



## County Manager's Office

### Memorandum

To: Davie County Board of Commissioners

From: Mike Ruffin, County Manager *MMR*

Date: December 23, 2014

Subject: Eastern Davie Sewer Line: County Manager's Recommendation

Since August, we have been studying whether an alternate route for collection of sewer in Eastern Davie County would provide the needed capacity at a lower cost and with less impact on adjacent neighborhoods. Our analysis indicates that we have an alternative that meets these goals.

First, I need to revisit how the County's need for additional treatment capacity emerged, and why certain options were developed.

Eastern Davie County needs additional sewer capacity, and needs a line that will enable the area to continue to grow and meet the needs of its present and future wastewater customers. Presently, the County has a daily flow of .260 million gallons per day (mgd) against at state-allocated capacity of .425 mgd. It is the County's need for added capacity - and the County's need alone - that convinced the Board of Commissioners to seek a future capacity of 2 mgd.

The construction of a 2 mgd wastewater treatment plant was the only viable option when the County first began to explore how its additional need for capacity could be accommodated. At that time, the connection to the Winston-Salem-Forsyth County City County Utilities Commission system (CCUC) was at twice the rate paid by customers inside the City of Winston-Salem, and therefore, an unaffordable option.

Since the County was considering construction of new wastewater treatment plant, it made sense to work with the Town of Bermuda Run, which has an aging plant that will not be able to meet future discharge limits. One treatment plant made more sense than two treatment plants, and both jurisdictions knew state approval of two plants would be highly unlikely.

The Underpass Road option emerged once the County determined that the CCUC would provide a wastewater treatment rate that was the same as the rate paid by customers inside the City of Winston-Salem. Therefore, two options were developed by which the County could address its need for additional capacity:

- The construction of a state-of-the-art wastewater treatment plant that would discharge effluent into the Yadkin River; and
- The extension of a gravity line into the Underpass Road area that would ultimately connect via a force main to the Muddy Creek Wastewater Treatment Plant in Forsyth County with subsequent treatment and discharge into the Yadkin River by the CCUC.

In spite of the fact that the CCUC's decision last summer to agree to a treatment-only rate gave real credibility to the force main extension through the Underpass Road area, I do not understand why another route was not commissioned to be examined for a less costly option that would pass muster with the CCUC. Remember, the only limiting factor imposed by the CCUC was that any force main extension would have to tie in to the CCUC's Muddy Creek Wastewater Treatment Plant.

This is the point in time that I arrived with the County. I was surprised to learn that neither option had been vetted with the community except through discussions at Board of Commissioners' meetings. The absence of any outreach created misinformation, and an aura of distrust surrounded the County even as we proceeded to implement a communications plan with area residents.

While there may be some criticism as to why we did not begin an outreach campaign earlier, the level of outreach in place now is moving in the right direction. Residents have the opportunity to meet with County officials, review the latest information on its website, and receive important updates through email. For the most part, the outreach has helped to dispel some of the misinformation that has complicated the project. From my past experience, it is always better to make decisions by sharing information with stakeholders, listening to their concerns, and seeking answers to their questions. We have accomplished these goals. I commend them and you.

Immediately after the August 18, 2014 public hearing on the two alternatives mentioned on page 2, I asked Grey Engineering to evaluate if an acceptable alternative existed that would meet our capacity goal, and eliminate the extension of sewer through the Underpass Road

area. It should be noted here that Option 2, through the Underpass Road Interceptor, is not consistent with the County's Future Land Use. As shown on Map 1, the adopted Future Land Use Map only projects conservation land use for the area, part of which traversed the proposed Underpass Road force main. Conservation land uses are low-density residential development, passive recreation, open space, farmland, etc. The extension of a line through this area would be inconsistent with the County's stated projections for growth, and is what prompted my initial concern.

Grey Engineering investigated the feasibility of a force main route that would be consistent with the County's Future Land Use Map, meet the County's capacity requirements, and ensure the treatment-only rate by connecting directly to the CCUC's Muddy Creek Pump Station. The route which evolved from that request crosses the Yadkin River at a point at a considerable distance northwest of Underpass Road. After crossing the Yadkin River, the force main would extend along the rights of way Idols Road, Hampton Road, Frye Bridge Road, and Cooper Road where it would connect to the Muddy Creek Interceptor Sewer Line. Besides right-of-way encroachment agreements, only four other easements from property owners will be required.

The cost to obtain easements, the necessary permits and environmental clearances for this line is \$11,940,000. This cost estimate and the cost estimates for the other two alternatives are shown in Table One below.

**Table One**

**Projected Costs for Eastern Davie Sewer Alternatives\***

Option 1 - Interceptor, Treatment and Discharge:	\$21,190,000
Option 2 - Interceptor and Pump to CCUC below Idols Dam:	\$16,060,000**
Option 3 – No Interceptor but Force Main via Idols Road:	\$11,940,000**

\*Information provided by Grey Engineering

\*\*Actual County is \$1,174,000 less in light of financial participation from the Town of Bermuda Run

Map 2 shows the routes that both Options 2 and 3 will take. As I mentioned at the public meeting held at the Advance Fire Department on October 28, 2014, it is my opinion and my recommendation that the Board of Commissioners abandon Option 1 – the construction of a wastewater treatment plant. The cost is too high and frankly the County should join the effort

to regionalize wastewater collection and treatment to protect our rivers and streams, as long as cost does not prohibitively rule out this option. The cost information obtained from the analysis that Hazen and Sawyer prepared supports this goal. The cost to site and build a treatment plant is too high, and does not support the long-held State of North Carolina goal of regional collection and treatment.

The question at hand is whether to pursue Option 2 or 3, and as I see it, there are two driving questions that have convinced me as to which one of these two options should be pursued.

- What are the final costs of each remaining alternative?

Information from Grey Engineering indicates that Option 3 is \$4,120,000 less expensive than Option 2 and only involves the need for four easements.

- Will CCUC permit the County to extend a force main as outlined on the map in Option 3?

Chairman Terry Renegar, Commissioner John Ferguson and I met with CCUC Director Ron Hargrove on Friday, December 12 regarding the acceptability of Option 3. Mr. Hargrove gave his unqualified support. Further, Mr. Hargrove stated that he did not anticipate any problems with the approval of a contract by his Board. He agrees that any contract would include:

- A perpetual term
- Existing and future rates increases would be the same as rates for customers inside the City of Winston-Salem
- The County's allocated capacity of 2 mgd will not be reduced for any reason
- Any sewer surcharges will be levied in CCUC's Sewer Use Ordinance and will be based on samples of Biochemical Oxygen Demand (BOD) Total Suspended Solids (TSS)

With Mr. Hargrove's approval, I have asked the County Attorney to initiate negotiations for a final contract to ensure all of the understandings are correctly memorialized, and the long-term interests of the County are protected.

The best alternative for the County is to abandon both Options 1 and 2, and authorize the staff to proceed with the environmental clearances, permitting, design and construction of Option 3. Of course, this presumes the satisfactory negotiation of a contract with CCUC. It should also be noted that environmental findings and permitting will take approximately one year and could affect the final design of the project. I have no way of knowing what the permitting process may include but believe the State will look favorably on the permit application because it sets forth a regional approach to wastewater treatment, and in doing so, eliminates one point of discharge into the Yadkin River. I also believe this option will receive support from the Yadkin Riverkeeper organization as it supports their mission for the Yadkin River.

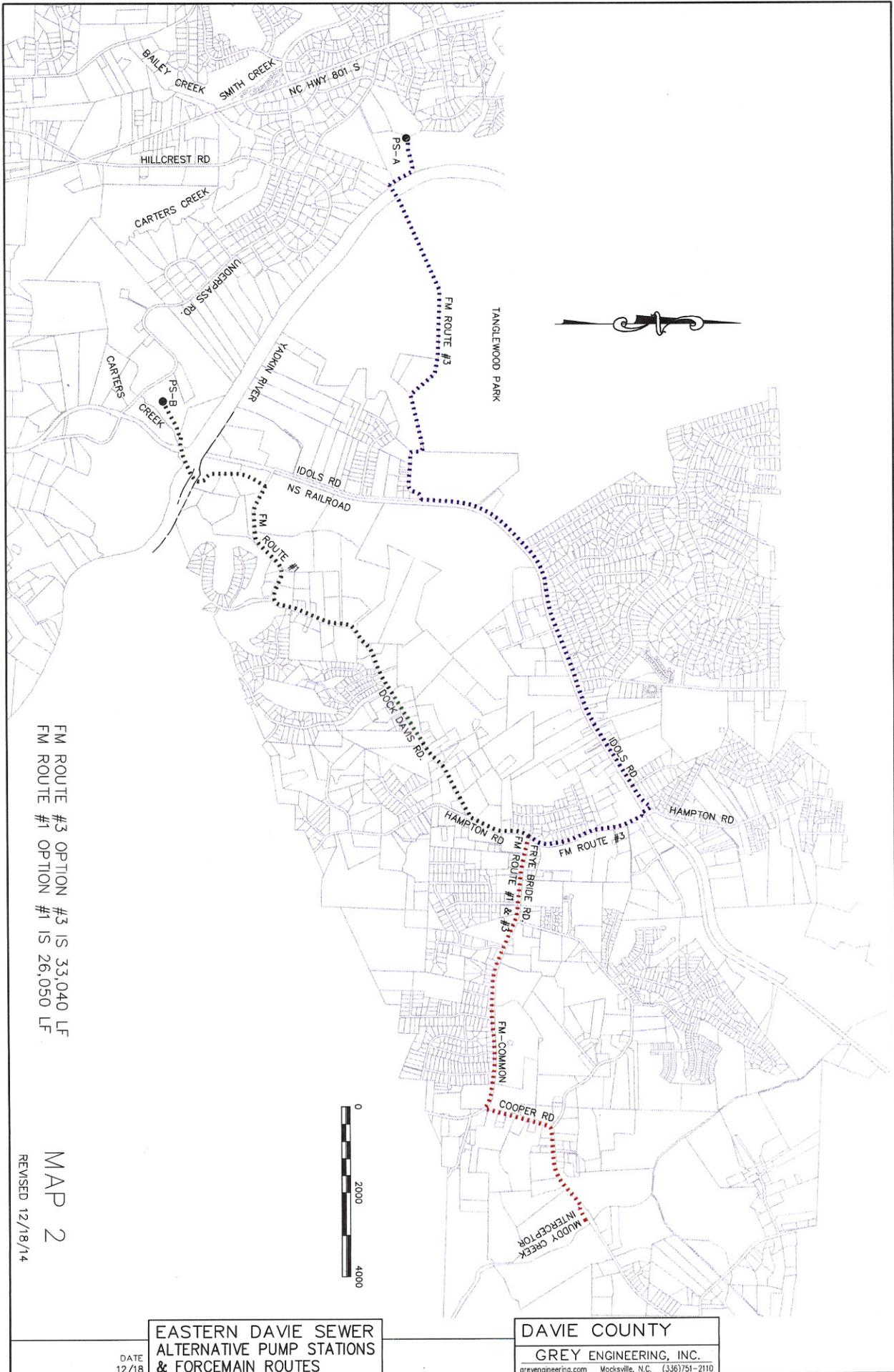
I will ask that any vote on this matter be deferred until February 2, 2015 so that we can again meet with interested citizens to discuss our findings and recommendations. I plan to hold this meeting at the Advance Fire Department on Tuesday, January 20, 2015 at 6:00 pm.

Please do not hesitate to contact me if you have any questions.

Enclosures

cc: Ed Vogler, County Attorney  
Johnny Lambert, Utilities Director  
John Grey PE, Grey Engineering  
Brenda Hunter, Clerk to the Board  
East Davie Stakeholders Distribution List  
Lisa O'Donnell, Winston-Salem Journal  
Mike Barnhart, Davie County Enterprise-Record





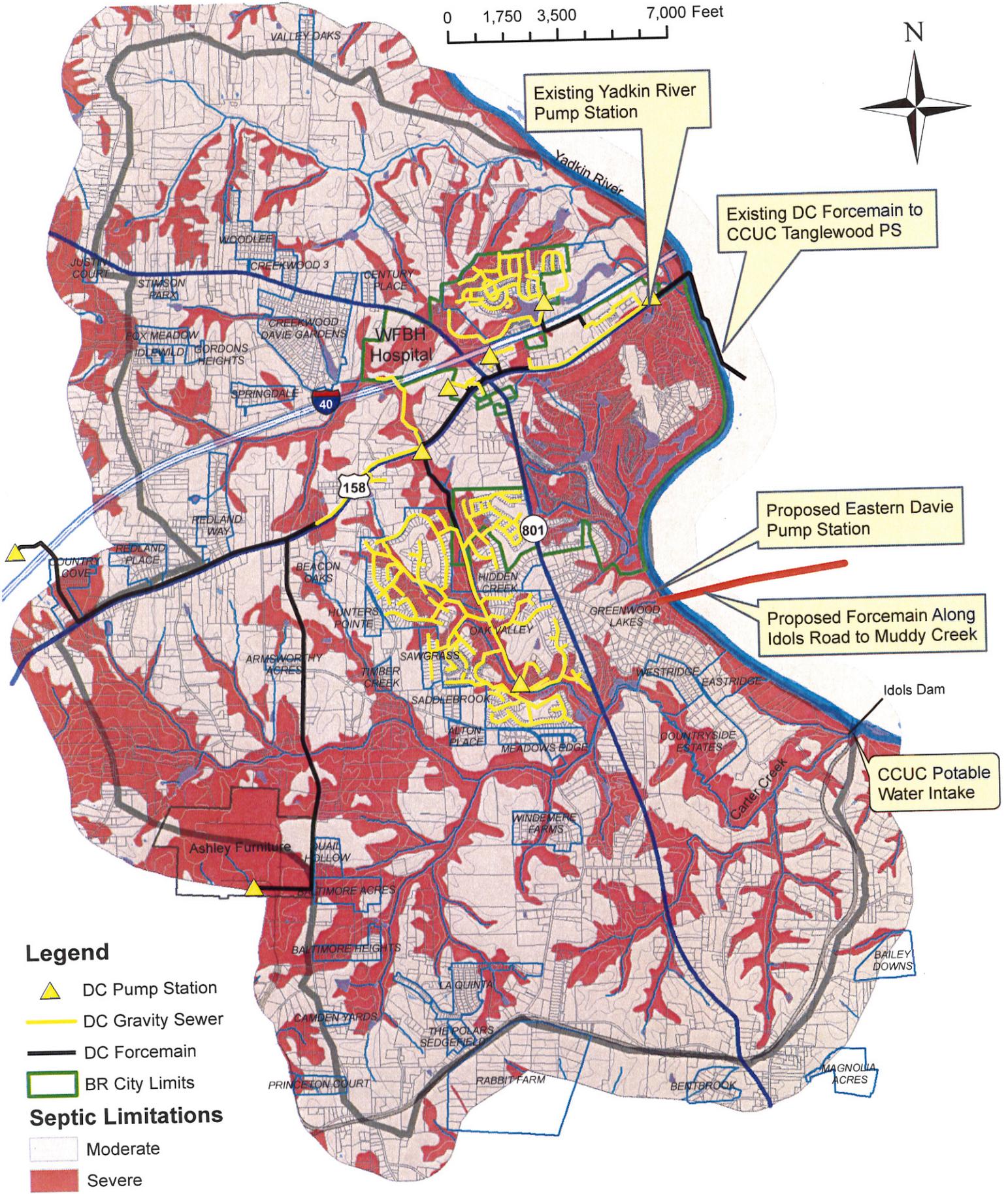
FM ROUTE #3 OPTION #3 IS 33,040 LF  
 FM ROUTE #1 OPTION #1 IS 26,050 LF

MAP 2  
 REVISED 12/18/14

EASTERN DAVIE SEWER  
 ALTERNATIVE PUMP STATIONS  
 & FORCEMAIN ROUTES

DATE  
 12/18

DAVIE COUNTY  
 GREY ENGINEERING, INC.  
 greengineering.com Wicksville, N.C. (336)751-2110



**Legend**

- ▲ DC Pump Station
- DC Gravity Sewer
- DC Forcemain
- BR City Limits

**Septic Limitations**

- Moderate
- Severe

**Map 3**