Engineering Report

South and Center Chautauqua Lake Sewer Districts (S&CCLSD)
Chautauqua County, NY

Ashville Sewer Project
March 2009

General

The Hamlet of Ashville is located 1 mile Southwest of Chautauqua Lake and is bisected by north-flowing Goose Creek in Chautauqua County, NY. Ashville is a relatively densely populated unincorporated hamlet with a year round population of about 935. Approximately 80% of the homes in Ashville are located in the Town of North Harmony. The remaining homes are in the Town of Busti. All homes are currently served by individual onsite septic systems. Poor soils, high water tables, small lots with insufficient separation between wells and drain fields and aging septic systems are the most probable cause of a reported 39% system failure rate in past comprehensive sanitary surveys.

Numerous regional watershed protection organizations, local governments, and human health sustainability agencies are proactive towards this project, documented recently by letters of support and Resolutions. The type of shallow, mechanized sewer collection and conveyance systems recommended in this report are significantly more labor intensive to construct than a deeper gravity sewer system that requires more machine work to build. However, the shallow mechanized sewers proposed are more cost effective.

This project can move forward quickly with funding support under the American Recovery and Reinvestment Act (ARRA) of 2009. Consequently, we have prepared this application in the spirit of both immediate job creation and providing a valuable benefit to the region. SEQR Project Notification shall be mailed to agencies on April 6, 2009. The Type I Action, Part I EAF and all attachments are 100% professionally prepared now. The S&CCLSD shall request Lead Agency Status in the Project Notification Letter to be sent to 29 involved and interested agencies.

Professional services can begin immediately upon a funding commitment. Such work includes final map, plan and report preparation, capturing easements, SHPO and wetlands clearances, aerial mapping (scheduled 11/4/09) and final design and permits immediately thereafter. During the meantime, SEQR agency comments, mitigation alternatives and the DEIS/Final EIS shall be concluded with appropriate public notification and involvement. Construction is scheduled to begin 8/24/10 and be substantially complete 10/10/11 with a long term fund commitment.

Project Planning Area

The areas of densest development within the hamlet are being considered for connection to public sewer. Point of connection sewers of the South and Center Chautauqua Lake Sewer Districts (S&CCLSD) currently exist within 500 feet east of the beginning of the proposed Ashville service area, continuing west another 1500 feet encompasses the first 24 of 401 equivalent dwelling unit proposed connections. A layout of the existing sewer system as well as the area of proposed service is shown on the attached map dated March 10th, 2009. The entire proposed project area is already within existing S&CCLSD boundaries and would require no additional district creation or amendment. The extent of the proposed service area is a function of the total annual cost of the service to the residents and will be more specifically defined during the project funding commitment phase.

Existing Facilities

As shown on the attached map sanitary sewers currently exist outside the Ashville hamlet to the North and East. These sewers, currently a part of SCCLSD, convey sanitary waste through the Village of Lakewood, but not serving Lakewood, and ultimately onto the Districts' wastewater treatment plant located at 51 Gifford Ave. in Celoron, NY. The Village of Lakewood, and other municipalities, are served by S&CCLSD by separate interceptors and collection systems. The WWTP currently operates at approximately 60% of its design capacity and can accommodate additional connections.

Since the 1980's homes within the hamlet of Ashville have had documented problems with their onsite sewage disposal systems. As a part of previous attempts to justify funding, potable water well and septic dye tests and similar means to substantiate system defects were utilized. Current estimates (Chautauqua County Department of Environmental Health) put the system failure rates (drinking water wells) at 33% of the 368 residential dwelling units in the hamlet.

Need for Project

Documented occurrences of septic tank effluent on the surface of the ground from homes in areas throughout the hamlet threaten not only the health and well being of the affected homeowners but that of their neighbors and all residents in the downstream watershed. (Documented in the thorough 1985 sanitary survey that detected a 39% on-lot sewage disposal failure rate. The County Environmental Health Department required the best corrective actions be performed when sanitary sewer grant funding was not approved shortly thereafter. However, during the past 20 years, many repairs to on-lot sewage disposal systems are believed to have reached or exceeded their useful life due to poor soils, small lots and inadequate separation of wells and sewage leach fields.) In addition, the runoff from these properties will adversely affect the water quality in adjacent

streams and ultimately Chautauqua Lake. As a part of previous studies, stream samples were collected and exhibited signs of human sewage contamination. In addition, as these onsite systems provide inadequate treatment to the sanitary waste from the homes, it will have an adverse impact on the groundwater quality throughout the area and place the residents at additional risk as there is no public water service.

Alternatives Considered

As the Districts currently do not have the financial resources to fund the construction of the necessary improvements to alleviate the situation, they must seek assistance in the form of loans or grants. As mentioned previously the extent of the service area will be determined by the limit of each individual's annual cost of service averaged over the collective group of users as determined by the State Comptroller's office.

Six potentially feasible alternatives have been considered. Various combinations of gravity sewer, pump stations, forcemains, vacuum sewers/pump stations and low pressure sewers with grinder pumps were evaluated.

Selection of an Alternative/Recommendation

The alternative that maximizes the provision of service to the greatest number of affected residents of the hamlet at the lowest annual cost was determined to be a combination of vacuum sewers, primarily, with some low pressure grinder pump segments, where topography dictates, to provide the maximum benefit. S&CCLSD has had 4 similar vacuum systems in service for nearly 25 years and has fully trained staff to efficiently operate and maintain these types of sewers. This alternative will provide service to 401 equivalent dwelling units throughout the settlement in the areas shown in red on the attached map. The construction will consist of the installation of approximately 49,000 LF of sewer at an estimated total cost of $14,325,000 in accordance with the following breakdown:

Planning; Aerial Mapping; Wetlands; Archeological:	$	197,600
Final Design; Geotechnical; Permits:	$	665,000
Engineering Services During Construction; Inspection; QA/QC:	$	1,212,000
Legal; Bond Counsel; Fiscal Services; Easement Assistance; Public Relations:	$	273,000
Construction Contracts:	$	9,314,000
Equipment (High Pressure Flush Equipment, Spare Vacuum Valves, Grinder Pumps, etc.):	$	76,400

Subtotal:	**$**	**11,738,000**
Contingency (20%):	$	2,347,500
Issuance (1.7%):	$	239,500
Total Project Estimated Cost:	**$**	**14,325,000**

Conclusion

In order to assure the long term health and safety of the residents of the hamlet of Ashville and the adjacent areas as well as to protect the water quality of Chautauqua Lake and its tributaries the South and Center Chautauqua Lake Sewer Districts should seek loans or grants to assist in the funding of the extension of its existing service area into the hamlet of Ashville as detailed in this report. As the contamination to the environment and the potential risk to people in the community are currently ongoing, this work to remedy these septic system defects and to install public sewers should proceed immediately. The S&CCLSD treatment works and interceptor sewers that will serve the proposed project were constructed in 1980. These facilities were designed and permitted for 4.1 million gallons per day (MGD) average daily flow plus a 2.5 peak flow factor. A 40% reserve capacity exists while design flow from Ashville will utilize only 5% of this reserve.

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