



Fox Rothschild LLP
ATTORNEYS AT LAW

434 Fayetteville Street
Suite 2800
Raleigh, NC 27601
Tel (919) 755-8700 Fax (919) 755-8800
www.foxrothschild.com

KAREN M. KEMERAIT
Direct No: 919.755.8764
Email: kkemerait@foxrothschild.com

May 1, 2020

Ms. Kimberley A. Campbell, Chief Clerk
North Carolina Utilities Commission
430 N. Salisbury Street
Raleigh, NC 27603

RE: *Application for Certificate of Public Convenience and Necessity and Registration Statement for ONSWC Chatham North, LLC in Chatham County
NCUC Docket No. W-1300 Sub 55
Application for Transfer of Public Utility Franchise and for Approval of Rates from Old North State Water Company to ONSWC- Chatham North, LLC
NCUC Docket No. W-1320 Sub 0
Application for Transfer of Public Utility Franchise of Finch Creations dba Fearrington Utilities to ONSWC - Chatham North, LLC in Chatham Co.
(Amended Purchaser NCUC Docket No. W-1320 Sub 2
Application for Transfer of Public Utility Franchise of Finch Creations dba Fearrington Utilities to ONSWC in Chatham Co. Waste Water Only
NCUC Docket No. W-661 Sub 9*

Dear Ms. Campbell:

On behalf of ONSWC - Chatham North, LLC, we herewith submit the **Supplemental Direct Testimony of Michael J. Myers** in the above-referenced consolidated dockets.

Pursuant to Commission Order dated April 16, 2020 filed in M-100, Sub 158, the Company will not deliver copies of its testimony and exhibits to the Commission.

Should you have any questions concerning this testimony or exhibits attached thereto, please do not hesitate to contact me.

Sincerely,

/s/ Karen M. Kemeraït

CC: All Parties of Record
Enclosures

**BEFORE THE
NORTH CAROLINA UTILITIES COMMISSION**

**DOCKET NO. W-1320, Sub 0
DOCKET NO. W-1300, Sub 55
DOCKET NO. W-1320, Sub 2
DOCKET NO. W-661, Sub 9**

SUPPLEMENTAL DIRECT TESTIMONY

OF

MICHAEL J. MYERS

MAY 1, 2020

1 Q. PLEASE STATE YOUR NAME, TITLE, AND BUSINESS ADDRESS.

2 A. My name is Michael J. Myers. I am the President of ONSWC – Chatham
3 North, LLC (“ONSWC – Chatham North”), and I am a Member of Old North
4 State Water Company, LLC (“ONSWC”).¹ My business address is 4700
5 Homewood Court, Suite 108, Raleigh, North Carolina 27609.

6 Q. HAVE YOU PREVIOUSLY TESTIFIED IN THESE DOCKETS?

7 A. Yes. I filed Direct Testimony in these dockets on December 4, 2019 and
8 Rebuttal Testimony in these dockets on January 7, 2020.

9 Q. WHAT IS THE PURPOSE OF YOUR SUPPLEMENTAL DIRECT
10 TESTIMONY?

11 A. The purpose of my testimony is to respond to customer service issues raised
12 by public witnesses in the January 14, 2020 hearing in Pittsboro, describe the
13 actions undertaken to implement procedures and operational modifications to
14 resolve the customer service issues, and address other outstanding issues in
15 the proceeding.

16

17 **I. INFORMATION ABOUT BRIAR CHAPEL RECLAIMED WATER**
18 **UTILITY**

19 Q. PLEASE DESCRIBE THE HISTORY OF OWNERSHIP OF THE BRIAR
20 CHAPEL RECLAIMED WATER UTILITY.

¹ To avoid confusion, ONSWC - Chatham North, LLC and Old North State Water Company, LLC are together referred to herein as “Chatham North”.

1 A. The Briar Chapel reclaimed water facility was originally planned, designed,
2 constructed and owned by Briar Chapel Utilities, LLC (“BCU”), and it was
3 granted a certificate of public convenience and necessity (“CPCN”) by the
4 North Carolina Utilities Commission (“Commission”) on December 8, 2009
5 in Docket No. W-1230, Sub 0. BCU was a wholly-owned subsidiary of
6 NNP-Briar Chapel, LLC (“NNP-Briar Chapel”). NNP- Briar Chapel, the
7 developer of the Briar Chapel Subdivision, located, constructed and installed
8 the 250,000 gallons per day (“GPD”) reclaimed water treatment plant, the
9 collection system, the upset pond, and the reclaimed water irrigation
10 facilities. In the Commission’s December 8, 2009 order granting the CPCN
11 to BCU, the Commission approved monthly, flat rates of \$45.00 per
12 residential equivalent unit (“REU”).

13 The Briar Chapel reclaimed water utility was transferred to ONSWC
14 by Commission order on April 20, 2015 in Docket Nos. W-1300, Sub 9 and
15 W-1230, Sub 1. At the time that the Briar Chapel reclaimed water utility was
16 transferred to ONSWC in April, 2015, there were approximately 514
17 customers served by the system, and the approved rates were \$42.30 per REU.

18 Since the time that ONSWC has owned the Briar Chapel reclaimed
19 water utility beginning in April, 2015, ONSWC has not requested an increase
20 in rates.

21 Envirolink, Inc. (“Envirolink”) first became the Operator for the Briar
22 Chapel reclaimed water utility when BCU owned the system, and Envirolink

1 continues to be the Operator for the system. Quality Landscapes, who was
2 involved in the construction of the original reclaimed irrigation infrastructure,
3 is responsible for the daily operations and maintenance of the reclaimed
4 irrigation system.

5 Q. PLEASE DESCRIBE THE BRIAR CHAPEL RECLAIMED WATER
6 UTILITY.

7 A. There are currently about 1,967 residential customers and 16 commercial
8 customers², equal to 78 REUs in the Briar Chapel reclaimed water utility
9 service area. The Briar Chapel service area is located west of US 15 North/US
10 501 North between Manns Chapel Road and Andrews Store Road and extends
11 on the east side of US 15 North/US 501 North between Andrews Store Road
12 and Jack Bennett Road.

13 The Briar Chapel reclaimed water utility consists of a 250,000 GPD
14 extended aeration reclaimed water treatment plant, including dual static
15 screens for grit removal, a manually cleaned bar screen, a 75,400 gallon aerated
16 flow equalization basin, two (2) 31,500 gallon anoxic chambers, two (2)
17 189,000 aeration basins, two (2) 31,500 gallon clarifiers, a 75,400 gallon
18 sludge holding basin, a 10,730 gallon contact chamber, a 16,800 gallon

² The commercial customers are: Woods Charter School, Chatham County Schools, Briar Chapel Community Association, Chatham County, Mart Enterprises, Inc./Primrose School, Bradshaw and Robinson Law, Parkway Family Dentistry, Chatham Pediatric Dentistry, Triangle Visions, Breakaway Café, Dermatology & Laser Center of Chapel Hill, Town Hall Burger & Beer, Alberello, LLC, Capp's Apizza, Edge Aveda Men, Carolina Convenient Care, Encore @ Briar Chapel, Central Carolina University

1 mudwell, two (2) 90 square foot tertiary filters, a 13,800 gallon clearwell, dual
2 banks of ultraviolet (UV) modules, and a 6,850 gallon dechlorination chamber;
3 a 3.5 million gallon five day upset pond; a 21.3 million gallon clay lined
4 effluent storage pond; and a 31.2 million gallon clay-lined effluent storage
5 pond. The reclaimed water is spray irrigated throughout the Briar Chapel
6 community after treatment. The Briar Chapel Overall Reclaimed Water Utility
7 Map is attached hereto as Confidential Exhibit 1. Pictures of the Briar Chapel
8 reclaimed water utility are attached hereto as Exhibit 2.

9 The North Carolina Department of Environmental Quality
10 ("NCDEQ"), Division of Water Resources ("DWR"), approved the reclaimed
11 water collection and treatment systems and reclaimed water spray irrigation
12 systems under permit numbers WQ0029867, WQ0028522, and WQCS00372.

13 Q. IS CHATHAM NORTH REQUESTING A RATE INCREASE FOR THE
14 BRIAR CHAPEL SYSTEM?

15 A. Our original plan did not include a rate increase for the Briar Chapel customers.
16 Even though the Briar Chapel rates have been in place for a number of years
17 (rates of \$45 per REU were approved on December 8, 2009 and a rate decrease
18 to \$42.30 per REU was approved on April 20, 2015), Chatham North is not
19 requesting that the Commission increase the currently approved rates of \$42.30
20 per REU for Briar Chapel customers.

21

1 **II. INFORMATION ABOUT THE FEARRINGTON VILLAGE**
2 **WASTEWATER SYSTEM**

3 Q. PLEASE DESCRIBE THE CURRENT OWNERSHIP OF THE
4 FEARRINGTON VILLAGE WASTEWATER SYSTEM.

5 A. Fitch Creations, Inc. d/b/a Fearrington Utilities (“Fitch Creations”) is the
6 current owner of the Fearrington Village wastewater system, and has been the
7 long-time owner of the system.

8 Q. PLEASE DESCRIBE THE FEARRINGTON VILLAGE SYSTEM.

9 A. There are currently about 1,383 residential customers and six commercial
10 customers, equal to 66 REUs in the Fearrington Village wastewater system
11 service area. The Fearrington Village service area is located east of US-15
12 North/US-501 North between Jack Bennett Road and Mt. Gilead Church Road.
13 The wastewater system includes a 270,000 GPD wastewater treatment plant,
14 approximately 15 miles (79,200 feet) of gravity sewer, three sewer pump
15 stations, and approximately 7,000 feet of force main. Pictures of the
16 Fearrington Village wastewater system are attached hereto as Exhibit 3.

17 Fitch Creations has been issued a 500,000 GPD National Pollutant
18 Discharge Elimination System (“NPDES”) Permit (Permit No. NC0043559)
19 for discharge of treated wastewater into an unnamed tributary of Bush Creek,
20 a tributary of Jordan Lake.

21 Q. IS CHATHAM NORTH REQUESTING A RATE INCREASE FOR THE
22 FEARRINGTON VILLAGE SYSTEM?

1 A. Not as part of this proceeding. The current Fearington Village monthly, flat
2 rates of \$21.67 (or \$259.97 if paid annually) were adjusted due to
3 implementation of Session Law 2013-316 (HB 998) by Commission Order on
4 December 6, 2016 in Docket Nos. W-661, Sub 8 and M-100, Sub 138. Prior
5 to adjustment of rates due to the implementation of HB 998, the Commission
6 last approved an increase for monthly, flat rates to \$23.14 (or \$277.65 if paid
7 annually) on December 22, 2009 in Docket No. W-661, Sub 6. Chatham North
8 is not requesting that the current Fearington Village monthly, flat rates of
9 \$21.67 (or \$259.97 if paid annually) be adjusted at this time.

10 Q. DOES THE FEARRINGTON VILLAGE WASTEWATER TREATMENT
11 PLANT NEED TO BE REPLACED?

12 A. Yes. The Fearington Village wastewater treatment plant is in a deteriorated
13 physical condition due to age, and needs to be replaced. The Fearington
14 Village wastewater treatment plant first two (2) 90,000 GPD wastewater
15 treatment plant phases were constructed in 1984, and the last 90,000 GPD
16 phase was constructed in 1995. The original plant is currently 35 years old,
17 and it has an expected life between 35 and 50 years. Not only will the
18 wastewater treatment plant need to be completely replaced as it is nearing the
19 end of its useful life, but the wastewater system requires material treatment
20 upgrades in order to meet upcoming nutrient management requirements for
21 discharge into the Jordan Lake watershed.

22

**III. BENEFITS OF TRANSFER OF THE BRIAR CHAPEL RECLAIMED
WATER UTILITY AND FEARRINGTON WASTEWATER SYSTEM
TO CHATHAM NORTH**

**Q. WILL THE TRANSFER OF THE BRIAR CHAPEL RECLAIMED WATER
UTILITY AND THE FEARRINGTON VILLAGE WASTEWATER
SYSTEM TO CHATHAM NORTH PROVIDE BENEFITS TO THE BRIAR
CHAPEL AND FEARRINGTON VILLAGE CUSTOMERS?**

**A. Yes. In my Direct Testimony filed on December 4, 2019, Robert G. Burgin,
Jr., P.E.'s Direct Testimony filed on December 4, 2019, and my Rebuttal
Testimony filed on January 7, 2020, we explained many of the benefits of
transfer of the systems to the Briar Chapel and Fearington Village customers.
Some of the many benefits include:**

- Chatham North will expand the existing 250,000 GPD Briar Chapel conventional biological nutrient removal reclaimed water treatment plant with a state-of-the-art MBR reclaimed water treatment plant to serve the current Briar Chapel customers, the future Briar Chapel customers upon build-out of the Briar Chapel Subdivision, the Fearington Village customers, and residents of other nearby developments. It is important to note that the existing 250,000 GPD Briar Chapel reclaimed water treatment plant must be expanded to meet the capacity needs from the buildout of the Briar Chapel Subdivision

- 1 (even if the Fearington Village wastewater system is not combined
2 with the Briar Chapel system).
- 3 • When the existing Briar Chapel reclaimed water treatment plant is
4 expanded and upgraded with a MBR reclaimed water treatment plant,
5 the existing Briar Chapel reclaimed water treatment plant will not be
6 enlarged. The reclaimed water treatment capacity will be expanded by
7 the use of membrane technology that will allow the treatment of greater
8 daily flows within the existing fenced area of the reclaimed water
9 treatment plant.
 - 10 • The expanded and upgraded MBR plant will be beneficial to the
11 environment, as the new facility will be able to more reliably meet a
12 higher standard than the current facility and will be able to meet the
13 Jordan Lake nutrient requirements and enable the Fearington Village
14 system to meet the nutrient requirements.
 - 15 • Odor control measures in the MBR plant will be enhanced and
16 improved from the measures that are available in the current Briar
17 Chapel reclaimed water treatment plant. (Additionally, as is discussed
18 below, Chatham North is proposed to enclose the reclaimed water
19 treatment plant with a greenhouse-type cover to contain odors.)
 - 20 • The existing Fearington plant will be decommissioned in favor of a lift
21 station with odor control. Thus, Fearington customers will benefit
22 from less odors and noise than the current conditions.

- 1 • Sound control measures in the new MBR reclaimed water treatment
2 facility will be enhanced and improved from the measures in the current
3 Briar Chapel reclaimed water treatment plant. All new equipment that
4 creates sound will be housed in a prefabricated metal enclosure that
5 will be specially constructed to minimize sound. The blowers will
6 contain sound attenuation measures, as they will be enclosed in sound
7 attenuation covers. The blowers with their sound attenuation covers
8 will be further placed inside metal enclosures.
- 9 • Portions of the high-quality MBR-treated effluent will continue to be
10 sprayed at the DWR-approved spray irrigation sites in Briar Chapel,
11 and portions of the MBR-treated effluent will be discharged pursuant
12 to the NPDES 500,000 GPD permit into an unnamed tributary of Bush
13 Creek, a tributary of Jordan Lake.
- 14 • The combined reclaimed water system (of the Briar Chapel reclaimed
15 water utility and the Fearington Village wastewater system) will
16 provide greater flexibility for management of the reclaimed water. The
17 combined system will reduce Briar Chapel's dependency on the spray
18 irrigation system and allow for better management of the reclaimed
19 water disposal system. It will permit portions of the reclaimed water
20 to continue to be sprayed at the DWR-approved spray irrigation sites at
21 Briar Chapel, and portions of the reclaimed water to be discharged
22 pursuant to the NPDES permit into an unnamed tributary of Bush

1 Creek, a tributary of Jordan Lake. In the event that spray irrigation
2 activities cannot be utilized due to weather events or environmental
3 conditions, Chatham North will be able to utilize the discharge permit
4 for disposal. Additionally, some future permitted spray fields in Briar
5 Chapel may not have to be utilized for spray irrigation, in particular
6 those planned for the western part of the community. Please see maps
7 of the Briar Chapel spray irrigation areas attached hereto as Exhibit 4.

- 8 • The Fearington Village wastewater treatment plant that is in a
9 deteriorated physical condition due to age will not need to be replaced
10 at great cost to Fearington Village customers because the wastewater
11 from Fearington Village will be treated at the upgraded MBR
12 reclaimed water facility in the Briar Chapel Subdivision. The
13 Fearington Village customers will receive a cost savings since a new
14 wastewater treatment plant will not have to be constructed in
15 Fearington Village.

16
17 **IV. CORRECTIVE ACTIONS TAKEN TO RESOLVE OPERATIONAL**
18 **ISSUES OF THE BRIAR CHAPEL RECLAIMED WATER UTILITY**

19 **Q. PLEASE DESCRIBE EFFORTS THAT CHATHAM NORTH HAS TAKEN**
20 **TO RESOLVE CUSTOMER SERVICE ISSUES.**

21 **A. I first want to emphasize that Chatham North and Envirolink have taken, and**
22 **continue to take, very seriously the concerns and complaints of the Briar**

1 Chapel residents that were expressed at the public hearing. We have been
2 working diligently to ensure that there is better communication and
3 transparency about our operations with the Briar Chapel community, that the
4 operational issues are fully resolved, and that the Briar Chapel Subdivision
5 remains a green and environmentally sensitive community. In short, Chatham
6 North has been working hard to regain the trust of the Briar Chapel community.

7 One of the unique features of the Briar Chapel reclaimed irrigation
8 system is the level of integration of the system within the Briar Chapel
9 community. Irrigation areas are located throughout the Briar Chapel
10 community to irrigate common areas (including natural areas), recreational
11 fields, road rights-of-way, and certain individual residents' yards and
12 landscaping. The use of reclaimed water, rather than potable water, for
13 irrigation of these areas is better for the environment and keeps the costs of
14 irrigation and grounds maintenance low for the Briar Chapel residents. The
15 reclaimed water system is one of the reasons that the Briar Chapel community
16 is the vibrant green community, even during periods of drought.

17 Chatham North has taken the following actions to address concerns
18 raised with the Briar Chapel reclaimed water utility.

19

20 Improved Communication and Transparency with the Briar Chapel Residents

21 Open dialogue with the Briar Chapel residents and transparency are of
22 utmost importance to Chatham North. In order to improve the communication

1 between Chatham North and the Briar Chapel community, Chatham North
2 launched a website (www.oldnorthstatewater.com) as a conduit of pertinent
3 information, and has been sending regular newsletters and emails to the Briar
4 Chapel residents about time-sensitive matters and to respond to questions. For
5 example, the website provides the contact information for Envirolink so that
6 residents can contact Envirolink in the event of an issue or repair matter that
7 requires customer service. The website contains a list of “FAQs”, along with
8 a resource section that is regularly updated with newsletters, maps, and the
9 reclaimed irrigation start-up procedure. To date, Chatham North has
10 forwarded six newsletters and numerous emails that contain important
11 information to the Briar Chapel community. Chatham North is committed to
12 ensuring that the open dialogue and frequent dissemination of information
13 remains ongoing. The newsletters that have already been provided to the
14 community are attached hereto as Exhibits 5, 6, 7, 8, 9, 10, and 11.

15 In addition to the website, newsletters, and emails, Chatham North has
16 recently been engaging with the Briar Chapel Homeowners Association
17 (“HOA”) to respond to requests for information and other requests of the HOA.
18 For instance, Chatham North has worked with the HOA to agree to parameters
19 in excess of NCDEQ requirements for the testing and analysis of the reclaimed
20 water and the locations for the testing. The Water Sampling and Analysis
21 protocol that Chatham North has agreed to is attached hereto as Exhibit 12.
22 Also, the Briar Chapel HOA asked that Chatham North ensure that any

1 “overspray” of the reclaimed irrigation system on impervious surfaces be
2 corrected. Chatham North is conducting further adjustment of the reclaimed
3 irrigation system along road shoulders, sidewalks, and other impervious
4 surface on HOA property. At a cost of about \$12,000, those spray heads will
5 be reduced from 180 degree radii to 130 degree radii.

6 To provide practical information about the operations of the Briar
7 Chapel reclaimed water utility, Chatham North had proposed “walking tours”
8 with small groups of interested Briar Chapel residents of the facility. However,
9 due to social distancing required by the State’s response to the COVID-19
10 crisis, Chatham North had to postpone the planned in-person tours.

11 We have begun discussions with the Briar Chapel HOA to determine
12 if there are periods of the day when irrigation of these areas will not disrupt
13 pedestrian activities or other activities within the community. While
14 regulation recognizes the potential for spraying on impervious areas under
15 15A NCAC 02U .0113 (3) and (4), it is Chatham North’s intent to address
16 public concerns and limit irrigation to times that eliminate the potential for
17 disruption to the residents activities.

18 Chatham North continues to respond to emails and calls from Briar
19 Chapel residents.

20
21 Odors from the Briar Chapel Reclaimed Water Treatment Plant. Chatham
22 North is committed to addressing odors from the reclaimed water treatment

1 plant. Chatham North has obtained an engineering and cost estimate
2 proposal for constructing a commercial greenhouse-type enclosure around the
3 reclaimed water treatment plant that will contain all odors from the plant.
4 The greenhouse-type cover would cover the reclaimed water treatment plant,
5 the aerated flow equalization basin, screens, sludge holding tanks, anoxic
6 chamber, and aeration basins. The structure will contain louvered air inlets
7 that will allow air to enter the interior, but not to escape from the enclosure.
8 An air scrubber will be attached to the structure to pull air from the scrubber
9 before it is exhausted. The estimated cost to cover the reclaimed water
10 treatment plant is \$1,535,000. Chatham North will proceed with construction
11 of the greenhouse-type enclosure upon authorization from the Commission.
12 The engineering and cost estimate proposal is attached hereto as Exhibit 13.
13 In addition to requesting authorization to enclose the reclaimed water
14 treatment plant to contain plant odors, Chatham North has already
15 implemented a number of measures to address odors from the reclaimed
16 water treatment plant and the collection system. As a practical matter, the
17 Briar Chapel reclaimed water treatment plant has the potential to release
18 odors during operational or maintenance circumstances, such as when solids
19 and screening removal activities are being conducted. Since the time that
20 Chatham North acquired the Briar Chapel reclaimed water utility from BCU
21 in 2015, Chatham North has initiated several measures to mitigate odors in
22 the reclaimed water treatment plant and the collection system. Specifically,

1 over time, Chatham North equipped the lift stations within the Briar Chapel
2 reclaimed water utility with odor control chemical feed systems so that all
3 currently operating lift stations now include odor control measures. Also,
4 Bioxide, a calcium nitrate solution, is injected into the reclaimed water at
5 each lift station in order to inhibit the formation of hydrogen sulfide (that
6 causes a “rotten egg” odor). Chatham North annually spends approximately
7 \$100,000 in Bioxide for the Briar Chapel reclaimed water utility. Moreover,
8 in recent years, Chatham North worked with the Briar Chapel developer to
9 cover the equalization basin and headworks at the reclaimed water treatment
10 plant and to install an air scrubbing system. The air in these areas is scrubbed
11 using carbon filtration prior to being released to the atmosphere. The
12 investment by Chatham North to complete this project was approximately
13 \$350,000.

14 In addition, the planned upgrade of the existing Briar Chapel
15 treatment facility to a MBR facility will include additional odor control
16 measures designed to minimize the impact of the MBR facility to the Briar
17 Chapel community.

18
19 Odors from the Reclaimed Water Irrigation System. The Briar Chapel
20 reclaimed water irrigation system has been in operation for approximately ten
21 years. Over this ten-year period, until recently there has not been significant
22 odor complaints about the reclaimed water utility. However, there was a

1 significant increase in odor-related issues during the irrigation season during
2 the summer of 2019. Chatham North has evaluated the reason for the
3 increase in odors and has implemented measures to satisfactorily address
4 those odors and prevent the situation from occurring again.

5 In order for hydrogen sulfide ("rotten egg" smell) related odors to be
6 generated, three conditions must exist: anaerobic conditions (no oxygen),
7 presence of organic matter, and presence of microorganisms. As background,
8 the central reclaimed water holding pond that is 25 feet deep and part of the
9 reclaimed water system is often home to ducks and geese and duckweed can
10 grow in the pond, which creates a good environment for odor generation.

11 Results from the effluent monitoring data demonstrate that effluent from the
12 reclaimed water treatment plant does not appear to be a significant source of
13 organic material in the holding pond; however, organic material from ducks,
14 geese, and vegetation (such as duckweed and leaves) are sources of organic
15 material in the reclaimed water. Organic material, coupled with anaerobic
16 conditions at the bottom of the pond, can result in hydrogen sulfide
17 generation (the "rotten egg" smell). The intake for the irrigation system is
18 located at the bottom of the pond, which creates the potential for the
19 irrigation water to contain hydrogen sulfide and consequently a rotten egg
20 odor. Since the water from the open reclaimed water pond is gravity fed to a
21 pump, naturally occurring organic matter (like leaves and dirt) have entered
22 the reclaimed water lines over time.

1 The reclaimed water ponds at Briar Chapel are equipped with aeration
2 units (*i.e.*, “bubblers”) in order to help maintain oxygen throughout the depth
3 of the reclaimed water ponds and prevent the formation of hydrogen sulfide.
4 In the summer of 2019, the aerations units in the primary holding pond that is
5 located closest to the reclaimed water treatment plant malfunctioned and
6 remained out of service for several weeks. This resulted in insufficient
7 oxygen being introduced into the pond and the formation of hydrogen sulfide
8 in the reclaimed water that was distributed throughout the community via the
9 spray irrigation system. To prevent this situation from occurring again,
10 additional back-up replacement bubblers have been purchased and can be
11 installed, immediately, if necessary, and an additional, redundant bubbler
12 system is being installed prior to system-wide operation of the reclaimed
13 water irrigation system.

14 There are two operational practices to address issues with odor in a
15 reclaimed water irrigation system: first, a thorough flushing of water in the
16 pipes that deliver the reclaimed irrigation water; and second, adding small
17 amounts of chlorine to the reclaimed water. However, until recently, the
18 flushing of water from reclaimed water irrigation systems was prohibited by
19 NCDEQ, which prevented Chatham North from being able to flush the water
20 and accumulated organic material in the pipes. The pipes are also a good
21 environment for odor generation if they are not chlorinated and flushed.
22 Since flushing activities had not previously been allowed in North Carolina,

1 debris accumulation in the reclaimed water lines was inevitable. Now that
2 North Carolina regulations have been changed to allow the flushing of
3 reclaimed water systems, Chatham North was able to obtain approval from
4 NCDEQ for a thorough flushing of the water that has remained in the lines
5 over the fall and winter (and perhaps for much longer periods of time since
6 the reclaimed water system has been in service for nearly a decade). The
7 presence of stagnant water in the lines is shown in one of the recent videos
8 captured by the residents. The video shows that the water has a brown tint
9 appearance, which is likely organic matter that entered the lines from the
10 pond that had not previously been flushed through the lines.

11 During the flushing phase of the reclaimed water irrigation system,
12 Chatham North performed initial sampling of the reclaimed water to establish
13 a baseline of the quality of the reclaimed water. Thorough testing of various
14 areas of the reclaimed water system will occur as the system is brought on-
15 line in May, 2020 to ensure that the system is operating properly.

16 Since the testing of the water reclamation irrigation system has been
17 completed, Chatham North is in the process of extensively flushing the
18 irrigation system to rid it of organic materials that can cause odors. The Briar
19 Chapel reclaimed water system is comprised of about thirty miles of
20 irrigation lines, and thus, a significant amount of stagnant water and debris
21 will be flushed through the system. Since the water that is being flushed
22 contains organic materials and some odors, Chatham North's protocol was to

1 perform the initial flushing of the system in areas away from homes and in
2 the late evenings and early morning hours to avoid as much inconvenience as
3 possible from lingering odors to the Briar Chapel residents.

4 After the reclaimed water irrigation system has been flushed,
5 Chatham North will begin operating of the irrigation system. In advance of
6 the start-up of the irrigation system, Chatham North shared with the Briar
7 Chapel community the following schedule for the start-up of the reclaimed
8 water irrigation system. Chatham North advised as to the following
9 schedule:

- 10 • April 20 - 24: The sprinklers along Catullo Run in the wooded areas
11 will be full operation with the completion of the flushing of the
12 system in this area.
- 13 • Week of April 27 – May 1: The Briar Chapel Parkway will be
14 flushed from east of Pokeberry Creek Bridge to US 15-501.
15 Immediately following the flushing of the system in this area, the
16 reclaimed water irrigation will begin.
- 17 • Week of May 4 – 8: The Briar Chapel Parkway will be flushed from
18 west of Pokeberry Creek Bridge to Great Ridge Parkway North and
19 South. Immediately following the flushing of the system in this area,
20 the reclaimed water irrigation will begin.
- 21 • Week of May 11-15: Great Ridge Parkway North and South and west
22 of Briar Chapel Parkway toward the reclaimed water treatment plant

1 will be flushed. Immediately following the flushing of the system in
2 this area, the reclaimed water irrigation will begin.

3 • Week of May 18 – 22: Ancillary areas, including Margaret Pollard
4 Middle School, will be flushed. Immediately following the flushing
5 of the system in this area, the reclaimed water irrigation will begin.

6 To further address remaining odors in the reclaimed water, Chatham
7 North has requested approval from NCDEQ to add small amounts of chlorine
8 (less than or equal to the amount found in drinking water) to the reclaimed
9 water irrigation system. The chlorine levels in the reclaimed irrigation water
10 will be lower than allowable potable water levels and well below
11 recommended levels in community pools. The effect of adding small
12 amounts of chlorine to the reclaimed water will be to minimize the odor in
13 the water by inhibiting the growth of naturally occurring bacteria in the lines
14 from the irrigation holding pond. Unfortunately, when the Briar Chapel
15 developer designed and constructed the reclaimed water irrigation system, it
16 was not designed or equipped with a system of chlorination. In January
17 2020, Chatham North submitted an application to NCDEQ for approval of
18 the chlorine addition, but NCDEQ has not yet approved the use of chlorine
19 for the system. It is our understanding that residents have voiced concerns to
20 NCDEQ about injecting chlorine into the reclaimed irrigation water and as a
21 result, the request—while typically a procedural matter—has been elevated to
22 NCDEQ management for a decision. Chatham North will chlorinate the

1 reclaimed water according to permit parameters as soon as NCDEQ issues
2 the permit. In NCDEQ's Summary of Site Visit letter dated April 22, 2020,
3 Scott Vinson, Regional Supervisor for the Raleigh Regional Office, stated
4 that DWR's Central Office, Non-discharge permitting group has not yet
5 finalized its review of the permit application request to add a sodium
6 hypochlorite injection system. Mr. Vinson noted that during the site visit
7 DWR staff observed the sodium hypochlorite storage tote and pump that have
8 not been connected to the reclaimed water irrigation system. (Chatham North
9 will connect the sodium hypochlorite storage tote and pump once NCDEQ
10 approves the permit.) NCDEQ's April 22, 2020 letter is attached hereto as
11 Exhibit 14.

12 In Mr. Vinson's April 22, 2020 Summary of Site Visit letter, Mr.
13 Vinson stated that three members of the Raleigh Regional Office conducted a
14 follow-up inspection of the Briar Chapel reclaimed water utility. Mr. Vinson
15 stated:

16 Because of the large number of odor complaints residents have
17 communicated to the Raleigh Regional Office, DWR staff
18 drove around the portions of the community closest to the
19 treatment facility. Particular attention was paid to the Encore
20 Community. No unusual odors related to the treatment facility
21 were noted at the time of the site visit. ONSWC staff

1 explained that a hydrogen sulfide sensor had been installed at
2 the treatment plant headworks.

3 Mr. Vinson also noted that the inspection found that issues related to the
4 January 10, 2020 and February 4, 2020 inspections had been addressed.

5

6 Irrigation System Operation. The Briar Chapel reclaimed water irrigation
7 system is comprised of two holding ponds, a weather station, one pump
8 station, distribution piping ranging in size from 18 inches to 2 inches, 48
9 irrigation controllers (each controller can control between 12 to 96 zones and
10 each zone has between 18 to 20 spray heads), and 7,500 irrigation nozzles.
11 The system is controlled by a SCADA system that controls the start and
12 stopping of each zone in accordance with a programmed irrigation schedule.
13 The irrigation system is programmed to shut down when the site receives
14 one-quarter inch of rain, as measured by the weather station. A full-time,
15 dedicated staff of three technicians with three to four maintenance staff
16 members inspect each irrigation zone and nozzle and repair the system as
17 required.

18 The volume and duration of irrigation is based on an area's soil
19 capacity. We know that the Briar Chapel grounds generally consist of poorly
20 draining soils, and there are areas that may be subject to saturation from
21 groundwater, stormwater, and irrigation water. The following areas are the
22 most susceptible to saturation:

- 1 • The area across from Pollard Middle School
- 2 • Great Meadows area
- 3 • Boulder Park area
- 4 • Briar Commons area

5 In addition to these areas, some of the Briar Chapel residents noted that irrigation
6 has been sprayed on paved areas. We agree that oversaturation and run-off of
7 reclaimed irrigation should not occur. Three factors, however, have impacted the
8 irrigation spray areas and have been addressed:

9 1. Wind drift. Wind can cause spray irrigation to drift onto
10 paved and recreational areas. Some Briar Chapel HOA recreational areas,
11 including pickleball and tennis courts, were constructed by the developer or
12 HOA within Chatham North spray irrigation easement areas and the
13 irrigation nozzles are within inches of paved areas. Chatham North
14 recognizes that, because it is a function of weather conditions, complete
15 elimination of wind drift of some spray is certainly difficult. Consequently,
16 Chatham North has turned off these irrigation zones next to the pickleball and
17 tennis courts. In other areas, the circumference of the spray nozzles has been
18 reduced to minimize wind drift.

19 2. Malfunctioning irrigation nozzles. A computer motherboard
20 for the irrigation operating system failed during the summer of 2018, which

1 prevented the system from shutting off during rain events. This faulty
2 motherboard was discovered during inspection and was replaced.

3 3. Damaged irrigation nozzles. Irrigation nozzles might be
4 damaged during mowing activities or other events. The dedicated staff
5 inspects each irrigation nozzle on a monthly for damage and proper
6 operation. A service order is created for any damage or improper operation
7 noted and repairs are made. As noted above, Chatham North is conducting
8 an extensive analysis of the 7,500 irrigation nozzles during the sampling,
9 flushing, and start-up of the reclaimed water irrigation system.

10 As also noted above, the Briar Chapel HOA expressed concerns about
11 any further possible “overspray” of the reclaimed irrigation system on
12 impervious surfaces. Chatham North therefore is performing further
13 adjustments of the spray irrigation nozzles at a cost of about \$12,000 to ensure
14 that “overspray” will not occur. Chatham North will continue its efforts --
15 using technology, procedures, and inspection by its employees -- to ensure that
16 no areas are oversaturated or over sprayed because of improper irrigation.

17
18 Sanitary Sewer Overflows. As previously stated, Chatham North acquired
19 the Briar Chapel reclaimed water utility from BCU in 2015. In operating the
20 system, Chatham North identified design issues on the force main line where
21 previous breaks had occurred, and Chatham North therefore completed an
22 initial upgrade to this line in 2018. In 2018, there was one break of the force

1 main line, which occurred during the period that Chatham North was
2 conducting the initial upgrade to the line. Subsequently, in early 2019, the
3 line began experiencing additional issues. Chatham North again initiated an
4 investigation by putting pressure data loggers on the system, and learned that
5 pressure waves in the line were likely causing the line to break. Chatham
6 North therefore retained the services of a transient pressure wave specialist to
7 study the results of the extensive pressure monitoring and modeling of this
8 force main line near Great Ridge Parkway. The modeling indicated that
9 water column separation caused negative pressure which PVC pipe cannot
10 withstand. As a result, Chatham North installed three additional air relief
11 vales in the force main line near Great Ridge Parkway in September, 2019.

12 In the same vicinity of the previous force main breaks, there was a
13 Sanitary Sewer Overflow (SSO) in early 2020 related to electrical control
14 failures at Lift Station A. The SSO resulted from overflows at a manhole
15 upstream from Lift Station A. As a result, Chatham North has lowered the
16 lift station's high-water alarm float to activate the dialer as soon as possible
17 when the pumps initiate so that the Operator will have sufficient time to
18 respond, began converting the existing telemetry system to full-time SCADA
19 monitoring, and assessed potential electrical issues in the lift station control
20 panel.

21 On April 16, 2020, the Briar Chapel system experienced another SSO
22 due to a force main break in the Hill Creek area. Chatham North believes the

1 pipe experienced fatigue from the aforementioned transient pressure waves
2 and became weaker as a result. Therefore, Chatham North is in the process
3 of performing emergency repair of the force main to ensure that there will be
4 no further SSOs along this force main line. By email and newsletter,
5 Chatham North advised the Briar Chapel community of the force main break
6 in the Hill Creek area and that emergency repair of the force main would be
7 taking place. The repair will replace approximately 1,000 linear feet of PVC
8 pipe (that has bell and spigot joints every 20 feet) with HDPE pipe fused so
9 there are no joints. This repair is scheduled to begin the week beginning May
10 4, 2020 and is anticipated to last no more than two weeks.

11
12 Sound from the Reclaimed Water Treatment Plant. Several residents
13 expressed concern at the public hearing about noise from the operation of the
14 Briar Chapel reclaimed water treatment plant. Prior to the public hearing,
15 Chatham North was unaware of any problem related to noise at the reclaimed
16 water treatment plant. In response, we will be conducting noise
17 measurements at the property line of the Briar Chapel facility. In general, the
18 decibel levels typical for operations of a reclaimed water treatment plant are
19 well below all applicable noise level regulations.

20 Furthermore, once the upgraded MBR reclaimed water treatment
21 plant is constructed, sound control measures in the new MBR facility will be
22 enhanced and improved from the measures in the current Briar Chapel

1 reclaimed water treatment plant. All new equipment that creates sound will
2 be housed in a prefabricated metal enclosure that will be specially
3 constructed to minimize sound. The blowers will contain sound attenuation
4 measures, as they will be enclosed in sound attenuation covers. The blowers
5 with their sound attenuation covers will be further placed inside metal
6 enclosures.

7
8 Construction Clearing of Trees. Unfortunately, one of Chatham North's
9 construction contractors inadvertently disturbed Briar Chapel common areas,
10 including riparian areas, outside the approved limits of construction. In
11 response to this issue, Chatham North required the contractor to restore, at no
12 cost to Chatham North or the Briar Chapel HOA, the disturbed riparian areas
13 and pay for additional disturbed area acreage under the sedimentation and
14 erosion control permit. In addition, in response to this mistake and other
15 concerns regarding the contractor's unauthorized removal of trees, Chatham
16 North offered the Briar Chapel Community Association ("HOA") \$40,000
17 for planting of vegetative screening and future maintenance of trees.

18 Chatham North has not yet made this payment to the Briar Chapel HOA due
19 to an issue as to the limits of future liability. There was also a concern raised
20 regarding the non-disparagement language that was proposed in the
21 settlement agreement. It is true that Chatham North proposed this language
22 be included. This was considered a standard provision in most settlement

1 agreements of this nature and in no way was intended to prohibit customers
2 from voicing concerns during these proceedings. Chatham North continues
3 to want to resolve this issue.

4 On January 8, 2020, Chatham County officials conducted a site
5 inspection regarding compliance with the erosion control plan. The
6 contractor is aware of the problems (and has committed) to doing all
7 maintenance requirements noted during that meeting (*e.g.*, any necessary re-
8 seeding). The contractor has confirmed that it will be inspecting and
9 replacing any of the vegetation that does not survive the winter per
10 remediation plans it agreed to with the County. Chatham North has worked
11 with, and will continue to work with, Chatham County, the Briar Chapel
12 HOA, and the contractor to make sure that the contractor completes
13 remediation and revegetation work.

14 Additionally, there were concerns raised regarding Chatham North
15 maintaining a relationship with the contractor after the Notices of Violations,
16 penalties, and other compliance related matters had occurred. Chatham
17 North agrees that the relationship with the contractor warranted serious
18 evaluation, and those evaluations were in fact conducted. Chatham North's
19 decision to permit the contractor to perform the contract was based on the
20 following factors:

- 21
- Cost of changing contractors in the middle of a project;

- 1 • Impacts to the construction schedule and potential liability to
- 2 Chatham North's contract amendment with NNP-Briar
- 3 Chapel; and
- 4 • Our ability to withhold payment on the existing contractor to
- 5 correct performance issues.

6 As a result of these issues, Chatham North decided that the best course of
7 action was to permit the contractor to finish the contract and then withhold
8 payment until corrective actions were completed.

9

10 **V. RESOLUTION OF ISSUES RELATED TO THE FEARRINGTON**
11 **VILLAGE AGREEMENTS**

12 **Q. DID THE PUBLIC STAFF EXPRESS CONCERNS ABOUT THE ASSET**
13 **PURCHASE AGREEMENT BETWEEN CHATHAM NORTH AND FITCH**
14 **CREATIONS ("FEARRINGTON VILLAGE APA")?**

15 **A. Yes. In Public Staff Witness Charles Junis' testimony filed in these dockets**
16 **on December 20, 2019, Public Staff Witness Junis objected to certain future**
17 **payment items in the Fearington Village APA that might constitute additional**
18 **purchase price considerations for the Fearington Village system. Specifically,**
19 **Public Staff Junis objected to: the Lease Agreement that provides for rental**
20 **payments of \$3,250 per month for parcels where three pump stations and the**
21 **reclaimed water treatment plant are located; Fearington Village APA**
22 **paragraph 1.8 that provides that no connection fees will be paid for the property**

1 that Fitch Creations subsequently acquires outside of Fearington Village;
2 Fearington Village APA paragraph 1.9 that provides that Chatham North will
3 not request authority to increase the rates for a period of at least twenty-four
4 months after closing (the Public Staff objects to this provision because it might
5 prevent the Fearington Village and Briar Chapel customers' rates from
6 moving toward or becoming a uniform rate in Chatham North's next general
7 rate case or a subsequent proceeding); Fearington Village APA paragraph 2.1
8 that provides that Chatham North will not charge connection fees for
9 connections served with reclaimed water treatment capacity reserved for
10 property acquired by Fitch Creations subsequent to the effective date of the
11 Fearington Village APA; Fearington Village APA paragraph 2.2 that
12 provides that Fitch Creations must approve the provision of wastewater utility
13 service by Chatham North to other developers in the Consent Area, which is
14 outside but near the existing Fearington Village service area; Fearington
15 Village APA paragraph 2.2 that provides that Chatham North shall provide
16 payment to Fitch Creations of \$2,500 for each connection in the Consent Area;
17 and Fearington Village APA paragraph 2.2 that provides that Chatham North
18 shall provide payment to Fitch Creations of \$2,500 for each connection in the
19 Extended Service Area.

20 Q. HAVE CHATHAM NORTH AND FITCH CREATIONS ADDRESSED THE
21 PUBLIC STAFF'S CONCERNS ABOUT THE FEARRINGTON VILLAGE
22 APA?

1 A. Yes. Chatham North and Fitch Creations entered into a Second Amended
2 Asset Purchase Agreement (“Farrington Village Amended APA”) on April
3 22, 2002 and agreed to an Amended Lease Agreement that were filed with the
4 Commission on April 29, 2020. The Farrington Village Amended APA and
5 the Amended Lease Agreement address the Public Staff’s concerns listed in
6 Public Staff Witness Junis’ testimony.

7 In regard to the Public Staff’s concerns that the lease contains
8 additional purchase price considerations, Chatham North and Fitch Creations
9 agreed to an Amended Lease Agreement in which the rental payments of
10 \$3,250 per month have been removed from lease.

11 In regard to the Public Staff’s concerns about the Farrington Village
12 APA, Chatham North and Fitch Creations entered into the Farrington Village
13 Amended APA that includes the following revisions:

- 14 • The Farrington Village Amended APA deletes the provision
15 (paragraph 1.8 of the previous Farrington Village APA) that requires
16 that no connection fees will be paid for property that Fitch Creations
17 subsequently acquires outside Farrington Village.
- 18 • The Farrington Village Amended APA deletes the provision
19 (paragraph 1.9 of the previous Farrington Village APA) that provides
20 that Chatham North will not request authority to increase the rates for
21 a period of at least twenty-four months after closing. Instead, the
22 Farrington Village Amended APA paragraph 1.8 provides that

1 Chatham North may request authority from the Commission to increase
2 rates for wastewater service.

3 • The Fearington Village Amended APA deletes the provision
4 (paragraph 2.1 of the previous Fearington Village APA) that provides
5 that Chatham North will not charge connection fees for connections
6 served with wastewater treatment capacity reserved for property
7 acquired by Fitch Creations subsequent to the effective date of the
8 Fearington Village APA.

9 • The Fearington Village Amended APA deletes the provision
10 (paragraph 2.2 of the previous Fearington Village APA) that requires
11 Chatham North to provide payment to Fitch Creations of \$2,500 for
12 each connection in the Consent Area.

13 • The Fearington Village Amended APA deletes the provision
14 (paragraph 2.2 of the previous Fearington Village APA) that requires
15 Chatham North to provide payment to Fitch Creations of \$2,500 for
16 each connection in the Extended Service Area.

17 • The Fearington Village Amended APA retains paragraph 2.2 and
18 requires Fitch Creations to approve the provision of wastewater utility
19 service by Chatham North to other developers in the Consent Area.

20

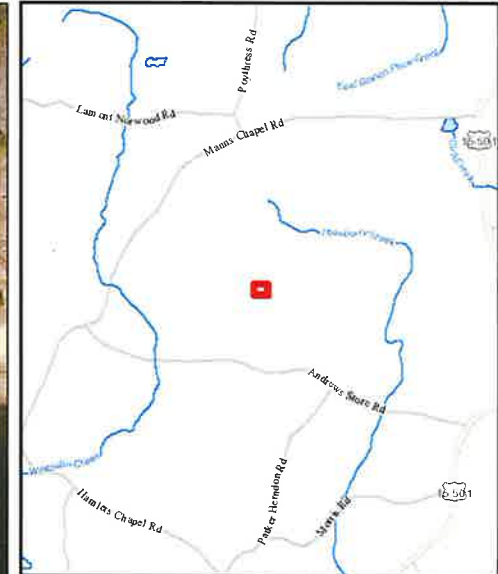
21 Q. DOES THIS COMPLETE YOUR SUPPLEMENTAL DIRECT
22 TESTIMONY?

1 A. Yes. We thank the Commission for its attention to this matter.

CONFIDENTIAL

CONFIDENTIAL

Chatham County Tax Map



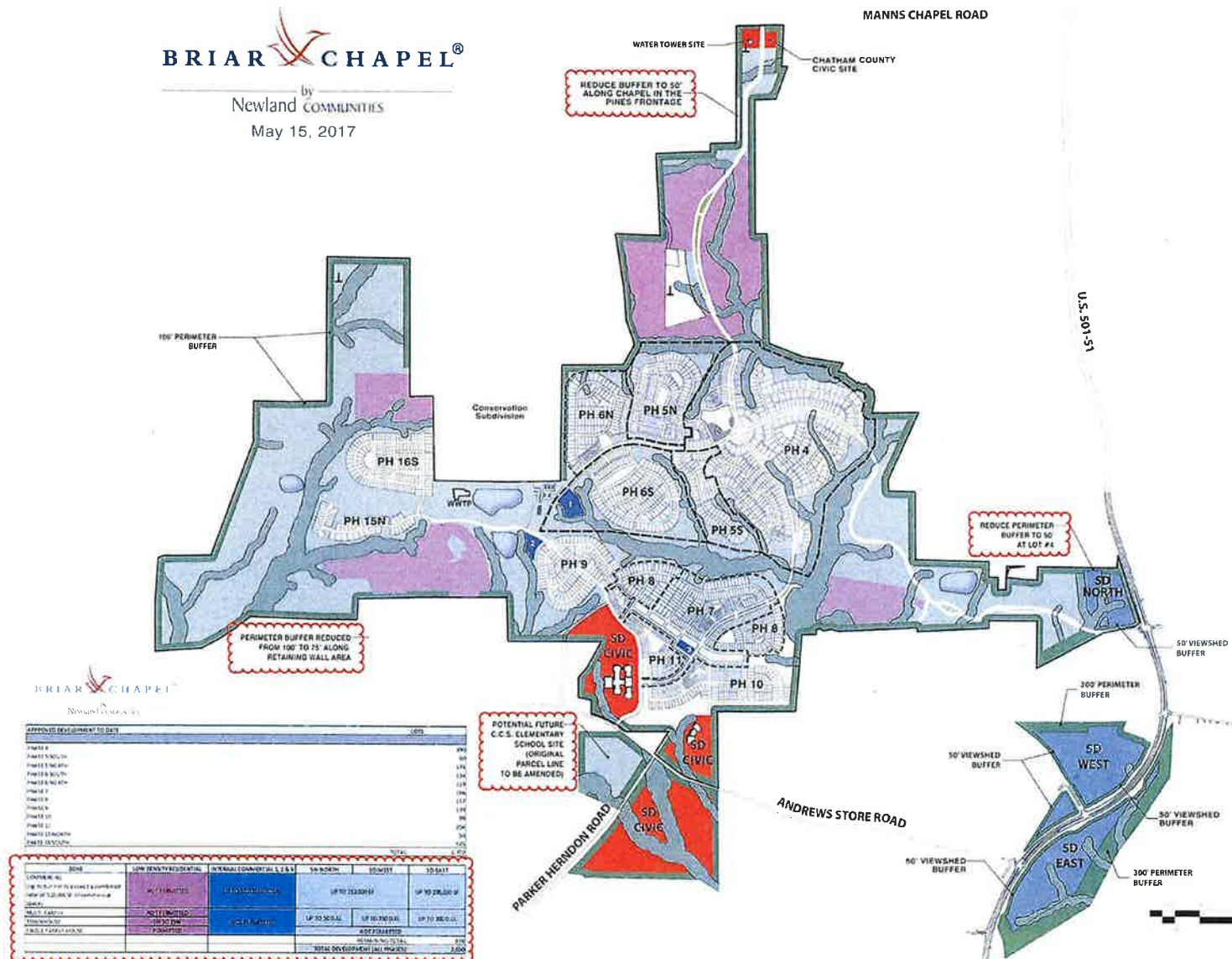
0 0.0175 0.035 m



Service Layer Credits: Chatham
County, Chatham County Tax
Department

Date: 4/27/2020
Time: 4:31:09 PM

BRIAR CHAPEL®
by
Newland COMMUNITIES
May 15, 2017

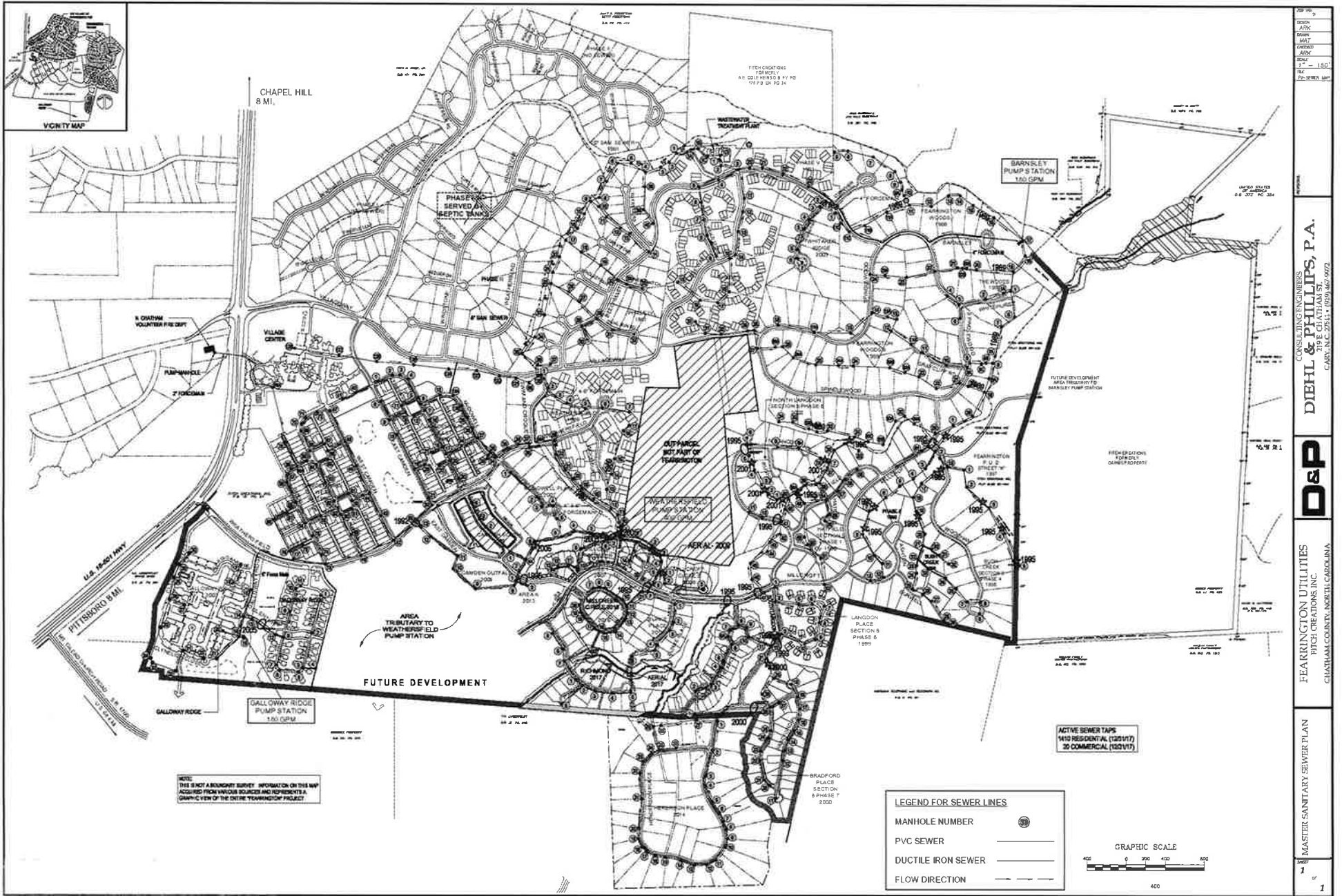


















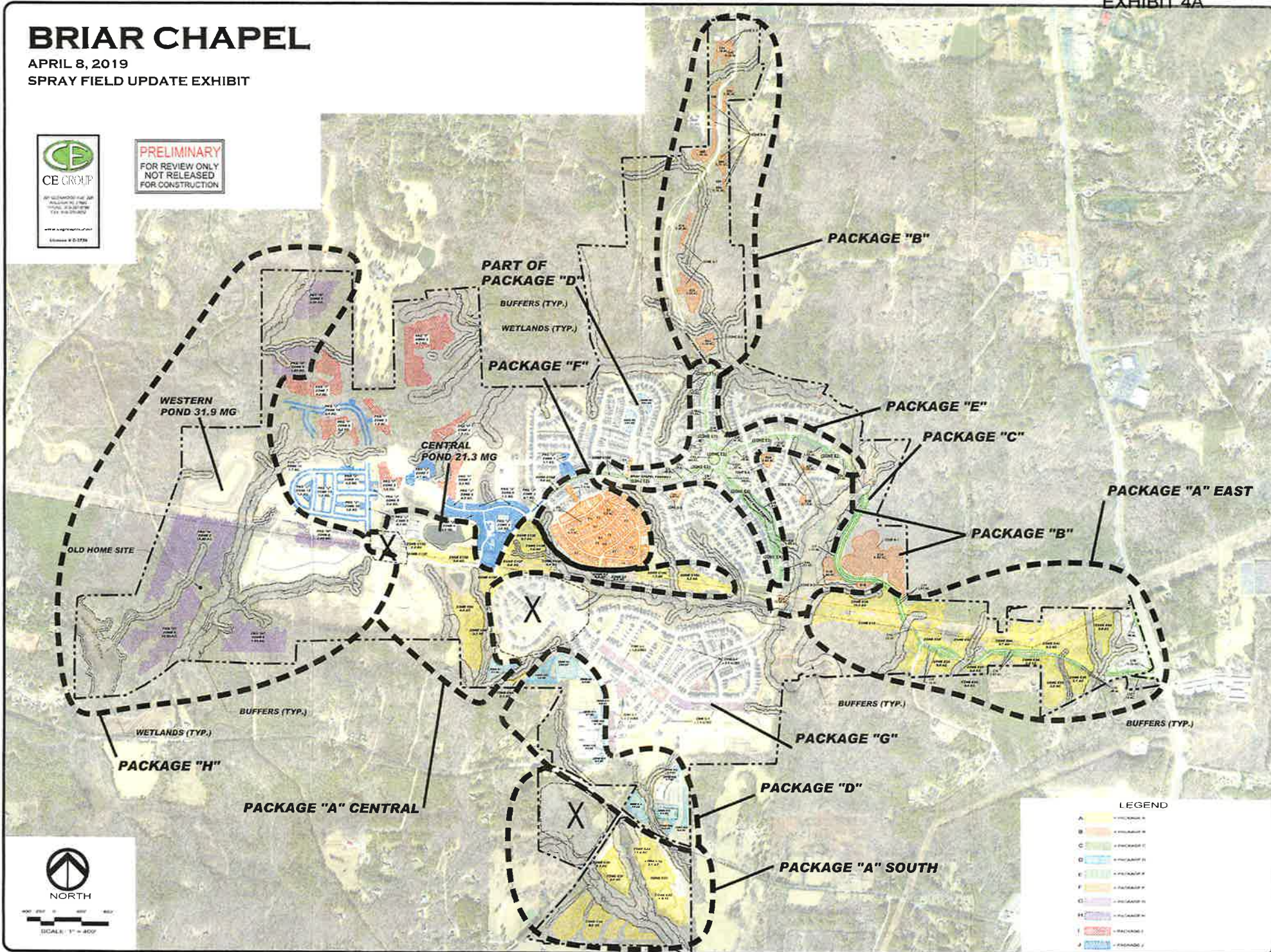


BRIAR CHAPEL

APRIL 8, 2019
SPRAY FIELD UPDATE EXHIBIT



PRELIMINARY
FOR REVIEW ONLY
NOT RELEASED
FOR CONSTRUCTION



SCALE: 1" = 400'



STI

DESIGNS

— LARRY EASTAUGH & DORIS
CHERRILL North Carolina 28006
Phone: (704) 592-8873

Subscribe

Past Issues

Trans



Customers,

Open dialogue, transparency and feedback are of paramount importance to us. In response to requests for more frequent updates, Old North State Water Company has designed a newsletter to keep our customers informed and share pertinent information about the water reclamation processes in Briar Chapel.

You'll begin to see regular emails from us about the state of your water reclamation system, improvements we are making, maintenance we are undertaking, and answers to questions you've posed to us via our new website at www.OldNorthStateWater.com.

In an attempt to reach everyone who may be interested in receiving these messages, we have added all subscribing customers to this email list. Please note that you can easily unsubscribe at any time by clicking on the "Unsubscribe from this list" link in the footer below.

We hope you find this information both informative and helpful – we look forward to answering your questions and addressing your concerns. Thank you for your time and for the opportunity to serve you.

Answers to Your Questions

Each email will address questions we've received from you and that we've added to www.OldNorthStateWater.com. Here are a few we've received this past week:

Why does the water from the irrigation lines sometimes smell bad?

- Once the water is treated and cleaned at the water reclamation facility, it is stored in a pond onsite. That pond has naturally occurring organisms such as algae and leaves. Water for the irrigation system is pumped from this pond throughout the community for reclaimed irrigation. The organic material from the leaves and algae can accumulate in the lines. In addition, since the water comes from a pond, there are naturally occurring bacteria present. When the organic material and bacteria combine in the lines, the bacteria breaks down the organic matter in a low oxygen environment, and creates hydrogen sulfide, or the rotten egg smell.
- Old North State has determined a process to flush the lines which should minimize the rotten egg, or strong odor from the irrigation water. Until late 2019, this flushing process was not permitted by the State of North Carolina.
- In addition, Old North State is obtaining approval to add small amounts of chlorine (which until late 2019 was also prohibited by State Policy) to the irrigation water. This should inhibit the growth of naturally occurring bacteria from the irrigation pond in the lines, further preventing the strong smell in the water.

Is the smelly water dangerous?

- No, although the water smells, the water is not harmful for irrigation purposes. Of course, there is naturally occurring bacteria in the water and it is not approved for drinking. As stated above, this smelly water problem is being fixed and should not continue to be an issue going forward. The amount of chlorine in the irrigation water will be equal to or less than the chlorine concentration in drinking water.

Is the chlorine you are using dangerous to people, animals or even vegetation?

- No. The chlorine concentration will be equal to or less than the chlorine concentration in drinking water.

Why did irrigation lines spray brown water in March?

- Old North State Water is in the process of implementing the solutions to the smelly water, now allowed by State Environmental Policy. During

testing of the system, a programming glitch allowed the activation of one of the irrigation zones. Nevertheless, aside from the strong odor, there was no health risk to the residents.

Want to change how you receive these emails?

You can [update your preferences](#) or [unsubscribe from this list](#).

Subscribe

Past Issues

Trans



Customers,

I wanted to take a minute to share with you some of the things we are doing right now, during the evolving COVID-19 situation to ensure the preparedness of your water reclamation system.

First off, operations and maintenance continue as if there is no pandemic. Still, we require all employees to follow the CDC's guidelines as they pertain to social distance and hand washing hygiene.

To be mindful of social distancing, we are postponing the in-person tours designed to inform customers about how our system works. Instead, we are exploring the near-term possibility of a virtual option. We hope to offer in-person tours once it is safe to do so.

There are some general maintenance guidelines you can follow to ensure proper operation during this unprecedented time.

For example, across the country, we are hearing about homeowners flushing cleaning wipes and other inappropriate paper products down the toilet. It is very important only to flush waste and toilet paper down the toilets to avoid clogs and back-ups. Here's a [great story](#) from NPR with some helpful tips. It also answers the important question of whether you can catch COVID-19 from reclaimed water (You can't).

Please do not hesitate to follow up with any questions you have. We're all in

this together!

Old North State Water Company

Answers to Your Questions

Does water reclamation pose a threat to pets and other animals

- ONSWC's water reclamation processes and procedures comply with - and in some cases go beyond - state standards, and as such, in most circumstances do not pose a threat to pets or other animals. Recently, a neighbor reported coming across a dead rabbit near a manhole cover and expressed concern that the animal had died due to a sewage spill or the clean up that followed. This is unlikely. The manhole in question was the site of a sewage spill several years ago. At that time, ONSWC contractors used lime to help absorb the spill, as is standard practice. ONSWC then scooped up and safely disposed of the lime. The lime stained the manhole in question, but this is not an active clean up site. Had this area been an active clean up site, we would cordon it off until repaired.
- As far as the reclaimed water in irrigation and its impact on pets and animals, we point you to the Town of Cary's [FAQ](#) as it relates to the safety of reclaimed water for pets and animals.

Want to change how you receive these emails?

You can [update your preferences](#) or [unsubscribe from this list](#).



Customers,

The days are getting warmer and while we may not be able to participate in all of our normal spring activities and recreation, we are still so fortunate to live and work in a gorgeous community like Briar Chapel.

To maintain and support that beauty, it is time once again to begin our reclaimed water irrigation of the many common areas, landscaping, and irrigated homes.

We wanted to take a minute to share with you information on how your reclaimed water irrigation system works as well as on planned improvements.

First, as a refresher, the Briar Chapel reclaimed water irrigation system is just as it sounds. Because Briar Chapel is not part of a municipal system, we take the treated water product of our system and use it to irrigate our beautiful neighborhood. We don't tap potable water sources for irrigation; a feature that is better for our environment. This environmental practice also keeps the costs of irrigation and grounds maintenance very low for Briar Chapel residents.

Now, here's what you can expect in the coming days/weeks:

1. For the first time, we've gained approval to begin a thorough flushing of the system this year. We will continue flushing the system of water that has remained in the lines over the fall/winter or for longer as the pipes have been in service for nearly a decade.

2. Here's why this is important: as water is gravity fed to a pump from the open reclaimed water pond, naturally occurring organic matter like leaves and dirt have entered the lines over time. Since flushing was previously not allowed, the debris accumulation was inevitable. Now that state regulations have changed and allow for flushing, this problem should be greatly reduced moving forward.
3. Since this water can be unpleasant, we will flush the system at the points furthest away from homes and in the late evening and early morning hours. There are more than 30 miles of irrigation lines in Briar Chapel so there is a good amount of stagnant water and debris to flush.
4. During system flushing, the near decade of debris in the lines like dirt and leaves may cause valves to stick which could inadvertently activate zones and sprinkler heads. Irrigation staff will monitor the system accordingly during the flushing to address these issues as they arise.
5. We are now seeking approval to add small amounts of chlorine (less than or equal to the amount in your drinking water) to ensure that the water coming through the sprinklers does not have that unpleasant rotten egg smell which is caused by the breakdown of algae and other debris in a low oxygen environment. We applied for approval of chlorine addition on January 10, 2020. Hopefully we will receive approval from the state prior to the start up of the reclaimed water irrigation system, but as of the date of this newsletter we have not yet received that approval.
6. In the past, we've received questions about the over irrigation of certain areas of Briar Chapel. We've noted those areas to the BCCA Board and they will be irrigated on an as needed basis and once the BCCA Board fixes some drainage concerns. We're hoping to work collaboratively with the BCCA Board to address concerns regarding irrigation. The areas that will no longer be irrigated until feedback from the BCCA Board is received include:
 1. Briar Chapel Parkway medians from the bridge westward to Granite Mill
 2. Boulder Park area (common spaces and residences)
 3. Great Meadow Park area
 4. Briar Commons area
 5. Pollard Middle School area

In our commitment to full transparency with our customers, we have posted the complete Reclaimed Irrigation Start-up Procedures document provided to the

BCCA Board on 3/25/2020 to our website under a new page called [Resources](#) which will serve as a posting place for important information like this document.

We know this is an aspect of the water reclamation system that the entire community experiences, so please feel free to follow-up with any questions you may have [here](#).

Thank you!

A brief clarification on the BCCA Board's recent note:

We've been trying to meet with the BCCA Board since 2019 regarding better collaboration for the BCCA as it relates to the Utility's operation. Recently, we tried to initiate a series of walking tours of the system specifically for our customers.

The BCCA agreed to allow these tours provided we applied for the permit as required by the BCCA, but those logistics coincided almost simultaneously with the onset of the COVID-19 pandemic. As we were getting ready to advertise these to all members of the community via this newsletter, social distancing regulations and limitations on group meetings were put in place at all levels.

We've put those tours on hold for now and look forward to getting together with all who want to attend when it is once again safe to gather. You'll see more about that via this newsletter.

Want to change how you receive these emails?

You can [update your preferences](#) or [unsubscribe from this list](#).

[Subscribe](#)[Past Issues](#)[Trans](#)

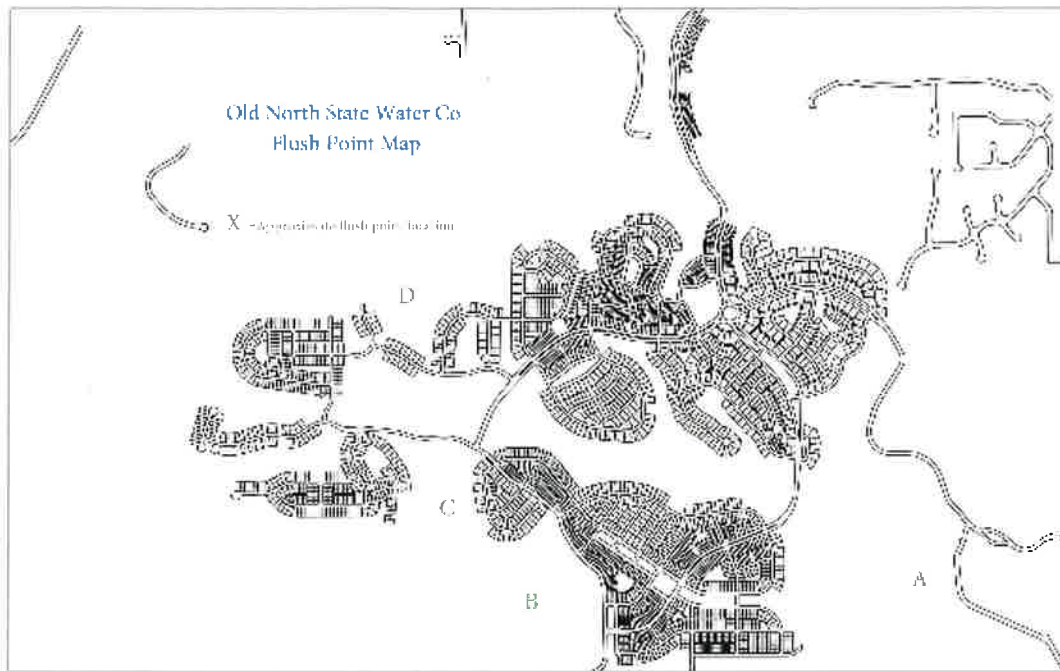
Customers,

Early this week, we worked with our contractor to test and walk through the flushing protocol. Wednesday night, we began flushing the irrigation system in earnest as we prepare to move the system online with the warming temperatures.

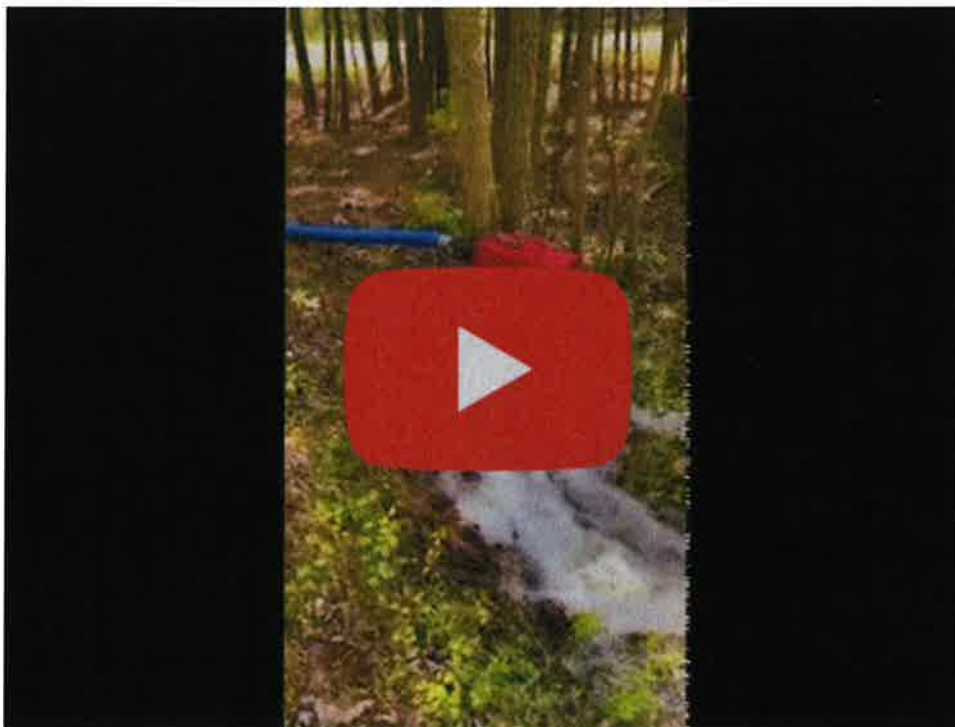
Even with testing and practice, some zones could be accidentally activated by the debris we're flushing as described in our last email. Our team is ready to respond to any of those issues as they arise. Please call 252-235-4900 to report an issue.

Unfortunately, at this time, we have not received approval from the Department of Environmental Quality to add those trace amounts of chlorine (less than or equal to the amount in drinking water) to aid in the flushing process and diminish odor. We hope to receive that approval for future flushes.

Flushing will occur at the following locations:



You can take a look at a video of our flushing below. We'll try to upload more videos throughout the process.



Regarding the force main leak along an open area between Serenity Hill Circle cul-de-sac and the dog park, the repair work has been completed. Our staff will check on the area today and remove the barrier. We will keep you posted if anything significantly changes regarding that schedule.

We're working now on a protocol to alert the community when these repairs are necessary and when they are complete. We look forward to sharing that with you in the very near future.

Happy spring holidays to you and yours!

Want to change how you receive these emails?

You can [update your preferences](#) or [unsubscribe from this list](#).



Customers,

Our irrigation flushing efforts have been successful this past week. We will begin performing some additional testing and flushing in other areas as we work to bring the system online.

Starting later this week, we will turn on the irrigation system along Briar Chapel Parkway so we can adjust these zones as needed.

Following these adjustments, these areas will begin operations to aid in the flushing process.

We're alerting you because while these areas are away from homes, they are more highly trafficked than our previous flushing zones, and odors may be present from the operation of these areas during the initial flushing operations. This is in large part because we have still not received approval from the Department of Environmental Quality to add those small amounts of chlorine (less than or equal to the amount found in drinking water) that we've previously described.

To mitigate the experience, we will target the late evening to overnight hours for the vast majority of the operation to flush these wooded areas.

We may need to operate these zones intermittently during daylight hours to inspect the system and spray heads to ensure proper operation for the upcoming irrigation season.

Please don't hesitate to send along any questions you may have as we get the system up and running.

You can read more about the irrigation process and answers to many potential questions on our website at www.oldnorthstatewater.com.

Want to change how you receive these emails?
You can [update your preferences](#) or [unsubscribe from this list](#).

Subscribe

Past Issues

Trans



Customers,

Our irrigation flushing efforts have been successful this past week. We will begin performing some additional testing and flushing in other areas as we work to bring the system online.

Starting later this week, we will turn on the irrigation system along Briar Chapel Parkway so we can adjust these zones as needed.

Following these adjustments, these areas will begin operations to aid in the flushing process.

We're alerting you because while these areas are away from homes, they are more highly trafficked than our previous flushing zones, and odors may be present from the operation of these areas during the initial flushing operations. This is in large part because we have still not received approval from the Department of Environmental Quality to add those small amounts of chlorine (less than or equal to the amount found in drinking water) that we've previously described.

To mitigate the experience, we will target the late evening to overnight hours for the vast majority of the operation to flush these wooded areas.

We may need to operate these zones intermittently during daylight hours to inspect the system and spray heads to ensure proper operation for the upcoming irrigation season.

Please don't hesitate to send along any questions you may have as we get the system up and running.

You can read more about the irrigation process and answers to many potential questions on our website at www.oldnorthstatewater.com.

Want to change how you receive these emails?

You can [update your preferences](#) or [unsubscribe from this list](#).

Subscribe

Past Issues

Trans



Customers,

This week, we've shared with the Briar Chapel Community Association Board our upcoming irrigation schedule and wanted to share with you, as well.

Here's what you can expect this week and going forward:

April 20-24

- The sprinklers off Catullo Run in the wooded areas will be in full operation with flushing complete this week. Immediately following successful flushing, regular reclaimed irrigation will start.

Week of April 27-May 1

- Briar Chapel Parkway will be flushed this week from East of Pokeberry Creek Bridge back to 15-501. Immediately following successful flushing, regular reclaimed irrigation will start.

Week of May 4-8

- Briar Chapel Parkway west of Pokeberry Creek Bridge to Great Ridge Parkway North and South, including Great Ridge Parkway North and South. Immediately following successful flushing, regular reclaimed irrigation will start.

Week of May 11-15

- Great Ridge Parkway North and South and west on Briar Chapel Parkway toward the water reclamation plant. Immediately following successful flushing, regular reclaimed irrigation will start.

Week of May 18-22

- Ancillary areas, including Margaret Pollard Middle School. Immediately following successful flushing, regular reclaimed irrigation will start.

We will bring the linear parks in the Great Meadow online in upcoming phases as well as Great Ridge Parkway South.

The startup of Boulder Park will be delayed until we can resolve the over saturation areas with the BCCA Board which we are all working diligently to do now.

In addition, we are happy to announce we will be implementing an ongoing testing protocol of the irrigation water. We're looking forward to sharing more about that next week.

Similarly, we will be sharing a timetable for the emergency repairs of the Hill Creek area force main line very soon. We appreciate your patience as we source materials during the pandemic.

As always, feel free to send questions through our new [website form](#).

Want to change how you receive these emails?

You can [update your preferences](#) or [unsubscribe from this list](#).

Water Sampling and Analysis for Briar Chapel Reclaimed Irrigation System

- Samples of flush water will be taken to provide a baseline.
- After flushing is complete, samples of water at distributed irrigation sites should be taken and location(s) be recorded, as shown on the attached map.
- During irrigation, water samples will be taken every 2 weeks at the distributed irrigation sites with locations recorded.
- Simultaneously with the reclaimed samples, water samples will be taken at the reclaimed pond, upstream of Briar Chapel and downstream of Briar Chapel in Pokeberry Creek.
- Above water samples should be analyzed for the following parameters:
 - BOD 5-Day
 - Fecal Coliform
 - Ammonia-Nitrogen
 - pH
 - Total Suspended Solids (TSS)
 - Turbidity
- After chlorination begins, analyses should include residual chlorine

MICHAEL MYERS
EXHIBIT 12

PLEASE NOTE, DRINKING WATER STANDARDS ARE REFERENCED FOR CHLORINE CONCENTRATIONS, BUT UNDER NO CIRCUMSTANCES SHOULD THE RECLAIMED WATER BE CONSIDERED POTABLE.

Test Period Prior to Regular Chlorination

Directive: Chlorinate lines at or below NCDEQ approved drinking water limits.

Step 1 Flush current irrigation lines using reclaimed water. Follow normal spring startup procedures.

Step 2 Obtain NCDEQ approval and permit to add chlorine feed.

Step 2 Advise NCDEQ level of chlorination to be added, at or below drinking water standards.

Step 6 Begin chlorination at 1 PPM (part per million).

Step 6 Obtain Water sample to determine level on chlorination applied is within the guidelines. Sample is obtained at the ends of the reclaimed system, points A, B and D on the map, to confirm there is residual chlorine in the lines, eliminating any bacteria present. The goal for residual ≥ 0.1 PPM, but less than the feed concentration.

Step 7 Advise NCDEQ and BCCA results of chlorination are within NCDEQ drinking water standards.

Step 8 Operate irrigation line using normal operations for 2 days.

Step 9 Obtain Water sample to determine irrigation water quality and increase chlorine feed to achieve chlorine residual if needed. If needed repeat Steps 1 through 9. This repetitive process will need to be

part of a long term quality assurance plan. ONSWC will sample the water quality every 2 weeks to certify the system is operating as planned. If at any time sampling reports unsatisfactory results the entire process/quality assurance plan will be assessed and adjusted.

April 23, 2020

Briar Chapel WWTP Enclosure Cost Estimate

Item			
1	Purchase & Ship Greenhouse (OH-NC)	\$	170,000.00
2	Install Greenhouse - General Contractor	\$	100,000.00
3	Engineer "Explosion Proof" System for inside Greenhouse	\$	65,000.00
4	Engineer Non-confined space air flow	\$	25,000.00
5	Purchase, ship, install, test and commission "Explosion Proof" Equipment	\$	375,000.00
	3 x 40 HP blowers with housing		
	2 x Stainless Steel Air Headers encircling aeration basins with drops and diffusers		
	2 x 15 HP suspended mixers for aeration basins		
	2 x 5 HP mixers for anoxic basins		
6	Purchase, ship, install, test and commission 5 x Scrubbers (@ ~\$106K each)	\$	600,000.00
7	Contengency - 15-20%	\$	200,000.00
Total		\$	1,535,000.00



NORTH CAROLINA
Environmental Quality

ROY COOPER
Governor

MICHAEL S. REGAN
Secretary

S. DANIEL SMITH
Director

April 22, 2020

Mr. Michael Myers
Old North State Water Company, LLC
1620 Chalk Road
Wake Forest, NC 27587

Subject: Summary of Site Visit
Briar Chapel Development
Reclaimed Water Generation, Conjunctive Reclaimed Water
Utilization, Non-Conjunctive Reclaimed Water Utilization,
and Wastewater Irrigation System
Permit Number WQ0028552
Briar Chapel Collection System
Permit Number WQCS00372
Chatham County

Mr. Myers,

On March 13, 2020, Rick Trone, Scott Vinson, and Jason Robinson of the Raleigh Regional Office, Division of Water Resources (DWR) conducted follow-up inspection of the non-conjunctive and conjunctive wastewater treatment, reclaimed water utilization system, and collection system located at the Briar Chapel Development. The purpose of this inspection was to reinspect areas of concern from a previous inspection in January 2020 and inspect areas of concern to residents of the community. During the inspection, the cooperation of yourself, Lee Bowman, William Lamm, Jared Thompson, and Kenny Harris was helpful and appreciated.

This site visit consisted of the following:

- On-site inspection of certain treatment components of the package plant noted on the January 10, 2020 site visit and;
- Reinspection of filter backwash discharge referenced in NOV-2020-PC-0102 and observed on February 4, 2020 and;
- On-site inspection of the sodium hypochlorite system Old North State Water Company (ONSWC) plans to add to the irrigation system and;
- Follow up with a resident that has concerns regarding a portion of the reclaimed water irrigation system and;
- On-site inspection of a portion of the collection system where numerous spills have occurred.



North Carolina Department of Environmental Quality | Division of Water Resources
Raleigh Regional Office | 3800 Barrett Drive | Raleigh, North Carolina 27609
919.791.4200

Because of the large number of odor complaints residents have communicated to the Raleigh Regional Office, DWR staff drove around the portions of the community closest to the treatment facility. Particular attention was paid to the Encore Community. No unusual odors related to the treatment facility were noted at the time of the site visit. ONSWC staff explained that a hydrogen sulfide sensor had been installed at the treatment plant headworks.

DWR staff observed the ultraviolet light system and the turbidimeter, as these components of the treatment facility were found to not be operating correctly on the January 10, 2020 visit. A Continuing Notice of Violation was issued to ONSWC following that visit. On March 13, it was observed that the control/display panels have been replaced. The turbidimeter also appeared to be working correctly and the error message noted on the two previous site visits was no longer present. The turbidity at the effluent on the day of this inspection was reading 23.1 NTU. Mr. Lamm explained that the facility was experiencing an upset and water was being sent to the upset pond.

DWR staff observed the filter backwash discharge point which was the focus of a site visit on February 4, 2020 and subsequently resulted in issuance of NOV-2020-PC-0102. As of March 13, 2020, DWR staff verified that ONSWC has rerouted the unpermitted discharge to the storage lagoon and is no longer discharging this reclaim wastewater.


In a letter dated January 3, 2020, ONSWC requested a modification to permit WQ0028552. This modification is to add a sodium hypochlorite injection system. The purpose of this new system is to help address resident concerns regarding odorous irrigation water. During this site visit, DWR staff observed the sodium hypochlorite storage tote and the pump, neither of which have been connected to the irrigation system. Currently DWR's Central Office, Non-discharge permitting group has yet to finalize their review of the permit modification request.

DWR staff visited an area of the community near Hill Creek Boulevard which was the site of multiple sanitary sewer overflows in the past. Another spill had occurred near the footbridge adjacent to 75 Hill Creek Boulevard due to a cracked force main at a bell joint. According to the Operator in Responsible Charge, William Lamm, 50 gallons of wastewater were lost to surface waters. During the site visit, half of the footbridge had been removed, the line repaired, and lime applied to the ground surface. Next, DWR staff inspected a manhole cover near the dog park. This particular manhole was the site of multiple incidents involving the cover lifting during spills resulting in a hazardous condition for vehicles. It had been requested this particular manhole be bolted closed. It was observed that the cover has been welded closed. Lift Station A is adjacent to the dog park and staff observed this location as well. ONSWC explained in response to NOV-2019-PC-0645 that a project to add a SCADA monitoring system had begun. During the March 13 visit, SCADA had yet to be installed.

Lastly, at the request of a concerned resident, DWR staff observed areas along the walking trail that parallels Wildwind Drive. DWR staff also observed these same areas previously with Mr. Lee Bowman. This area is at the bottom of a slope and often exhibits wet conditions. Several areas of small "sinkholes", many of them near spray nozzles, were observed. As during a previous site visit of this area, many of the reclaimed water valve boxes were full of water. Mr. Bowman had indicated a fix for this issue would be forthcoming. As of March 13, it does not appear this issue has been addressed. DWR staff do not believe the water in the valve boxes is due to leaks in the system.

If you have any questions about this inspection or this letter, please contact Rick Trone at Rick.Trone@ncdenr.gov or myself at Scott.Vinson@ncdenr.gov or 919-791-4200.

Sincerely,

A handwritten signature in dark ink, appearing to read "Scott Vinson", with a large, sweeping loop at the end.

Scott Vinson, Regional Supervisor
Water Quality Regional Operations Section
Raleigh Regional Office
Division of Water Resources, NCDEQ

Attachments: EPA Water Compliance Inspection Report

cc: RRO Files
Laserfiche Files