



I-85 Sanitary Sewer Improvement Master Plan Project Overview

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SGWASA Utility Customers: Welcome to the I-85 Sanitary Sewer Improvement Master Plan Project Page.

This page provides information related to the I-85 Sanitary Sewer Improvement Master Plan Project. Reading the information will help you understand the facts that this project focuses **on fixing the existing sanitary sewer lines and pump stations in the existing SGWASA service area that are needed now.**

Why Needed Now?

As a Master Plan, this project prepares SGWASA to meet future growth of the communities served by SGWASA, however, SGWASA does not drive this growth, as that is not SGWASA's responsibility. As a public utility, SGWASA is responsible to plan utility needs far into the future. Developers interested in building in the communities served by SGWASA must get approval from the local community. SGWASA works in coordination with the local community and developer to coordinate utility infrastructure that the developer will pay for.

Note that we are justifying this project for future growth. What is meant by the developer will play for this?

Under the direction from the SGWASA Board of Directors, SGWASA's Executive Director is pursuing Federal and State Grants for this project, thus looking to lower the cost as much as possible on the utility customers.

- **wait! you just said the developer would pay for it! Now you say the customers are going to pay for it**

Background

April 17, 2018: The South Granville Water and Sewer Authority (SGWASA) entered into an Engineering Agreement with Coulter Jewell Thames P.A. (CJT) to perform a study to evaluate the sanitary sewer collection and pumping systems that convey wastewater from the east side of I-85 to the west side of I-85 between N.C. Highway 56 and Gate 2 Road (S.R. 1103). The areas of service evaluated included the Town of Butner (west side of I-85), the former Lyons Station Sanitary Sewer District, and City of Creedmoor (east side of I-85). The sanitary sewer collection system that serves these areas is owned, operated, and maintained by SGWASA.

Lyons Station Sanitary Sewer District: Wastewater from the former Lyons Station Sanitary Sewer District and the northern part of Butner flows to a 30-inch Interceptor known as the Northern Interceptor. Conveyance of wastewater from these areas to the Northern Interceptor is by multiple pump stations and a series of different diameter gravity sewers.

City of Creedmoor: Wastewater from the City of Creedmoor is pumped by a 700 GPM (1MGD) Pump Station and Booster Station to the west side of I-85 that discharges to a 36-inch Interceptor known as the Southern Interceptor. The southern part of Butner also conveys wastewater to the Southern Interceptor through a series of pump stations and gravity sewers.

immediate and necessary?? Why?

May 20, 2019: At the conclusion of the I-85 Sanitary Sewer Study, four (4) sanitary sewer projects were identified by CJT for SGWASA as immediate and necessary. These four (4) sanitary sewer projects are as follows:

1. Replace approximately 14,772 linear feet of the existing collection system and extend the 30-inch Northern Interceptor by approximately 14,372 linear feet.
2. Construct a new East Middleton Road Pump Station and 12-inch force main that discharges to the Northern Interceptor.
3. Extend the 36-inch Southern Interceptor by approximately 13,206 linear feet. 2.5 miles: why?
4. Construct a new Joe Peed Road Pump Station and 20-inch force main that discharges to the Southern Interceptor.

The I-85 Sanitary Sewer Study determined that significant reasons exist for recommending these four (4) sanitary sewer projects currently. Based upon information provided by the I-85 Study prepared by CJT, the estimated cost to design and construct the four (4) projects outlined is \$47,757,798.59.

what are the "significant" reasons?

November 1, 2019: The South Granville Water and Sewer Authority (SGWASA) authorized Coulter Jewell Thames P.A. (CJT) to develop a Priority Schedule demonstrated by Gantt charts that illustrate priorities, annualized financial costs, and dependent relationships between activities and project schedules to accomplish the required work. On February 17, 2020 the CJT Priority Schedule project was completed. The focus of the Gantt Charts is to illustrate the four (4) major sanitary sewer improvements recommended in the I-85 Sanitary Sewer Study. The four (4) major sanitary sewer projects highlighted by the Gantt Charts are as follows:

Note an extension! of almost 3 miles; why is this necessary?

- Priority No. 1 – 30 Inch Northern Interceptor Extension
- Priority No. 2 – 36 Inch Southern Interceptor Extension
- Priority No. 3 – New Joe Peed Road Pump Station / Force Main
- Priority No. 4 – New East Middleton Road Pump Station / Force Main

The interceptor extensions are large collector sewer pipes that run right through the area where Butner wants to build a massive development! Just a coincidence I suppose!

Three (3) Gantt Charts were prepared for SGWASA illustrating a five (5) year plan, a seven (7) year plan and a ten (10) year plan. Annualized costs were determined after CJT solicited quotes from engineering consultants who provide geotechnical borings, environmental delineation/permitting and flow monitoring for the existing East Middleton and Joe Peed Road Pump Stations as a precursor to the design of the Interceptors and new pump station replacements. Design costs and construction costs illustrated by the Gantt Charts coincide with costs provided by the I-85 Sanitary Sewer Study.

In preparing the Gantt Charts for the 5-year, 7-year, and 10-year schedules, CJT considered annualized costs for SGWASA and associated time frames to complete the four (4) Projects. The seven (7) year and ten (10) year Gantt Charts show annualized costs that do not exceed \$10 million dollars per year to complete the tasks. Annualized costs for the five (5) year plan, however, do exceed \$10 million dollars per year with year four (4) being the highest expenditure at \$14,728,040.00.

Analysis:

affordability

With the detailed information provided by the Gantt Charts for the 5-year, 7-year, and 10-year schedules, SGWASA's Executive Director and Finance Director were able to evaluate various funding scenarios to better understand the affordability of the approximate \$50 million construction plan, with respect to the pace of the construction of the four (4) priority projects.

funding scenarios do not assume grants

Due to the uncertainty of grant awards, grant dollars were not calculated into the funding scenarios presently, however, grants are being pursued and the awarded grant dollars will lessen the amount of money needed for loans or bonds.

The various funding scenarios analyzed, included:

1. Design/Construct all four (4) Priority projects
 - \$50 million **USDA loan** for a 40-year term, beginning in FY22-23
2. Phased Design/Construction Approach
 - \$25 million **USDA loan** for a 40-year term, beginning in FY22-23
 - Design/Construction of Priority 1 and 2 projects
 - \$25 million **USDA loan** for a 40-year term, beginning in FY26-27
 - Design/Construction of Priority 3 and 4 projects
3. Design/Construct all four (4) Priority projects
 - \$50 million **Bond** for a 20-year term, beginning in FY22-23
4. Phased Design/Construction Approach
 - \$25 million **Bond** for a 20-year term, beginning in FY22-23
 - Design/Construction of Priority 1 and 2 projects.
 - \$25 million **Bond** for a 20-year term, beginning in FY26-27
 - Design/Construction of Priority 3 and 4 projects.
5. Phased Design/Construction Approach
 - \$25.5 million **DEQ loan** for a 20-year term, beginning in FY22-23
 - \$24.5 million **WIFIA** (Water Infrastructure Finance Innovation Act) **loan** for a 30-year term, beginning in FY27-28

The various funding scenarios presented above all require additional revenue generation to build the sanitary sewer projects within the next 3-7 years.

Schedule

July 2020: The South Granville Water and Sewer Authority Board of Directors receives a presentation/update regarding the status of the I-85 Sanitary Sewer Replacement Project. SGWASA advertised a Request for Qualifications (RFQ's) to seek an engineering consultant to design the sanitary sewer interceptor improvements (Master Plan Priorities 1 & 2).

August 2020: Statements of Qualifications (SOQ's) were received from five engineering consulting companies. The five engineering consulting companies were scored objectively by internal staff and external, non-competing engineering staff, to develop a ranked score. Of the five engineering consulting companies, the top two scoring consultants received on-site interviews, thus helping to determine a final ranking of the best engineering company for the design work proposed.

September 2020: Interviews held with the two highest ranked engineering companies. Ultimately, CDM Smith was selected by SGWASA as the most qualified engineering consultant for the I-85 Sanitary Sewer Improvement Project.

October – December 2020: SGWASA and CDM Smith refined the scope of work, estimated hours for the design work, reviewing draft contract documents with attorneys, and other preparation work prior to bringing the item to the SGWASA Board for contract review and approval.

It is admitted below that interceptors are for development; development already up and in design for Butner 850 acre massive growth project. Why do we have this massive push for development?????

At the conclusion of the work, SGWASA and CDM Smith agreed upon a two-phase project approach to ensure the best long-term solution for the interceptor project, and ultimately, for the SGWASA service area.

In summary, phase 1 consists of additional modeling and analysis to further refine the interceptor pipe sizing to ensure capacity for current and future development, while also exploring the option of a new regional lift station in place of the gravity interceptors. Phase 2 will consist of the design, permitting and construction administration of the best option selected. Staff will bring the phase 2 work and the associated costs back to the SGWASA Board for review and consideration for approval.

February 2021: At the Feb. 9, 2021 regular monthly Board Meeting, the South Granville Water and Sewer Authority Board of Directors approved the phase 1 engineering contract with CDM Smith. During the next few months, CDM Smith will be working on phase 1 engineering.

I-85 Sanitary Sewer Upgrade Project	Name	Size
	<u>I-85 Area Sanitary Sewer Project Summary and Costs 2019.pdf</u>	639.6 KB
	<u>SGWASA SANITARY SEWER STUDY UPDATE - 2019-01-15.pdf</u>	6.2 MB
	<u>SGWASA I-85 Sanitary Sewer Update for July 2020 Board Meeting.pdf</u>	3.7 MB
	<u>Feb 2021 Board Meeting Legislative Memo Final for I-85 Phase I Contract - CDM Smith.docx</u>	905.9 KB

The second one from the top will show you the 13,000 acres they are planning to develop in Creedmoor: <https://www.sgwasa.org/media/I-85%20Sanitary%20Sewer%20Upgrade%20Project/SGWASA%20SANITARY%20SEWER%20STUDY%20UPDATE%20-%202019-01-15.pdf>

Engineering Services

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Contacts

Contact Information



415 Central Avenue
Suite B
Butner, NC 27509

[Get Directions](#)

[919-575-3367](tel:919-575-3367)

Fax: 919-575-4547



Engineering Office Business Hours

Weekdays 8:00 am - 5:00 pm



Utility Engineer

Mark Hamlett, P.E.

[919-575-3367](tel:919-575-3367) Ext. 309

919-575-4547

[Email](#)

South Granville Water and Sewer Authority
415 Central Ave, Ste B, Butner, NC 27509
Phone: (919) 575-3367 FAX: (919) 575- 4547

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