



## M E M O

To: Tony Lorenzo – Utilities Superintendent

From: Michael Henry, PE

Date: 11/24/15

Project Number: Avon Misc.

Regarding: Sanitary Sewer Planning for Entire City

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Cc: Ryan Cummins, PE – City Engineer

Per our conversation earlier this month, we will evaluate the entire sanitary sewer tributary area within the City of Avon to confirm proposed sanitary sizing for extended sewers and flow meters to be installed within the Jaycox and Nagel Districts. This will allow the City to plan for future development, understand and update the model and understand the limitations as new development is being assessed. Our services will include the following:

1. **Redistrict The Tributary Sanitary Sewer Areas** – Evaluate and determine how to best re-district the City's sanitary tributary areas based on topography, soil conditions (per the soil survey of the USGS), existing tributary area, existing sewer elevations and proposed flow based on zoning/planning. We will pull the past ordinances defining the limitations and expectations of the tributary area(s). We will work with the City's Utility and Service Departments throughout the process to discuss previous limitations and understand the existing routing prior to completion of the final recommendation. During this study, we will **not** change the boundaries of Nagel, Jaycox and Avon Center Road Districts. Also based on our discussions revising the current 208 boundaries will not be performed as part of this modification.

*Redistrict The Tributary Sanitary Sewer Areas Fee: \$15,250.00*

2. **Proposed Sewer Sizing** – Based on the proposed tributary areas, we will perform hydraulic analysis of the sewer and recommend the proposed sewer sizing of the extension from the existing sewers to the proposed development areas. Also, during this analysis we will be able to determine any needed modifications to the existing sewers downstream to accommodate the proposed extension. The proposed and existing sewers will be sized based on theoretical design of the tributary areas using current zoning classification and design flow rates of the Ohio EPA and ten states standards.



The Nagel, Jaycox and Avon Center Road Districts will be analyzed from the sewer outfall to the proposed extensions. In order to help define the existing limitations and flows, we plan to work with AECOM and install flow meters at a few areas within the Nagel, Jaycox and Avon Center Road Districts and combine the metered flow with the meters on the discharge of the pump stations of the Nagel and Jaycox districts to determine actual flows at key junctions in the system.

*Proposed Sewer Sizing Fee: \$74,500.00 (\$46,000.00 Nagel/Jaycox/Avon Center Area includes (4) four flow meters for (6) six months plus \$28,500.00 for balance of City)*

We have not included performing an analysis of the existing trunk line connection points of French Creek and the City of Avon Lake. We will assume a free discharge.

Deliverables: CVE will prepare a revised Master Sanitary Sewer Plan indicating the proposed sewer sizing, and tributary areas. A master report will be supplied to the City indicating designs calculations and assumptions for proposed sewer extensions and final conclusion.