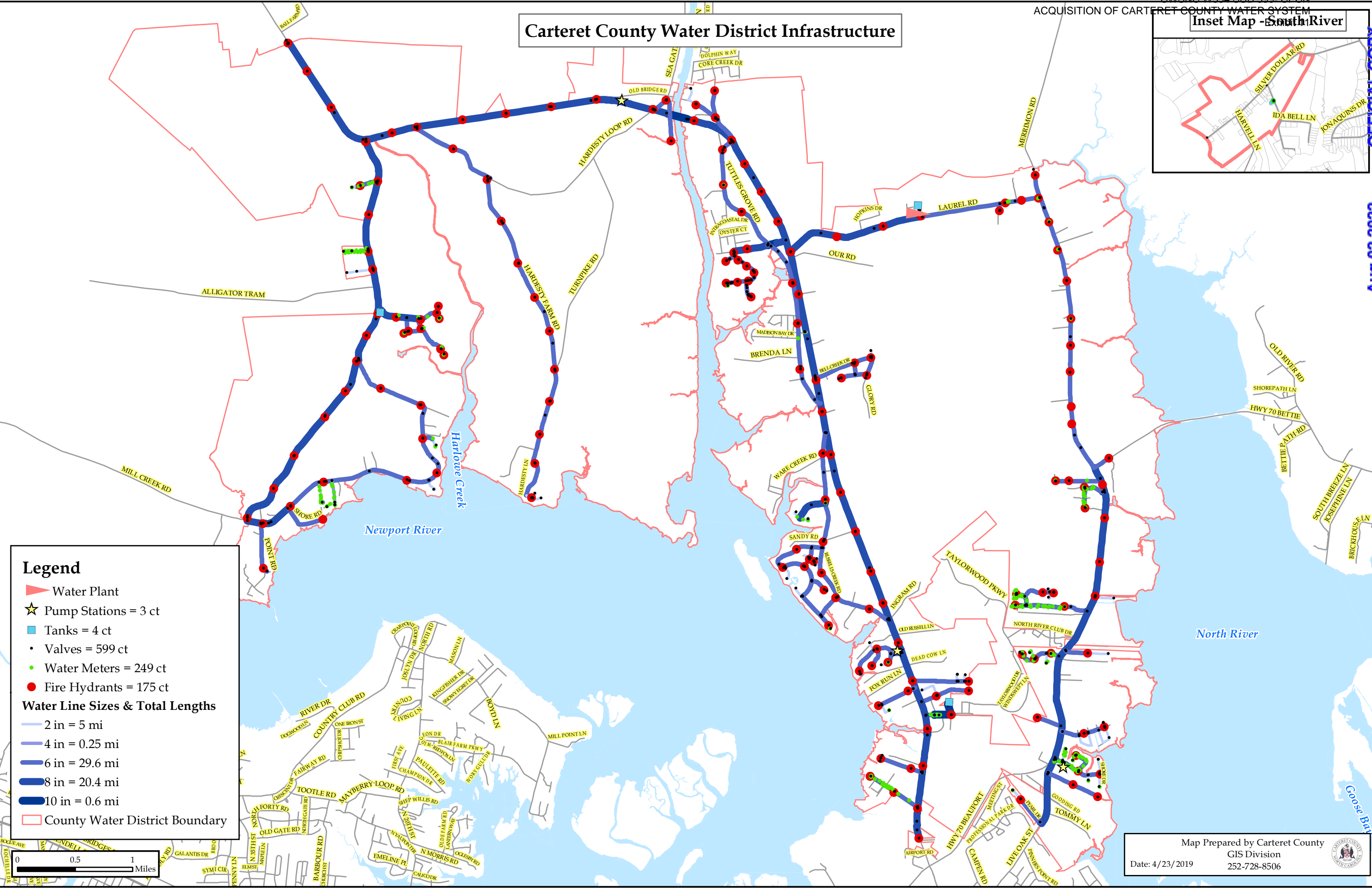
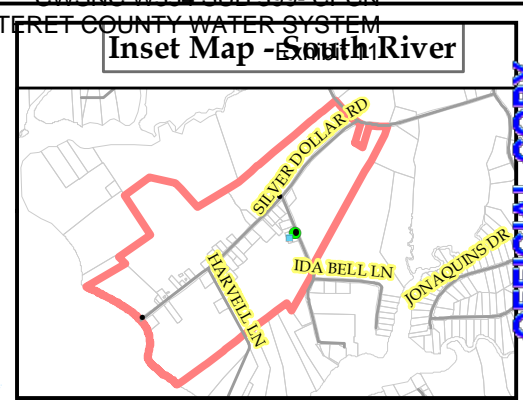
## Figure 1

### Carteret County's Water System



# Carteret County Water District Infrastructure

CWSNC W354 SUB 399 - CPCN  
ACQUISITION OF CARTERET COUNTY WATER SYSTEM



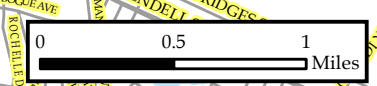
**Legend**

- Water Plant
- ★ Pump Stations = 3 ct
- Tanks = 4 ct
- Valves = 599 ct
- Water Meters = 249 ct
- Fire Hydrants = 175 ct

**Water Line Sizes & Total Lengths**

- 2 in = 5 mi
- 4 in = 0.25 mi
- 6 in = 29.6 mi
- 8 in = 20.4 mi
- 10 in = 0.6 mi

County Water District Boundary

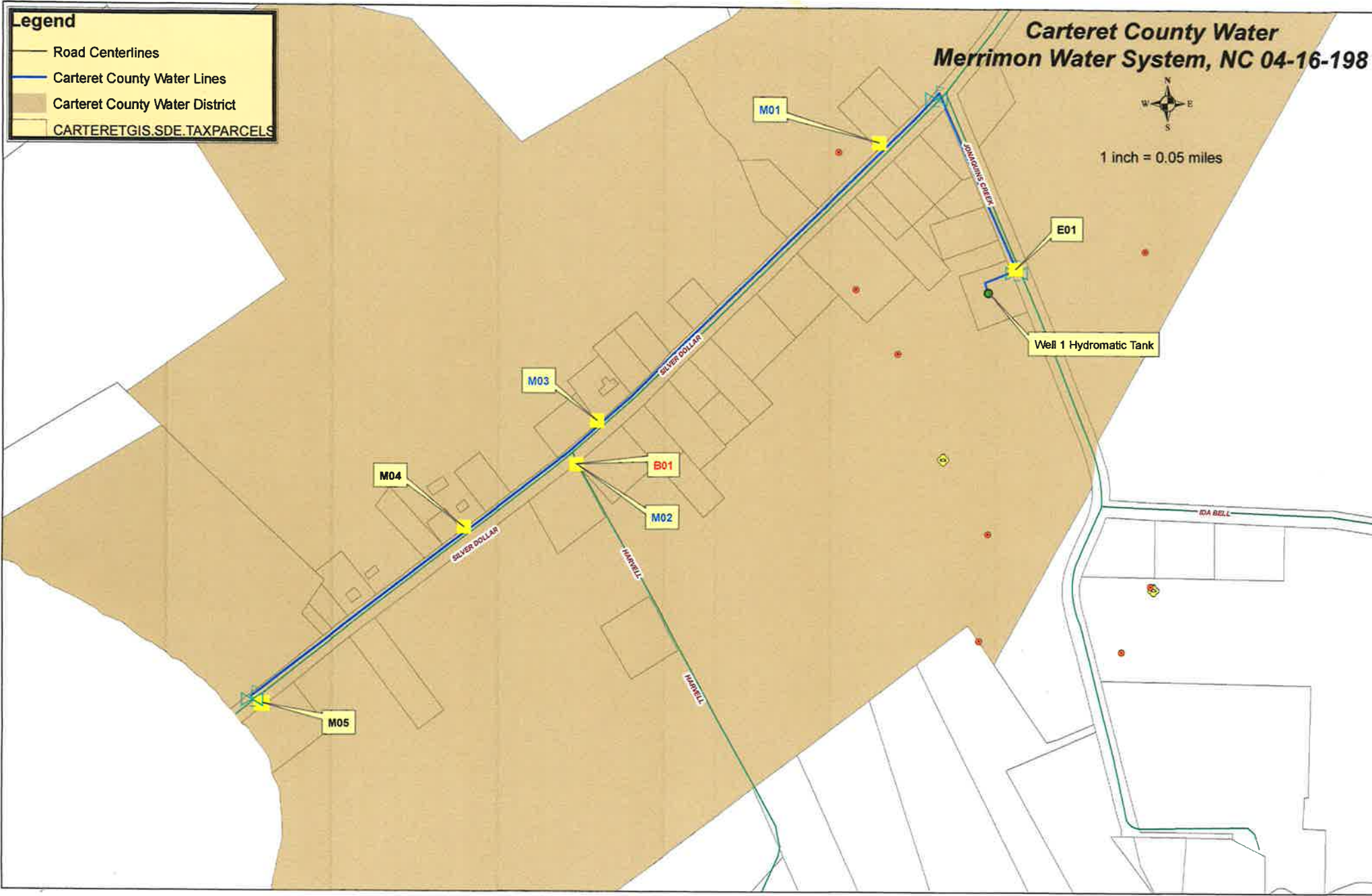


Map Prepared by Carteret County  
GIS Division  
Date: 4/23/2019 252-728-8506

OFFICIAL COPY  
AUG-02-2022

## Figure 2

### Merrimon Water System





## **Appendix B**

### **Carteret County Water Rates**

## Water Service Fee Schedule FY 2018-2019

### 3/4" Meter

Basic Charge (No Usage) Flat Fee \$27.50 / mo. Covers 1<sup>st</sup> 1,000 gals.  
 Volume Charge \$6.90 per 1,000 gals

### 1" Meter

Basic Charge (No Usage) Flat Fee \$38.00 / mo. Covers 1<sup>st</sup> 1,000 gals.  
 Volume Charge \$6.90 per 1,000 gals

### 2" Meter

Basic Charge (No Usage) Flat Fee \$110.00 / mo. Covers 1<sup>st</sup> 15,000 gals.  
 Volume Charge \$6.90 per 1,000 gals

### 4" Meter

Basic Charge (No Usage) Flat Fee \$340.00 / mo. Covers 1<sup>st</sup> 53,000 gals.  
 Volume Charge \$6.90 per 1,000 gals

### Merrimon System (3/4" Meter)

Basic Charge (No Usage) Flat Fee \$16.00 / mo. Covers 1<sup>st</sup> 1,000 gals.  
 Volume Charge \$6.90 per 1,000 gals

### Town of Beaufort (Eastman's Creek)

Basic Charge (No Usage) Flat Fee \$27.50 / mo. Covers 1<sup>st</sup> 1,000 gals.  
 Volume Charge \$6.90 per 1,000 gals

### Fire Hydrant Usage

**Hookup & Service Charge:** \$75.00/Monthly  
 Mobilization to hydrant site and employee on site during tank fill.  
 \$200.00 Deposit  
 \$8.75 per 1,000 gallons.

**Hydrant & Hydrant Meter Tampering** \$250.00 1<sup>st</sup> offense  
 \$500.00 2<sup>nd</sup> offense (and Legal Action)  
**Damage Fee – Fire Hydrant** \$2,500.00

### Fire Line – Sprinkler Fee

Size	Monthly fee
2"	\$27.50
4"	\$32.50
6"	\$75.00
8"	\$105.00

**Tap Fees**

Meter Size	Tap Fee**
3/4 "	\$1,000.00
1"	\$1,150.00
2"	Cost + 10%
4"	Cost + 10 %

\*\*Additional \$900.00 Tap Fee for any meter requiring road bore work

Any meter 2 inch or larger will be engineered by Mc David & Associates and County will charge cost of materials and installation, engineering fees and additional 10%.

**Security Deposits**

Property Owner	\$100.00
Renter/Lease holder	\$200.00

**Damage and Tampering Fees**

Tampering Fee - Meters	\$100.00
2 <sup>nd</sup> Offense (and Legal Action)	\$500.00
Damage Fee – Meters	\$135.00
Damage Fee – MXU Remote Unit	\$135.00

**Other Fees**

Non-Sufficient Check Fee	\$25.00
Bank Inspections	\$30.00
Late Charges	10% of balance
Service Fee*	\$30.00

\*At the time of reconnection the deposit on account must be equal to the deposit amount required for new accounts as of that date.

\*All accounts subject to disconnection that have not been paid by 5:00 pm on the day prior to disconnections will be charged the service fee.



## **Appendix C**

### **Town of Beaufort Water Rates**

## Water & Sewer Rates & Fees

All water and sewer taps made outside Town limits are double in-town rates shown above. Water or sewer capacity fees outside Town limits are negotiable but will not exceed 2X rates shown above.

Upgrades in service, i.e., changing from a 3/4" meter to a 1" meter, are subject to a difference in the water tap, water capacity, and sewer capacity fees.

All taps larger than 2" shall be installed at developer's cost in accordance with Town of Beaufort standards and developers shall pay a tap-on fee as shown above.

### ► Tap & System Development Fees

SIZE	TAP FEES		SIZE	SYSTEM DEVELOPMENT FEES	
	WATER	SEWER		WATER	SEWER
¾"	\$ 700	\$ 750	¾"	\$ 476	\$ 5,524
1"	800	750	1"	793	6,207
1 ½"	1,075	750	1 ½"	1,585	7,015
2"	1,375	750	2"	2,536	8,064
3"	575	750	3"	4,755	10,445
4"	625	750	4"	7,925	15,875
6"	850	750	6"	15,850	22,550
8"	1,175	750	8"	25,360	26,240



FY 2020 Budget

► **Water & Sewer Usage Rates**

**WATER USAGE RATES**

<u>TYPE</u>	<u>SIZE</u>	<u>IN TOWN</u>	<u>OUTSIDE</u>
<i>BASE</i>	¾"	\$ 10.37	\$ 20.74
	1"	17.32	37.33
	1 ½"	34.53	82.96
	2"	55.27	147.25
	3"	110.65	333.91
	4"	172.87	NA
	6"	345.63	1,327.36
<i>VARIABLE</i>	1000 gal	5.07	7.61

**SEWER USAGE RATES**

<u>TYPE</u>	<u>SIZE</u>	<u>IN TOWN</u>	<u>OUTSIDE</u>
<i>BASE</i>	¾"	\$ 21.17	\$ 42.34
	1"	35.85	70.01
	1 ½"	70.50	140.99
	2"	112.20	225.67
	3"	225.88	451.77
	4"	352.90	705.81
	6"	705.60	1,411.19
<i>VARIABLE</i>	1000 gal	16.80	33.60

► **Water & Sewer Service Charges**

**WATER & SEWER SERVICE CHARGES**

New Account Service Fee	\$20	Waived with bank draft
Application Fee	5	
<i>SECURITY DEPOSITS</i>		
3/4" meter	\$75-225,	based on credit score
1" meter	100	
1 1/2" meter	140	
2" meter	275	
Transfer Account	25	
Returned Check Fee	25	
Late Fees	10%	added to late portion
Reconnect Fee - Business Hours	25	
Reconnect Fee - After Hours	75	
After Hours Service Calls	75	
Temporary Connection (for cleaning, renovation inspection, etc.)	25	available for a 2-week period, plus water and sewer usage charges
Fire Hydrant Meters	75	mobilization, on site-employee, and 5,000 gal of water; additional \$.01/gal
Irrigation/Dock Meter	700	tap fee
Meter-Only Install	400	no new tap fee
Meter Testing	30	
Meter Tampering	100	

Carteret County, NC  
Laurel Road / Merrimon Water Systems

# UPDATE TO PRESENT VALUE OF WATER SYSTEM

DRAFT

December 2021

**Prepared by:**



**Draper Aden Associates**

Engineering ♦ Surveying ♦ Environmental Services

114 Edinburgh South Drive, Suite 200, Cary, NC 27511


Phone: 919-827-0864 – [www.daa.com](http://www.daa.com)


License No. C-0861


**DAA PN: 2102326**

**3<sup>RD</sup> PARTY REVIEW**

This Report has been subjected to technical and quality reviews by:

Ethan Gartin  12/20/2021  
Name: Signature Date  
Project Engineer

Steven R. Gandy  12/20/2021  
Name: Signature Date  
Project Manager

C. Tyrus Clayton, Jr  12/20/2021  
Name: Signature Date  
Quality Reviewer

## ***Background***

Carteret County owns and operates two groundwater wells for water supply. The first well is located just East of Sowers Drive on Laurel Road, Beaufort, NC 28516, and the extracted groundwater is treated at the onsite Laurel Road Water Treatment Plant (WTP) before is it pumped to three (3) elevated storage tanks for distribution within the community. The system serves approximately 1,226 customers. The County also owns and operates a small water system known as the Merrimon Water System, approximately 20 miles north of Laurel Rd and Merrimon Rd intersection. The water system consists of the Jonaquins Creek Well and an above-ground water storage tank, and it serves approximately 27 customers. (The attached Appendix A system map further details the layout and location of the system and components.)

Draper Aden performed a water system feasibility study in 2019 to look at a merger with a local municipality which established a monetary value for the County's water system assets, among other conclusions. This document is meant to update that number to a more current value.

## ***Assumptions / Limitations***

In order to assess the changes to the value of the water systems owned by Carteret County, the following was assumed:

- Conditions of Carteret County's water system assets stated in the 2019 Feasibility Study have not significantly changed are still an accurate depiction of current conditions.
- Book Value approach was used in estimating the value of fixed assets. Straight Line Depreciation was used to estimate depreciated value of water system assets. For the purpose of estimation, the salvage value of each system component was assumed to be zero dollars (\$0).
- The analysis done in 2019 for the projected 2020 fiscal budget is accurate to current financial conditions; an updated analysis for 2020 and 2021 budgets and expenses was not performed.
- To account for inflation since the 2019 feasibility study, several present book values which were estimated in the 2019 report have been increased by approximately 5%.

## ***Results / Conclusions***

The water system assets owned by Carteret County have an estimated value of approximately \$12.7 million. A detailed breakdown of this value can be found in Tables 1 and 2.

The remainder of the major findings and recommendations reported in the 2019 feasibility study hold true.

### Attachments:

Table 1: Estimated Book Value of Carteret County Water System

Table 2: Present Book Value of Carteret County Water System

System Map Appendix A: Figure 1 Carteret County Water System Map

**Table 1. Estimated Book Value of Carteret County Water System**

Assets	Date of Acquisition	Design Life (yrs)	Historical Cost (\$)	Total Useful life (months)	Net Amount to Be Depreciated (\$)	Accumulated Depreciation (\$)	Current Depreciation (\$)	Total Depreciation (\$)	Present Book value of Asset (\$)
Booster Pump 1	2012	50	174,284	600	174,284	26,433	3,486	29,919	144,365
Booster Pump 2	2012	50	253,111	600	253,111	38,389	5,062	43,451	209,661
Booster Pump 3	2012	50	<u>253,111</u>	600	253,111	38,389	5,062	<u>43,451</u>	<u>209,661</u>
		<b>Subtotal</b>	<b>680,507</b>				<b>Subtotal</b>	<b>116,820</b>	<b>563,686</b>
Water Tank 1	1988	50	619,263	600	619,263	391,168	12,385	403,553	215,710
Water Tank 2	2012	50	689,091	600	689,091	104,512	13,782	118,294	570,797
Water Tank 3	2012	50	<u>765,262</u>	600	765,262	116,065	15,305	<u>131,370</u>	<u>633,892</u>
		<b>Subtotal</b>	<b>2,073,616</b>				<b>Subtotal</b>	<b>653,217</b>	<b>1,420,399</b>
		<b>Total</b>	<b>2,754,123</b>				<b>Total</b>	<b>770,037</b>	<b>1,984,085</b>

**Table 2. Present Book Value of Carteret County Water System**

System No	Description	Present Book value of Asset (\$)
<b>SCADA</b>		
Booster Pump House1	SCADA System*	<b>294,000</b>
<b>Land</b>		
Laurel Road Aerial Tank	Land Property	25,428
Laurel Road Treatment Plant	Land Property	57,220
Jonaquins Creek Water House	Land Property	26,097
Aerial Tank	Land Property	130,312
Booster Pump Station-1	Land Property	40,578
Booster Pump Station-2	Land Property	35,312
Booster Pump Station-3	Land Property	34,160
Elevated Tank	Land Property	20,615
	Sub Total	<b>369,722</b>
<b>Well House</b>	Water withdrawal house*	<b>210,000</b>
<b>Jonaquins Creek Well House and Storage</b>	Merrimon Water System*	<b>420,000</b>
<b>Fire Hydrants</b>	Fire rescue purposes	<b>300,000</b>
<b>Water Treatment Plants</b>	Supply/Distribution*	<b>1,575,000</b>
<b>Piping System</b>		
2" PVC	(26,400 ft, \$10/ft)	264,000
4" PVC	(1,320 ft, \$16/ft)	21,120
6" PVC	(151,588 ft, \$24/ft)	3,638,112
6" Ductile	(4,700 ft, \$28/ft)	131,600
8 " PVC	(104,477 ft, \$28/ft)	2,925,356
8" Ductile	(3,235 ft, \$32/ft)	103,520
10" PVC	(3,168 ft, \$34/ft)	107,712
	<b>Sub Total*</b>	<b>7,550,991</b>
	<b>Total (\$)</b>	<b>10,719,713</b>

\*Value has been increased by ~5% from the 2019 feasibility study



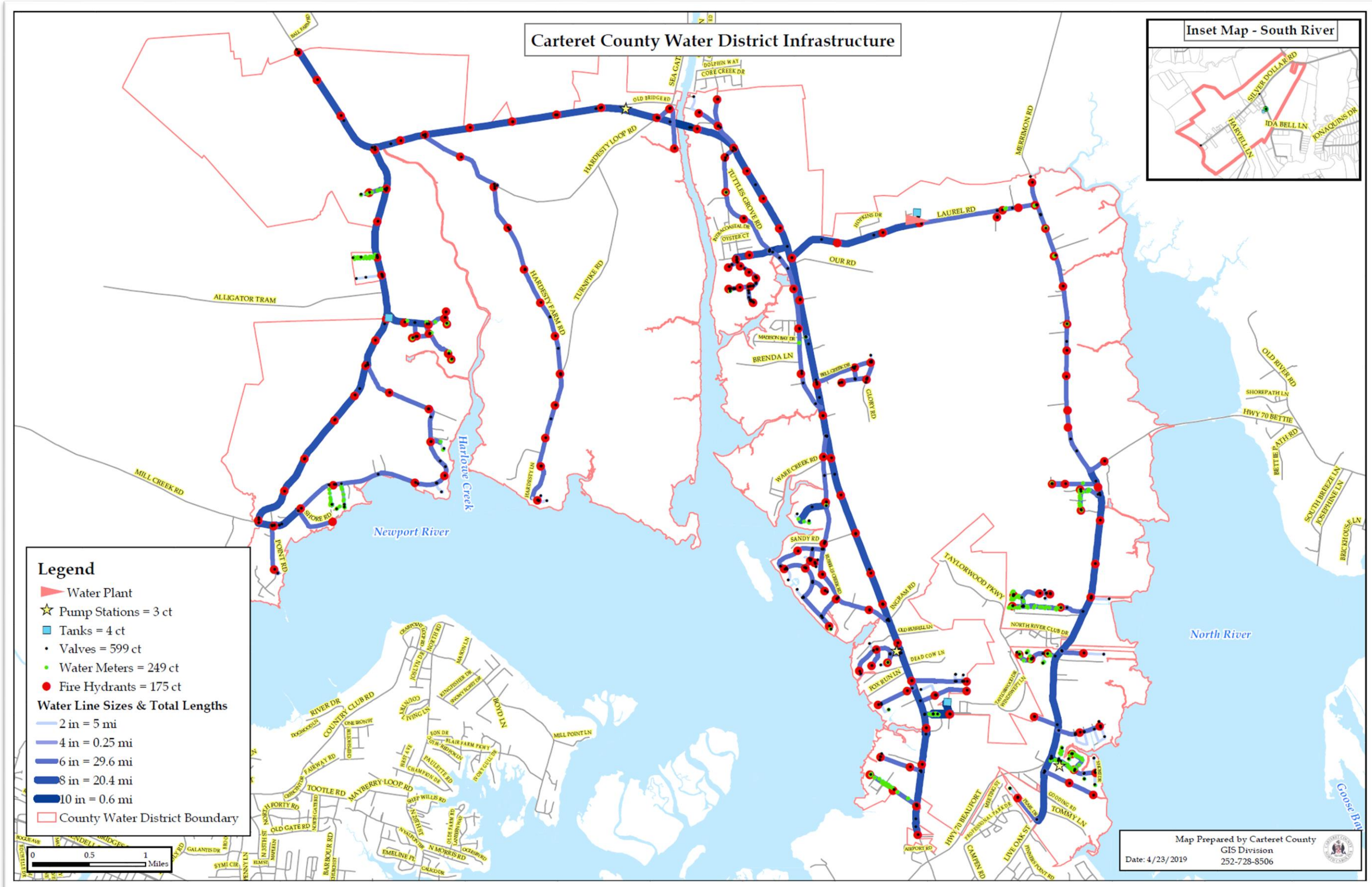


Figure 1 Carteret County Water System Map

# EXHIBIT 12

Attached unaudited financial statements for CWSNC.

Carolina Water Service, Inc. of North Carolina  
W-354, Sub 396

Year Ended: December 31, 2021  
Balance Sheet

<u>ASSETS</u>	\$	<u>LIABILITIES AND OTHER CREDITS</u>	\$
<b><u>Plant In Service</u></b>			
Water	131,877,380	<b><u>Capital Stock and Retained Earnings</u></b>	
Sewer	<u>127,830,712</u>	Common Stock and Paid In Capital	11,099,677
		Retained Earnings	44,852,317
Total	<u>259,708,092</u>	Total	<u>55,951,995</u>
<b><u>Accumulated Depreciation</u></b>			
Water	(37,328,068)	<b><u>Current and Accrued Liabilities</u></b>	
Sewer	(31,381,696)	Accounts Payable-Trade	62,104,374
		Taxes Accrued	3,465,511
Total	<u>(68,709,763)</u>	Customer Deposits	294,854
		Customer Deposits - Interest	40,051
Net Utility Plant	<u>190,998,329</u>	A/P - Assoc. Companies	4,507,008
		Deferred Revenue	20,139
		Total	<u>70,431,938</u>
<b><u>Plant Acquisition Adjustment</u></b>			
Water	(1,879,714)	<b><u>Advances In Aid of Construction</u></b>	
Sewer	<u>1,260,201</u>	Water	21,103
		Sewer	11,837
Total	<u>(619,512)</u>	Total	<u>32,940</u>
<b><u>Construction Work In Process</u></b>			
Water	3,483,470	<b><u>Contributions In Aid of Construction</u></b>	
Sewer	<u>5,520,590</u>	Water	17,979,260
		Sewer	20,617,204
Total	<u>9,004,060</u>	Total	<u>38,596,464</u>
<b><u>Current Assets</u></b>			
Cash	40,179	<b><u>Accumulated Deferred Income Tax</u></b>	
Accounts Receivable - Net	(33,883,447)	Unamortized ITC	10,215
Other Current Assets	<u>795,120</u>	Deferred Tax - Federal	5,536,311
		Deferred Tax - State	1,077,036
Total	<u>(33,048,148)</u>	Total	<u>6,623,562</u>
Deferred Charges	<u>5,302,169</u>		
<b>Total Assets</b>	<b><u><u>171,636,898</u></u></b>	<b>Total Liabilities And Other Credits</b>	<b><u><u>171,636,898</u></u></b>

Carolina Water Service, Inc. of North Carolina  
W-354, Sub 396

Year Ended: December 31, 2021  
Income Statement

CWSNC Combined Operations	Total FY 2021 Transactions
<u>Operating Revenues</u>	
Service Revenues - Water	21,434,607
Service Revenues - Sewer	18,442,503
Miscellaneous Revenues	234,514
Uncollectible Accounts	<u>(377,568)</u>
 Total Operating Revenues	 <u>39,734,056</u>
 <u>Maintenance Expenses</u>	
Salaries and Wages	5,980,246
Purchased Power	2,145,837
Purchased Water	2,764,188
Maintenance and Repair	3,644,490
Maintenance Testing	527,083
Meter Reading	253,143
Chemicals	790,878
Transportation	493,545
Operating Exp. Charged to Plant	(827,300)
Outside Services - Other	<u>5,070,404</u>
 Total	 <u>20,842,515</u>
 <u>General Expenses</u>	
Office Supplies & Other Office Exp.	421,297
Regulatory Commission Exp.	291,419
Pension & Other Benefits	1,513,604
Rent	212,810
Insurance	990,619
Office Utilities	176,732
Miscellaneous	<u>184,225</u>
 Total	 <u>3,790,706</u>
 Depreciation	7,010,781
Amortization of PAA	(96,799)
Taxes Other Than Income	751,081
Income Taxes - Federal	(334,249)
Income Taxes - State	-
Amortization of ITC	(519)
Amortization of CIAC	<u>(1,512,804)</u>
 Total	 <u>5,817,491</u>
 Total Operating Expenses	 <u>30,450,712</u>
 <u>Net Operating Income</u>	 <u>9,283,345</u>
 Other Income	90
Interest During Construction	(190,918)
Interest on Debt	<u>2,856,569</u>
 Net Income	 <u><u>6,617,604</u></u>

Notes:

# EXHIBIT 13

RESPONSE FILED AS CONFIDENTIAL

# EXHIBIT 14

Not applicable, exhibits 12 and 13 filed.