

TriRiver Water Downstream Analysis Guidelines

INTRODUCTION

This document provides guidelines to help you prepare and submit a downstream wastewater system analysis. All developments and connections to the system require that analysis to be approved or waived by TriRiver Water. Any deviations from this process must be approved in writing by TriRiver Water. Please note: TriRiver Water will evaluate all submitted analyses to ensure adequate capacity exists or determine if any improvements are needed to create adequate capacity.

CRITERIA

All evaluations will utilize the following criteria:

- Flow generation by land use shall consider the current NCDEQ 2T rules and be supplemented by TriRiver and Local County guidelines as applicable.
- All existing residential development shall be assumed to be 3 bedrooms for the purpose of analysis.
- A Mannings “n” factor of 0.013 shall be used for all gravity sewer calculations.
- All existing slopes shall be considered minimum according to the current NCDEQ 2T rules from the starting manhole location, and values shall conform to current NCDEQ standards and supplemented with TriRiver Water guidelines as applicable.
- All gravity lines shall be limited to 50% of the pipe capacity based on Average Daily Flow (ADF) and 85% based on Peak Flow (PF).
- The evaluation should consider all phases of the development. Should the implementation between phases of the development exceed 24 months, a subsequent evaluation shall be performed and submitted.
- The analysis shall be conducted on all portions of the collection system downstream of the proposed connection, up to the next major outfall, as defined by TriRiver Water. Deviations from this requirement must be approved in writing by TriRiver Water.

PROPOSED FLOW DEVELOPMENT

The following shall be developed based on the required criteria:

- Detailed analysis and summary of proposed development flows (ADF and PF)
- Detailed analysis and summary of offsite flows to pass through the proposed development.
- All flow factors and other assumptions shall be clearly noted.
- Limits of all basins and sub-basins shall be clearly defined.

DOWNSTREAM COLLECTION SYSTEM CAPACITY ANALYSIS METHODOLOGY

In general, the existing flow in each downstream gravity sewer segment shall be calculated based on the following criteria:

- The existing drainage basin(s) shall be delineated and presented.
Determine the capacity of each segment, the existing flow (ADF and PF) in each segment both pre and post development.
- Flow monitoring is an additional acceptable method; the duration is for one month.
- **Studies in the Pittsboro and Siler City service areas shall be conducted via flow monitoring.**
- Other methodologies will be considered on a case-by-case basis and will require the approval of the Director of Engineering.

DELIVERABLE

A downstream analysis report needs to be provided for all proposed developments and at each phase of the proposed development. If construction does not begin within two years of the downstream analysis being accepted, then a new report must be resubmitted and go through the approval process again. The following outlines the general format that should be used for each report:

- Introduction and background including description of the project to include:
 - Location and description
 - Breakdown by land use and specific sizing information for each type including offsite areas if applicable.
 - Layout including mapping and location of downstream connection point. Offsite basins, if applicable, shall also be shown.
 - Development phasing plan
 - Project completion schedule broken out by phase.
- Proposed onsite, and offsite as applicable, flow evaluation broken down by phase.
- A summary of the downstream analysis, pre and post development, broken down by line segment.
- Mapping to include:
 - Service Area Map, showing at a minimum:
 - Proposed development layout
 - Major roads
 - Contours
 - Drainage basin(s) boundary
 - Adjacent development
 - Sanitary Sewer System Map
 - Layout of proposed sanitary sewer system
 - Connection points to adjacent systems shown.
 - Segment ID clearly shown and labeled (referenced to the results)
 - Manhole numbers clearly shown and labeled (referenced to the results)
- Summary of results
 - Summarize all results and identify any segments that will exceed the specified capacity limits.
 - Identify and provide recommendations, including probable construction costs, for any upgrades in the existing collection system that would be required due to the additional flow.
 - Submit a schedule for the proposed upgrades with the analysis.