

# **WASTEWATER COLLECTION SYSTEM MASTER PLAN UPDATE**

## **~ REQUEST FOR QUALIFICATIONS ~**

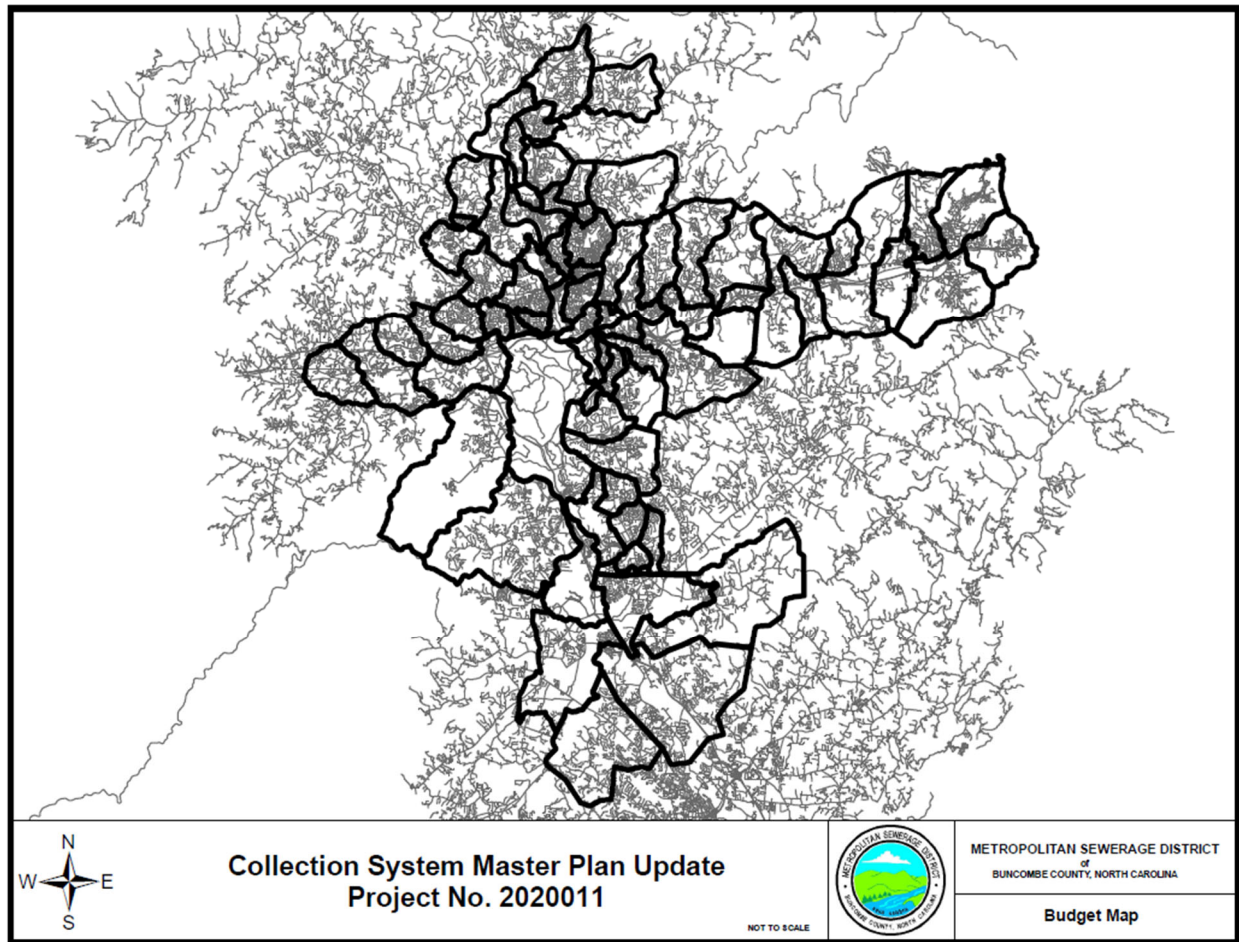
The Metropolitan Sewerage District of Buncombe County, North Carolina (MSD) is soliciting Statements of Qualifications for Professional Engineering Services associated with the Wastewater Collection System Master Plan Update. The study shall include a hydraulic evaluation of the existing collection system under current conditions and future projected flows. Results shall be utilized to generate a report to identify and prioritize major improvements needed to maintain system capacity and reliability, and accommodate future growth projected within MSD's service area. The master plan shall provide guidance over a 20-year planning horizon with project recommendations to be implemented through MSD's Capital Improvement Program (CIP).

### **General Background of Collection System**

MSD is a regional wastewater utility that serves approximately 205,500 customers across a 264 square mile service area located within the French Broad River basin. MSD owns and operates a 1,155-mile collection system, 39 pump stations, and a 40 mgd Wastewater Reclamation Facility (WRF) located along the French Broad River in Asheville, North Carolina. The plant currently treats an average daily flow of approximately 21 million gallons per day (mgd) and has a permitted maximum month capacity of 40 mgd. Peak hourly flows of 80 mgd can occur during intense rain events.

MSD was formed in 1962 by the North Carolina Stream Sanitation Committee for the purpose of constructing interceptors and wastewater treatment facilities to serve the regional needs of Buncombe County (Asheville, Biltmore Forest, Black Mountain, Montreat, Weaverville, Woodfin, and Buncombe County at large). Decades later, MSD began serving portions of northern Henderson County (the former Cane Creek Water and Sewer District (CCWSD)) which merged with MSD in July 2020.

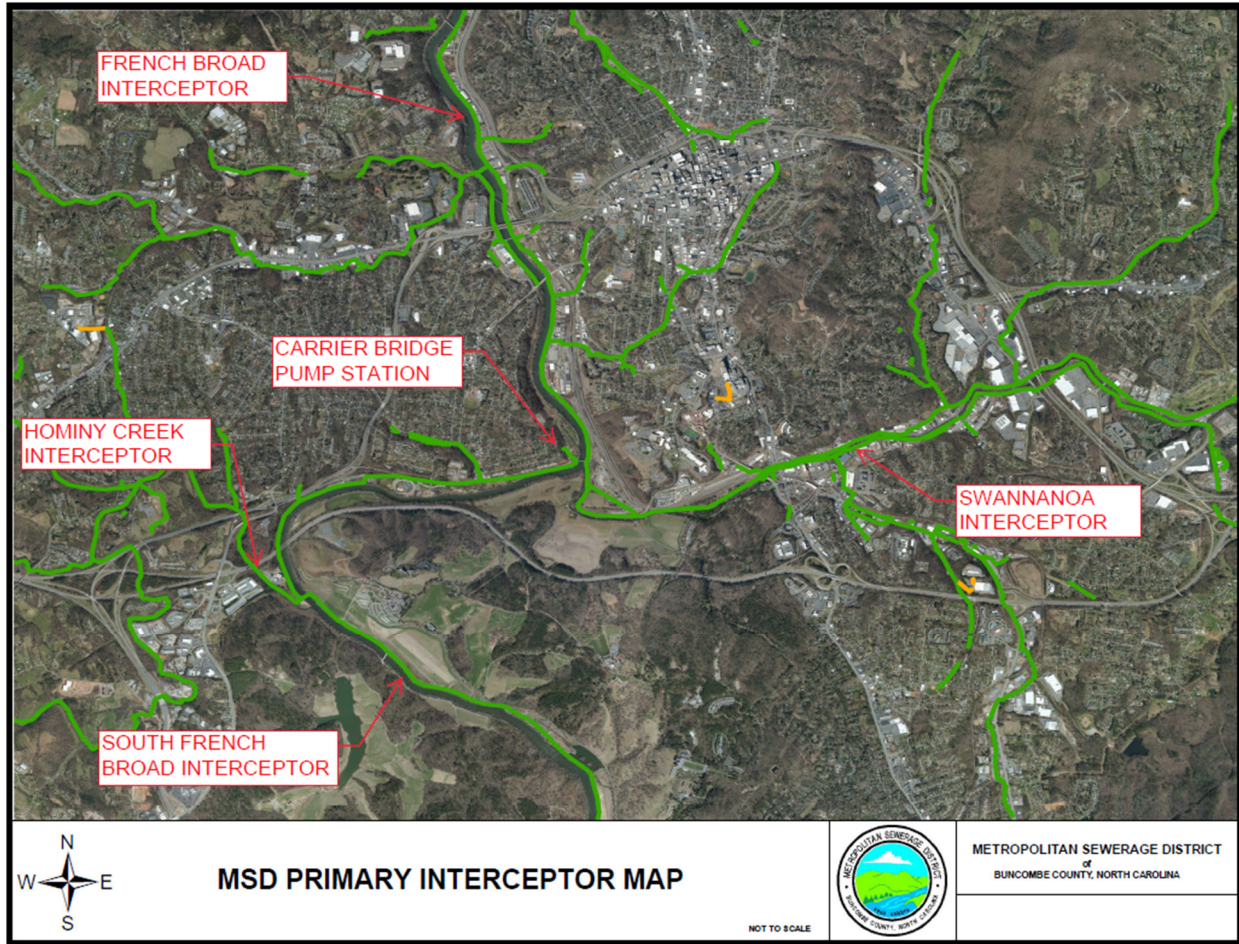
Figure 1 illustrates MSD's service area and sub-basins.



**Figure 1: MSD Service Area**

The primary interceptors serving Buncombe County are located along the French Broad River, Swannanoa River, and Hominy Creek. The South French Broad Interceptor serves significant areas of western and southern Buncombe County, and Northern Henderson County. Flow conveyed through this line enters Carrier Bridge Pump Station, a 22mgd pump station constructed in 1966, and is pumped from the west side of the French Broad River to the east side via a 24-inch DIP force main. At the discharge manhole, flow from Carrier Bridge converges with flow from the Swannanoa Interceptor which serves the Swannanoa Valley, up to and including Ridgecrest, MSD's easternmost collection point. From the convergence point northward, the North French Broad Interceptor conveys flow to MSD's WRF.

Figure 2 identifies MSD's primary interceptors.



**Figure 2: MSD's Primary Interceptors**

## **Previous Master Planning Studies**

MSD has completed several collection system master planning documents throughout the years that have been utilized for guidance of developer-driven sewer extensions and for identification and prioritization of large CIP projects. These studies and additional data shall be utilized when updating the collection system master plan. Below is a summary of previously completed studies:

- **Wastewater System Master Plan (CDM, 2001)** - Provided future flow projections and recommendations for WRF improvements, pump stations improvements, wet weather conveyance improvements, collection system management and O&M, and wastewater collection system improvement plan.
- **Collection System Master Plan (McGill Associates, 2008)** - Provided buildout flow projections for future service areas within Buncombe County and provided mapping of

potential sewer extensions including conceptual pipe layout, pipe sizing, and pump station locations.

- **French Broad Interceptor - Carrier Bridge Preliminary Engineering Report (CDM-Smith, 2019)** - Provided hydraulic modeling analysis of current and future flow (2070 projections) through existing sewer interceptors and Carrier Bridge Pump Station, MSD's largest pump station. The report included recommendations for conveyance improvements and a flow equalization facility (storage tank) analysis.
- **Collection System Master Plan Addendum, Cane Creek Water & Sewer District (McGill, 2021)** - Updated the 2008 Collection System Master Plan to include the CCWSD. The addendum provided flow projections for future service areas within the CCWSD along with mapping of conceptual pipe layout and pipe sizing.

## **General Scope of Work**

The firm selected shall integrate previous master plan studies and other reports, data, and models to develop an updated comprehensive master plan for a 20-year planning period. The master plan will provide long-term guidance that will be utilized in MSD's CIP, Planning and Development Department, and GIS mapping. Engineering Services shall include but are not limited to temporary flow monitoring, hydraulic modeling of conveyance systems, future flow projections (including wet weather), prioritized recommendations for collection system improvements, detailed project descriptions and cost estimates. The hydraulic model shall consider base sewers flows, projected future growth, and wet weather impacts to system capacity through the year 2045. Recommended improvements shall be sized for a service life of 50 years.

Additional project specifics and requirements include:

- Supplemental flow monitoring in the collection system. MSD operates ten (10) permanent flow monitoring stations within its service area, each located on major interceptor lines. To accurately model and predict potential problem areas across a broader range of the collection system, additional (temporary) monitoring will likely be necessary. The selected consultant will assist MSD in choosing meter locations and duration for each installation. MSD and its contractor, MechTech Solutions will be responsible for meter installation, operation and maintenance, and data acquisition.

- Evaluate historic trends of population growth and wastewater flows from various sources including flow monitoring data, MSD system accounts, etc.
- Generate wastewater dry and wet weather flow projections based on flow monitoring data and population percentage growth data with the use of traffic analysis zones and/or census data, and County and City comprehensive plans. The population flow projection shall consider resident and employee daily usage flows. The selected team shall consider ongoing or recent planning efforts throughout the system, being sure to utilize existing study results where available.
- Utilize and/or update the hydraulic model (MIKE Urban v2020) previously created for the 2019 French Broad Interceptor – Carrier Bridge Pump Station PER. This model evaluated interceptors 24-inches and larger. The update shall include interceptors 16-inches and larger. New modeling scenarios and results shall be compatible with the existing MIKE Urban v2020 model.
- Identify improvement projects to address reducing inflow and infiltration and current and future wet-weather flows.
- Develop a plan, capital costs, long-term O&M costs, and prioritization of improvement projects to be implemented into the CIP. Compare these results with MSD's current CIP collection system projects.
- Prepare an executive summary, technical memorandums, and workshops to present and collaborate with MSD staff.

### **Additional Resources Being Provided:**

- 2001 Wastewater System Master Plan (CDM)
- 2008 Collection System Master Plan (McGill Associates)
- 2019 French Broad Interceptor Carrier Bridge Preliminary Engineering Report (CDM-Smith) and MIKE Urban Hydraulic Model
- 2021 Collection System Master Plan Addendum, Cane Creek Water & Sewer District (McGill)



## **Submittal Requirements**

**NOTE:** **Qualifications shall not exceed fifteen (15) pages in length.** Brevity, clarity, and conciseness are strongly encouraged.

1. **Transmittal cover letter.** The cover letter will designate the firm's contact person with phone number, mailing address, fax number and email address.
2. **Project team and sub-consultants.** Identify the project manager and describe their experience related to this project. Identify other project team members and sub-consultants and their relative experience. Discuss the role of key team members. Specify the location of the offices and the percentage and type of work that will be performed at each location. Discuss the experience of the project manager with the other members of the project team.
3. **Firm Qualifications.** Discuss the firm's work on projects similar in size and scope. Firm must have extensive knowledge and expertise in wastewater collection system master planning and hydraulic modeling. Firm must have completed **no less than 10** similar master planning documents. Indicate firm's history of meeting established schedules and budgets.
4. **References.** Provide references of other clients (including contact name, phone number and address) for other projects similar in scope.

## **Evaluation of Statement of Qualifications**

The selection committee will develop a short list of firms for the project. Short listed firms may be asked to participate in a presentation/interview process.

The selection committee will choose a firm for the proposed project based in part on the following criteria:

1. Experience on projects of similar type and magnitude, and the firm's ability to adequately address and evaluate the items described above, within the specified timeframe.
2. Qualifications and experience of the proposed team and location of team members.
3. Completeness of the submittal.

4. Any other experience or criteria deemed applicable to the project.

## **To Respond**

If your firm is interested in this project and qualified based on the requirements above, please submit an electronic copy of the Statement of Qualification to Hunter Carson, P.E. before 2:00 P.M on Friday, August 23, 2024 to:

MSD of Buncombe County, N.C.  
Mull Building  
2028 Riverside Drive  
Asheville, N.C. 28804

For questions regarding the process or to review information, please contact Hunter Carson directly at (828) 225-8241, or e-mail [hcarson@msdbc.org](mailto:hcarson@msdbc.org).

The anticipated selection process timeline will be as follows:

- SOQ Submittal Deadline – Aug. 23, 2024
- SOQ Review and Shortlisting – Aug. 26 - Sept. 13, 2024
- Consultant Interviews – Sept. 16 – Oct. 4, 2024
- MSD Board Approval – Nov. 20, 2024

The Metropolitan Sewerage District reserves the right to reject any and all Statements of Qualifications.