Wayne County Water and Sewer Authority

3377 Daansen Road
Walworth, NY 14568

LONG TERM WATER SUPPLY STUDY
for
THE SOUTH EAST QUADRANT OF WAYNE COUNTY

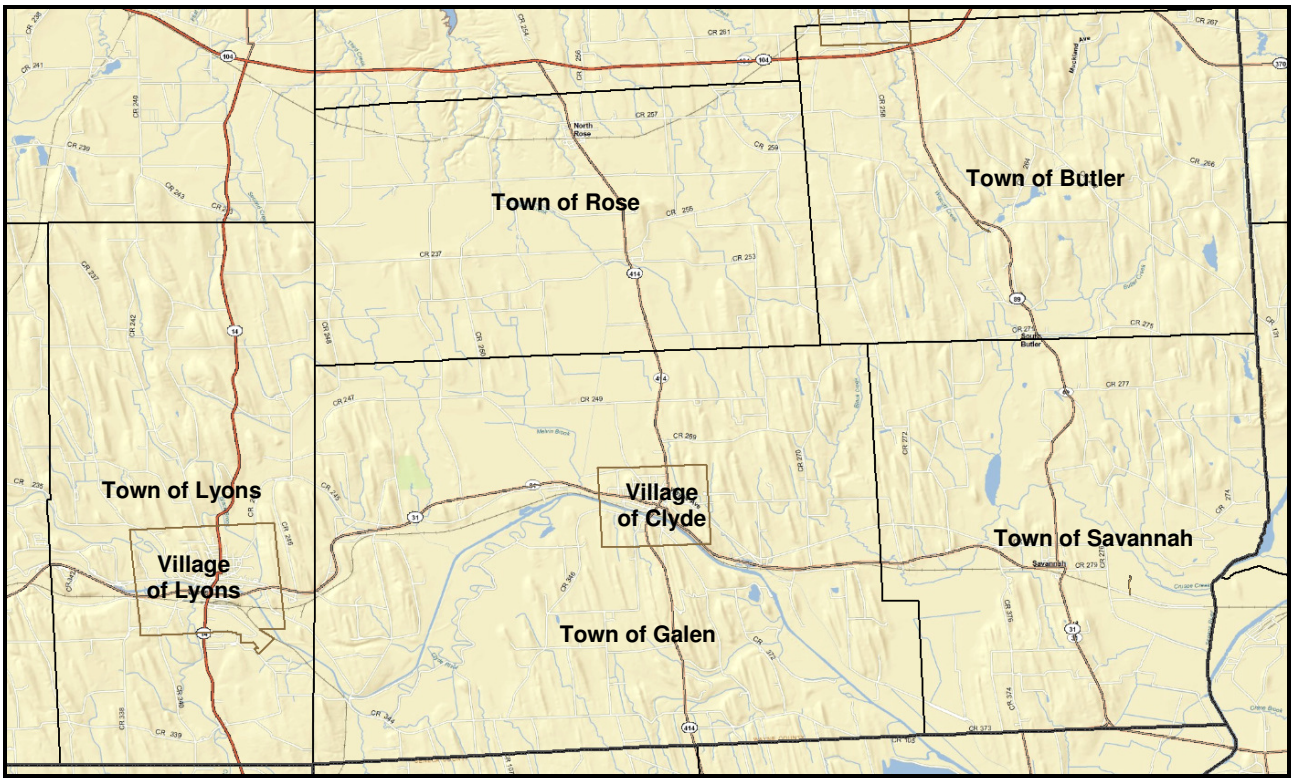

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

APPENDICES

LIST OF APPENDICES

EXECUTIVE SUMMARY

This study provides a regional framework for the supply and distribution of public water to the five towns and two villages in southeast Wayne County that comprise the primary study area – Towns of Butler, Galen, Lyons, Rose and Savannah and the Villages of Clyde and Lyons. The study examined demand, supply, and transmission as well as the potential for cost savings and/or improved efficiency in the management of water services in the region.

Potential growth areas within the primary study area were identified and mapped in order to project the future demand for water supplies. Water supplies will be needed to accommodate existing land uses as well as the future needs of agricultural, residential, commercial and industrial development. The study projected the total future maximum day demand for southeast Wayne County municipalities to be 2.165 million gallons per day (mgd).

Existing water supplies produced within the study area are maintained by the Villages of Clyde and Lyons and the Towns of Rose and Savannah. These supplies have the capacity to produce a total of 1.382 mgd. The net unmet demand within the study area is 0.783 million gallons per day.

Potential alternative sources of supply include sources within Wayne County as well as sources to the south in Ontario and Seneca Counties (City of Geneva, Village of Waterloo and Village of Seneca Falls). Existing water suppliers within Wayne County, including the Village of Newark and the various suppliers of bulk water purchased by the Wayne County Water & Sewer Authority (WCWSA), have a total 1.6 million gallons of reserve capacity that could be made available for purchase by study area communities. Although suppliers to the south also have large quantities of water available, accessing these supplies would require the construction of additional pumping facilities and several miles of new transmission mains. In contrast, the supplies in Wayne County could be conveyed to southeast Wayne County communities at much lower initial costs.

Transmission and distribution networks were evaluated to determine the most efficient and effective way to convey water from existing sources to southeastern Wayne County communities. The study evaluated system pressures, storage needs, fire flow, and existing transmission limitations. Potential transmission alternatives were evaluated using a hydraulic model.

The study presents three supply alternatives that serve as a regional framework for the provision of water to southeast Wayne County communities. Each alternative includes both 12” diameter transmission mains in designated corridors as well as smaller distribution mains to serve the growth

areas identified within each municipality. Each alternative was designed to meet required standards for pressure and fire flow and is based on the supply of water from sources within Wayne County. The three water supply alternatives have several common components, such as a main transmission corridor along Route 31, and other components that are interchangeable.

The development of the transmission mains is critical to the implementation of the regional framework. Water mains located along designated transmission corridors will be 12" in diameter. Estimated costs for the recommended transmission mains total nearly $13.8 million. The study identifies the potential projects that would comprise the regional system of transmission mains and estimates the total cost and cost per "Equivalent Dwelling Unit" for each project.

The study also included an overview of the institutional structures associated with water supply and distribution. Those municipalities that currently distribute their own water supplies (Villages of Lyons and Clyde and the Towns of Rose and Savannah) should continue to maintain their water departments. However, they should consider consolidating or sharing services such as billing in order to reduce costs and improve efficiencies. In addition, the Village of Lyons can realize cost savings by closing its current supply and purchasing water in bulk.

The Wayne County Water & Sewer Authority (WCWSA) is empowered to provide water and sewer services to customers throughout Wayne County and currently serves portions of the Towns of Butler and Lyons. The study recommends that the WCWSA operate and maintain water lines in those municipalities that currently do not currently have water system staff (Towns of Butler, Lyons and Galen).

Town or County water districts should be established to accommodate the construction of new transmission mains in Towns outside the Villages. The additional cost of constructing a 12" transmission main rather than an 8" distribution main will be borne by a regional entity or shared among the benefiting jurisdictions. Roles and responsibilities of all involved entities will need to be specified in an Inter-municipal Agreement. Funding from government grants and other sources will be needed to implement the regional water supply plan.

I. INTRODUCTION

The five towns and villages in the southeastern area of Wayne County have been working cooperatively with the Wayne County Water and Sewer Authority and the Wayne County Industrial Development Agency (WCIDA) to prepare a long term water supply plan for the southeastern area of Wayne County. This study examines the potential benefits and financial savings that could occur through improved cooperation and sharing in the delivery of public water services within the region. The primary study area encompasses the Towns of Lyons, Galen, Savannah, Butler and Rose and the Villages of Lyons and Clyde. The Village of Newark in Wayne County and the Village of Waterloo in Seneca County also participated in the study as potential water suppliers.

The first part of report documents the research and findings relating to regional water supply and demand. The second part addresses transmission, storage, and hydraulics, includes an evaluation of water supply alternatives and recommends a set of actions to be taken by the participating municipalities.

A. BACKGROUND

Each town and village within the service area is presently dealing with one or more public water concerns. These concerns include, but are not limited to, having an adequate supply, transmission and distribution problems, water quality issues and insuring sufficient storage capacity. The following points highlight the principal water supply concerns which collectively gave rise to the study:

- Most of the residents in the **Towns of Rose, Galen, Lyons, Butler and Savannah** do not have access to public water supplies and are dependent upon private wells for their water supply. The reliability of these sources has been adversely impacted by lower precipitation totals during the last several years. In addition, these well supplies are susceptible to contamination by the infiltration of bacteria and harmful chemicals into the drinking water.
- The **Villages of Lyons, and Clyde and the Hamlets of Rose, North Rose and Savannah** are served by public water systems, but these systems do not extend significantly into the adjoining towns.
- The **Town of Savannah** is facing a regulatory mandate to either install a filtration system for its springs supply or identify a new filtered source by 2011.
- The **Town of Galen** is exploring the establishment of its initial water district; an indication that the Village of Clyde may be asked to extend services into the town in the near future.

- During the past decade the **Town of Rose** has expanded its public water system but is concerned about variations in the quality of its supplies.
- The **Town of Butler** is examining the potential for the expansion of public water services.
- The **Village of Waterloo** has an ample excess supply of water and may serve as a potential supplier of water to the region.
- Some of the existing water supply infrastructure in the region is reaching the end of its useful life and will require significant investments to maintain its functionality.

B. PURPOSE AND OBJECTIVE OF STUDY

The purpose of the study is to identify how communities in the region can work together to best meet the area's water supply needs, identify opportunities to save money, and to streamline government operations. The study focuses on regionally beneficial capital improvement projects, shared supply options, and the consolidation of day-to-day operations. The plan addresses the need for physical improvements as well as organizational and management improvements necessary to achieve cost savings and efficient delivery of services. Elimination of existing redundancies (such activities as drawing and treating the supply, maintaining operational staff and equipment, purchasing and stocking replacement parts, reading meters and billing, etc.) may be an outcome of the study.

C. METHODOLOGY

This study was funded in part by two State grants. The Village of Clyde received a grant in the amount of $25,000 through a Community Development Block Grant (CDBG) Community Planning Grant. A consortium of municipalities received a Local Government Efficiency (LGE) grant in the amount of $50,000. The Wayne County Industrial Development Agency (WCIDA) agreed to contribute $75,000 to provide the required local match for the two state grants.

The Wayne County Water & Sewer Authority (WCWSA) is responsible for the day-to-day administration of the study, pursuant to a Memorandum of Understanding between the WCWSA, the Village of Clyde and the WCIDA.

A Steering Committee was organized to guide the planning process. Members included representatives from each of municipalities within the Primary Study Area, water suppliers, the WCWSA and the WCIDA. The Steering Committee retained the team of MRB Group, LaBella Associates, and Stuart I. Brown Associates to undertake the required studies and technical evaluations and to prepare the long term water supply plan.

The Steering Committee met five times during the course of the project. All meetings were open to the public.

October 23, 2008	Consultant interview
June 24, 2009	Project "kick-off"
February 10, 2010	Presentation and discussion of the consultants' findings re: existing and projected water supplies and water demand
	Presentation and discussion of hydraulics and proposed transmission corridors
	Presentation and discussion of implementation recommendations

In addition to the Steering Committee meetings, the consultants met individually with each of the study participants in order to better understand their goals and issues and the opportunities and constraints related to providing or securing public water. These meetings were held on the following dates:

Village of Waterloo:	November 5, 2009
Village of Seneca Falls:	November 10, 2009
Village of Clyde:	November 17, 2009
Town of Galen:	November 25, 2009
Village of Lyons:	November 30, 2009
Town of Rose:	December 12, 2009
City of Geneva	January 7, 2010
Town of Lyons:	January 21, 2010

II. STUDY AREA

A. STUDY AREA GEOGRAPHICAL BOUNDARIES

The Primary Study Area encompasses five towns and two villages in the southeast quadrant of Wayne County, New York:

- Town of Rose
- Town of Butler
- Town of Savannah
- Town of Galen
- Town of Lyons
- Village of Clyde
- Village of Lyons

Figure II.1: Study Area Municipalities and Transportation Corridors, depicts the boundaries of these communities.

The study evaluated the potential of water suppliers located outside of the Primary Study Area to provide water to municipalities within the Primary Study Area. These suppliers included the Village of Newark and Village of Wolcott in Wayne County, the Villages of Waterloo and Seneca Falls in Seneca County, and the City of Geneva in Ontario County, as well as the Wayne County Water & Sewer Authority (WCWSA) and its suppliers.

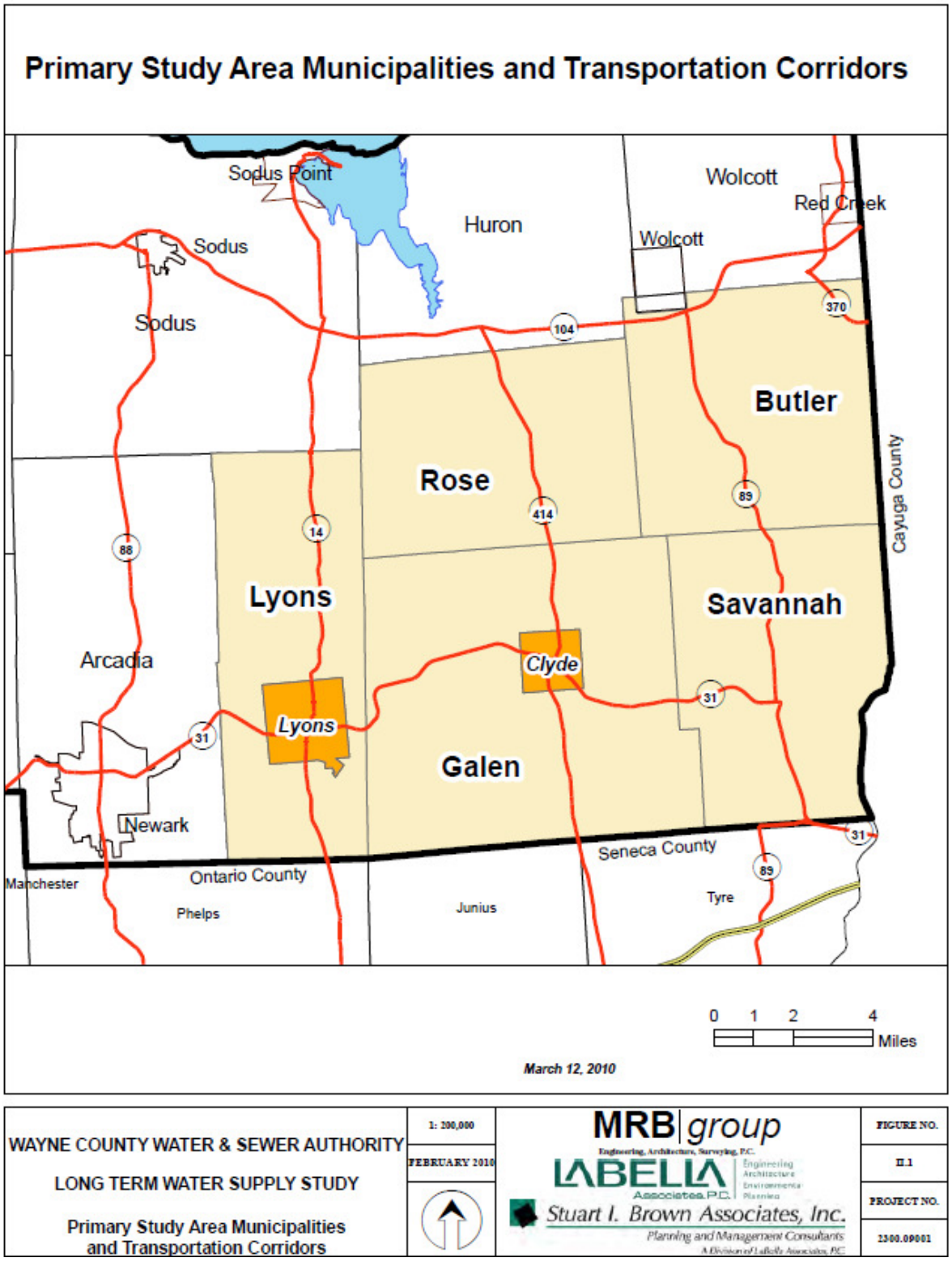
B. AREA DESCRIPTION

Figures II.1 and II.2 depict the main transportation corridors and existing land uses by tax parcel, respectively, within the Primary Study Area. The following narrative summarizes existing land use, population and development patterns in each of the municipalities within the Primary Study Area.

1. Village of Lyons

The Village of Lyons is located in south-central Wayne County, along the Erie Canal, within the Town of Lyons. Highway access is provided by NYS Routes 31 (east-west) and 14 (north-south).

Figure II-1: Study Area Municipalities



As Lyons is the Wayne County seat, several County government offices and facilities are located in the Village, including the County courthouse and a nursing home. The population of the Village was estimated at 3,419 in 2008, representing a decline of 7.5% since 2000 and 20% since 1990. A total of 1,668 housing units were reported in the 2000 Census, of which 1,500 (90%) were occupied. Housing primarily consists of single family detached dwellings (60%) with numerous 2-family dwellings (21%), 3-4 family dwellings (10%), and larger apartment houses (9%).

The downtown business district consists of relatively small retail, service and entertainment businesses. Larger retail businesses are located along NYS Route 31. Several storage and distribution businesses and a small number of manufacturing operations are also located in the Village. Manufacturing operations located in the southeast part of the Village include a Parker Hannefin plant (now closed), Penn Can Materials (asphalt), and Ruspack.

2. Town of Lyons

The Town of Lyons is located in central Wayne County and encompasses the Village of Lyons. NYS Route 14 extends north-south through the Town, and NYS Route 31 and the Erie Canal pass east-west through the Town.

Land use outside of the Village is predominantly agricultural, with residences along most of the roadways. Residential subdivisions are located south of the Village of Lyons east of NYS Route 14. Silgan Containers operates a manufacturing plant east of the Village of Lyons along the railroad track on the north side of Lyons Marengo Road.

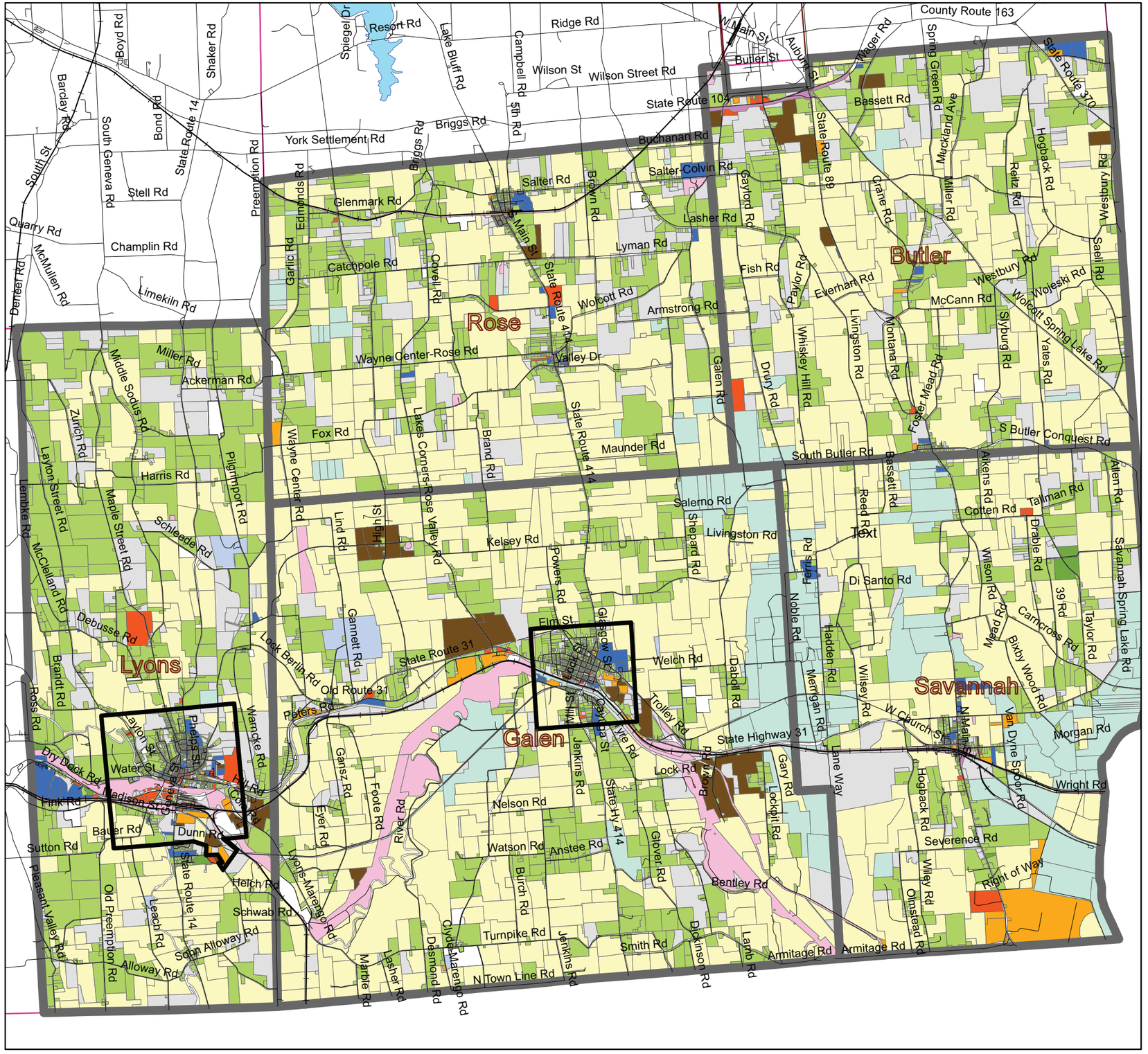
3. Village of Clyde

The Village of Clyde, located entirely within the Town of Galen, is a small Village located along the Erie Canal in eastern Wayne County. NYS Routes 414 (north-south) and 31 (east-west) provide highway access to the Village.

The population in 2008 was estimated at 2,099, which represents a decrease of 7.5% from 2000 and 12.9% from 1990. A total of 967 housing units were reported in the 2000 Census, of which 785 (81%) were occupied. Housing consists primarily of single family dwellings in neighborhoods, with a few apartment buildings.

Figure II-2

Existing Land Use



Land Use by Tax Parcel

- No data
- Agriculture
- Residential
- Vacant
- High Density Residential
- Commercial
- Storage/ Distribution
- Recreation
- Public/ Community Service
- Manufacturing/ Mining
- Utilities/ Transportation
- Conservation

- Study Area Towns
- Villages

0 0.5 1 2 Miles

WAYNE COUNTY WATER AND SEWER AUTHORITY

SE QUADRANT LONG TERM WATER SUPPLY STUDY

Existing Land Use by Tax Parcel

Drawn By: B. Johnston

Scale: 1: 100,000

Date: 3/11/2010

MRB group
Engineering, Architecture, Surveying, P.C.

LABELLA Associates, P.C. | Engineering Architecture Environmental Planning

Stuart I. Brown Associates, Inc. Planning and Management Consultants

A Division of LaBella Associates, P.C.

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The downtown business district consists primarily of small retail and service businesses. The 70-acre Clyde Industrial Park is home to several industries including Thomas Electronics. Currently, the largest employers in the village are Parker Hannifin Corporation (fuel nozzles) and Thomas Electronics of New York, Inc. (cathode ray tubes and assemblies).

4. Town of Galen

The Town of Galen is located in the southeastern part of Wayne County, west of Lyons and east of Savannah. Agriculture is the predominant land use, including extensive mucklands that are utilized for growing onions and potatoes.

The population was estimated by the U.S. Census Bureau at 2,093 in 2008, down slightly from 2,170 in 2000. A total of 967 housing units were reported in the Town outside the Village in 2000, of which 785 (94%) were occupied.

Hamlets located in the Town of Galen include:

- Angells Corners –south part of the town on Route 414
- Lock Berlin –west part of the town on County Route 245 by the route of the Old Erie Canal
- Marengo –southwest part of the town, west of Angells Corners
- Noble Corner – A hamlet on the east town line
- Shepards Corner – A hamlet northeast of Clyde on County Route 269.

Significant employers in the Town outside of the Village include DiSanto Jet Gas and Finger Lakes Construction.

5. Town of Rose

The Town of Rose is located north of the Town of Galen and east of the Town of Lyons. NYS Route 414 extends north-south through the Town.

The population in 2008 was estimated at 2,313, which represents a decline of 5% from the 2000 population of 2,442. The 2000 Census reported a total of 947 housing units, of which 894 (94%) were occupied. Nearly all (95%) of the housing units are single family detached dwellings and manufactured homes.

Development in the Town is concentrated in the hamlets of Rose and North Rose. Agriculture is the predominant land use outside of the hamlets, with residential development along many of the rural roads. A large livestock farm – Marshall Farms – is a major employer in the Town.

Industrial development is primarily agriculture-related, including a Fleichman's Vinegar plant along the east side of Route 414 south of the hamlet of North Rose.

6. Town of Butler

The Town of Butler is located east of the Town of Rose. A portion of the Village of Wolcott is located in the Town of Butler.

NYS Route 89 extends north-south through the Town. NYS Route 104 passes through the northwest portion of the Town and a portion of NYS Route 370 passes through the northeast part of the Town.

Hamlets within the Town of Butler include: South Butler, which is partially located in the Town of Savannah; Butler Center; and Westbury. A NYS correctional facility is located in the northeast part of the Town.

The population of the Town of Butler outside the Village of Wolcott was reported as 1,968 in 2000, an increase of 3% from 1990. A total of 291 of the reported population were in the NYS correctional facilities.

The number of housing units reported by the 2000 Census is 631, of which 598 (95%) were occupied. Nearly all (98%) of the housing units were detached single family dwellings or manufactured homes.

Several commercial businesses, including a gas station and fast food establishment, are located along NYS Route 104 west of the intersection with NYS Route 89. Other businesses in the Town include two sawmills and small retail shops. Agriculture is the predominant industry.

7. Town of Savannah

The Town of Savannah is located in the southeastern corner of Wayne County, east of the Town of Galen and south of the Town of Butler. The hamlet of Savannah is located in the center of the Town.

NYS Routes 89 extends north-south through the Town. NYS Route 31 connects the hamlet of Savannah with the Village of Clyde, and then follows NYS Route 89 south to the Town line.
The Town's population in 2008 was estimated at 1,772 in 2008, representing a decrease of 3.6% from 2000. A total of 715 housing units were reported in the 2000 Census, of which 667 (88%) were occupied. Nearly all (92%) of the housing units were single family dwellings and manufactured homes.

Land use in the Town is predominantly agricultural. Several small retail and services businesses are located in the hamlet of Savannah. Industrial uses are limited to small manufacturing and welding businesses. Agricultural-related businesses include storage and distribution centers.

More than 3,700 acres in the Town are owned by State, federal agencies and private conservation organizations and preserved for wildlife habitat. The Montezuma Audubon Center, located along Route 89, is a regional attraction for birdwatchers.

III. EXISTING INFORMATION AND REPORTS

A. PREVIOUS WATER SUPPLY STUDIES

Several studies have been previously conducted of water systems in and around the study area. These studies were reviewed as part of the research effort for this study, including the following:

- *Engineer's Report for the Town of Savannah Filtration Plant,* MRB Group, (January 2009)
- *Strategic Plan for Water System Improvements for the Town of Wolcott,* MRB Group, (December 2007).
- *Preliminary Long Term Water Supply Study: Western Wayne County Service Area for Wayne County Water & Sewer Authority,* MRB Group, (December 1994)
- *Village of Lyons, City of Geneva, Village of Waterloo, Town of Junius, Town of Phelps, and Wayne County Sewer & Water Authority, Engineer's Report for the Regional Water Improvement Projec*t, MRB Group and McCormick Engineering, (June 2003)
- *Strategic Plan for Water System Improvements for the Town of Wolcott,* MRB Group (December 2007)

B. EXISTING LOCAL, COUNTY, AND REGIONAL PLANS

Two Comprehensive Plans have been completed recently for municipalities within the Primary Study Area:

- Town of Galen, Town of Savannah, Village of Clyde – 2008
- Town of Butler – 2009

The Town of Butler Comprehensive Plan recommends that the Town obtain funding to provide water to the Hamlet of South Butler, to potential development areas along Route 104, and to other areas with poor quality water supplies. A Future Land Use Map identifies the Route 104 Corridor, existing hamlets and other areas as suitable for development. Agriculture is recognized as a significant industry and provisions are included in the Plan to support the agricultural industry and the retention of farmland.

The Galen, Savannah and Clyde Comprehensive Plan includes recommendations in support of economic development, balanced land use development, the continuation of agriculture, natural resource protection, and the extension of water and other public utilities.

The Wayne County Economic Development Strategic Plan, completed in 2006, includes recommendations to promote economic growth in targeted industry "clusters":

- Agriculture-related manufacturing
- Sustainable Energy
- Optics and Technology-based manufacturing
- Equipment manufacturing

The plan encourages investments in infrastructure as well as building effective partnerships among private and public stakeholders.

C. EXISTING LAND USE AND ZONING INFORMATION

There are seven (7) zoning districts within the Town of Galen. These include:

- Land Conservation
- Ag District
- Residential
- Mobile Home Park
- Business
- Industrial
- Planned Development

The Town of Lyons is divided into five (5) zoning districts:

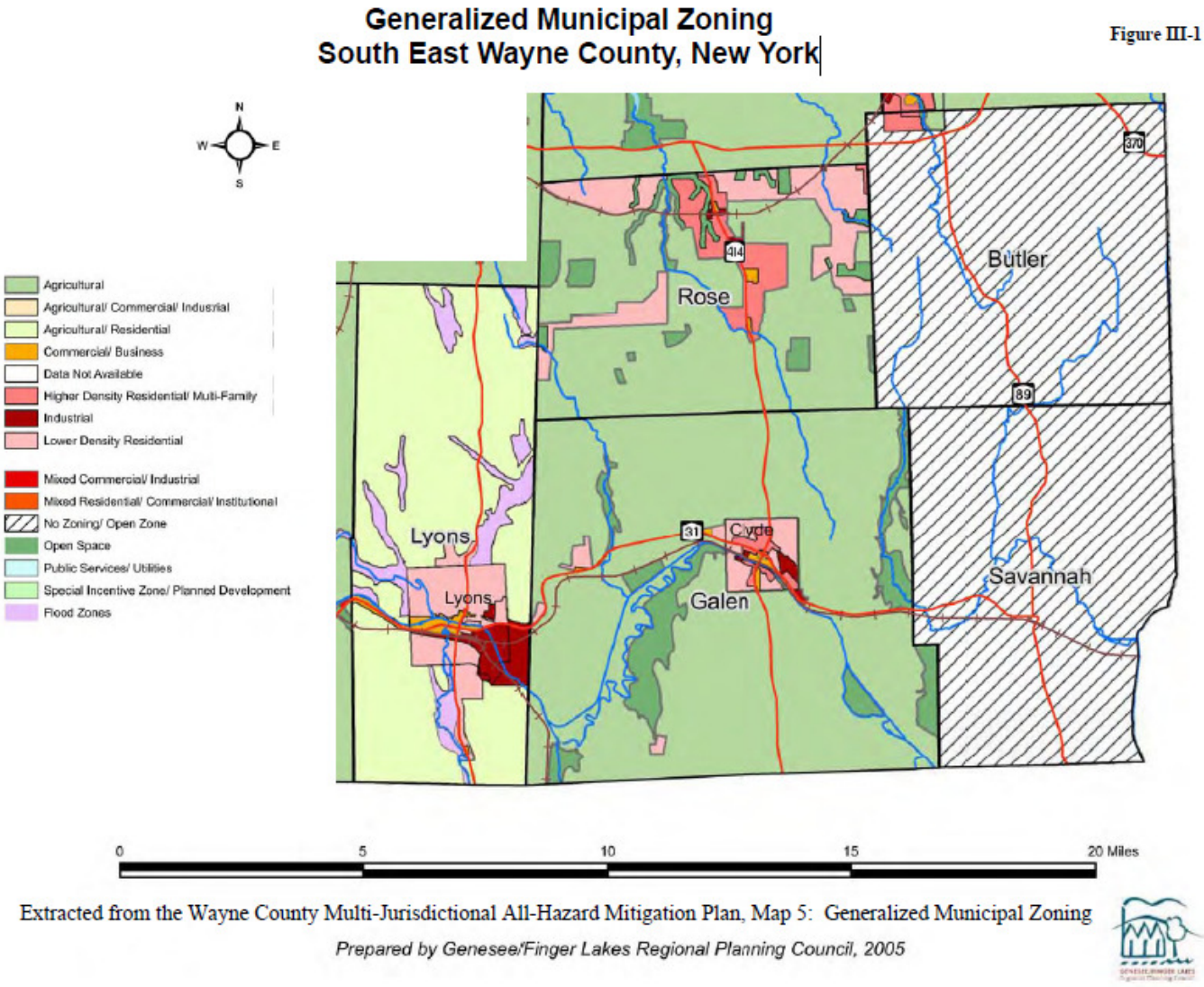
- Residential/ Agricultural
- General Residential
- Commercial
- Industrial

The Town of Rose has four zoning districts:

- Agricultural
- Rural Residential
- Medium Density Residential
- General Business
- Industrial

Figure III-1 presents a generalized depiction of the zoning districts within the study area.

Figure III-1 – Generalized Municipal Zoning



Neither the Town of Butler nor the Town of Savannah have zoning regulations. The Town of Butler is in the process of preparing a comprehensive land use regulations; however, these regulations will not delineate the Town into zoning districts. The Town of Savannah is also in the process of preparing comprehensive land use regulations.

IV. DEMOGRAPHICS OF STUDY AREA

A. STUDY PERIOD

This study aims to project future demand for public water and identify potential suppliers over the next 20 years.

B. EXISTING POPULATIONS AND PROJECTIONS

The southeastern area of Wayne County is essentially rural in character and characterized by agriculture and rural residential areas. Two villages and a number of small hamlets are located within the area. The total population of the seven communities was recorded at 16,539 in the 2000 Census. This represents a decline of 295 people or 1.8 percent from the 1990 total of 16,834. In comparison, the population of Wayne County increased by 5.2 percent during this ten year period.

Between 1990 and 2000 each town reported a small increase in population, ranging from 18 people in Rose to 166 in Galen, while each village experienced a decline in population. The Village of Lyons reported the largest decline with a loss of 595 people. The Village of Clyde lost 140 residents between 1990 and 2000. The population estimates for 2008 demonstrate that Villages and Towns within the Study Area have declined in population since the 2000 Census. Chart IV.1 and Table IV.1 summarizes population trends in this area between 1990 and 2008 and projections through 2030.

Table IV-1 – Population Trends

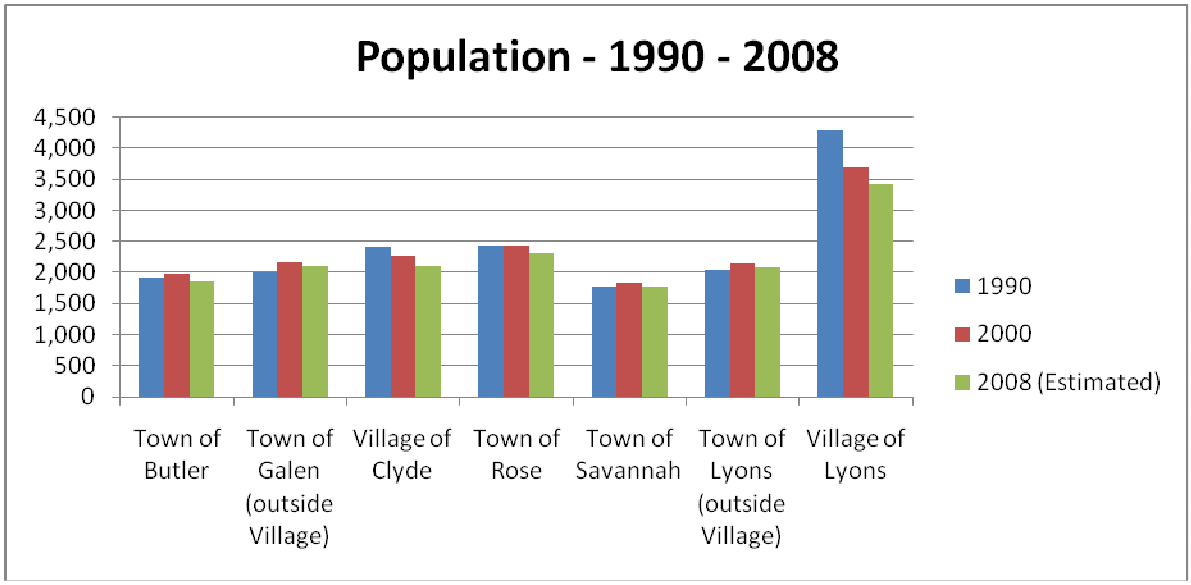
	Total Population							
	1990 Census	2000 Census	Change 1990-2000	2008 Estimate	2010[2] Projection	2030[2] Projection	Projected Percent Change 2000-2030	Adjusted Projected Population - 2030
Town of Butler*	1,914	1,989 [1]	3.9%	1,851[3]	2,009	2,048	4.0%	1,925
Town of Galen*	2,004	2,170	8.3%	2,093	2,190	2,210	2.2%	2,139
Village of Clyde	2,409	2,269	-5.8%	2,099	2,245	2,229	-2.8%	2,041
Town of Rose	2,424	2,442	0.7%	2,313	2,461	2,483	1.9%	2,357
Town of Savannah	1,768	1,838	4.0%	1,772	1,846	1,857	1.0%	1,789
Town of Lyons*	2,035	2,136	5.0%	2,073	2,171	2,203	4.0%	2,156
Village of Lyons	4,280	3,695	-13.7%	3,419	3,636	3,608	-3.2%	3,310
Primary Study Area	16,834	16,539	-1.8%	15,620	16,558	16,638	0.6%	15,718
Wayne County	89,123	93,765	5.2%	91,564	96,499	97,936	4.4%	96,409

Source: GFLRPC (projections); US Census Bureau (counts and estimate); Stuart I. Brown Associates (Adjusted 2030 Projections)

*Town Outside Village

[1] Includes 291 State prison inmates.
[2] Estimates were developed in 2002 following release of 2000 Census data
[3]Assumes no change in population of the portion of the Village of Wolcott located in the Town of Butler between 2000 and 2008
[4]Computed by applying the percent change projected between 2000 and 2030 to the 2008 estimated population

Chart IV-2 - Study Area Population - 1990-2008



As documented in Table IV.1, the population projections prepared following the 2000 Census have not proven to be accurate. In the Towns outside of the Villages, population declines have occurred where increases were projected; in the Villages, population decreases were larger than anticipated. In order to project 2030 population for water demand planning purposes, the 2030 population estimates that were prepared by the Genesee/ Finger Lakes Regional Planning Council following the 2000 Census were adjusted. The adjusted projections assume that between 2008 and 2030, the population will increase at the same rate as was projected to occur between 2000 and 2030. More detailed population projections will be prepared following the 2010 Census.

C. POTENTIAL DEVELOPMENT AREAS

1. Industrial/ Business Development

The availability of fresh water is a significant asset to economic development promotion in Wayne County. Site selectors who have approached the Wayne County Industrial Development Agency have represented businesses with a range of water needs.

The exact location of future industrial development cannot be predicted. Potential locations include existing industrial parks and major transportation corridors throughout the Primary Study Area. Two industrial parks are located within the primary study areas. The Lyons Industrial Park is located in the southeast portion of the Village of Lyons. The Clyde Industrial Park is located on

the eastern side of the Village of Clyde. Both parks have access roads, water mains and sanitary sewer lines in place and have space to accommodate new development.

While certain business may locate within the existing industrial parks, larger scale or unique operations may select a site elsewhere. Potential locations for future industrial development include each of the major transportation corridors within the Study Area: NYS Route 104 in Butler, NYS Route 31 in Lyons, Galen and Savannah, and NYS Route 89 in Butler and Savannah.

2. Agriculture

Agriculture and agri-business represent a significant industry in Wayne County and the region. Both production agriculture and processing require significant amounts of water. Although several large food processing plants in the region have closed in recent years, food processing has traditionally been a strong component of the regional economy. A vinegar plant located in the Town of Rose consumes large quantities of water. Economic development officials would welcome new food processing operations. Dairy, livestock, fruit and vegetable farms have the potential to utilize large quantities of water, although the purchase of public water may not be economically viable for individual farm operations. However, the availability of public water as a backup source may be beneficial to the long-term viability of some farm operations.

3. Residential

Large-scale residential development is not anticipated, due to market conditions. Incremental residential development, primarily in the Towns outside of the Villages, is anticipated. Development of senior housing or apartment complexes may occur within the Villages of Clyde or Lyons.

D. PROBABLE/PLANNED TARGET AREAS FOR GROWTH

Representatives of each Town in the Primary Study Area identified locations where growth and demand for water was planned and/or probable. These areas are depicted in Figure IV-1.

The number of residences and businesses in these targeted service areas were computed from current tax parcel data and a total number of Equivalent Dwelling Units was calculated for each area. A growth/infill rate of 5% was assumed. Table IV.2 presents the total number of EDUs anticipated in the targeted growth areas.

Table IV.2 and Figure IV.1 characterize the anticipated water demand in areas that the municipalities anticipate serving during the next 10 years. Although the location of water line extensions more than 10 years in the future have not been determined, it is reasonable to assume that such extensions will be constructed. The next section addresses the quantification of demand.

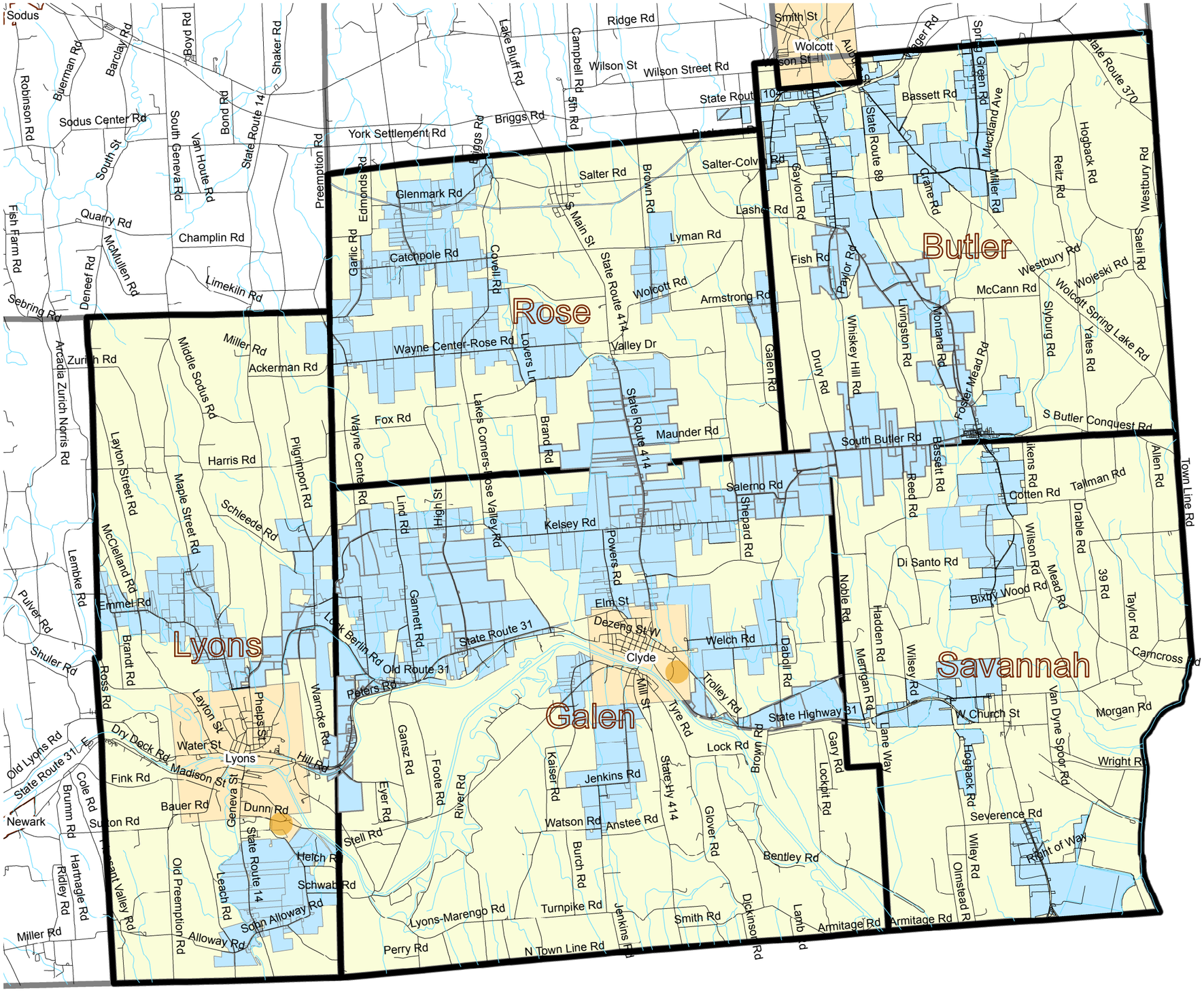
Table IV-3: Land Use by Parcel and Equivalent Dwelling Units (EDUs) in Potential Service Areas by Municipality

	Butler		Galen		Rose		Savannah		Lyons	
	Parcels	EDUs	Parcels	EDUs	Parcels	EDUs	Parcels	EDUs	Parcels	EDUs
Single Family Dwellings	160	160.0	261	261.0	150	150.0	65	65.0	143	143.0
2-Family Dwellings	4	8.0	4	8.0	1	2.0			2	4.0
Mobile Home Park							1	5.0	1	5.0
Inn/ Boarding House							1	2.0		
Multiple Dwellings	5	10.0	4	8.0	5	10.0	3	6.0	3	6.0
Agriculture	32	10.7	86	28.7	49	16.3	20	6.7	33	11.0
Manufacturing			1	3.0	1	3.0				
Commercial/ Recreation	11	5.5	5	2.5	2	1.0	1	0.5	3	1.5
Storage/ Distribution	3	1.5	6	3.0		0.0	5	2.5	1	0.5
Mining	2	1.0	4	2.0						
Transportation/ Utilities	2	1.0	4	2.0					1	0.5
Government	6	2.0	4	1.3	1	0.3	1	0.3	2	0.7
Vacant	49	0.0	47	0.0	35	0.0	14	0.0	45	0.0
Conservation	2	0.0	7	0.0			9	0.0		
Sub-Total:	276	199.7	433	319.5	244	182.6	120	88.0	234	172.2
Potential Growth (5%)		10.0		16.0		9.1		4.4		8.6
Total EDUs:		209.7		335.5		191.7		92.4		180.8
Average HH size (2000)		2.67		2.69		2.72		2.75		2.50

Figure IV.1

Potential Water Service Areas

Revised Draft June 10, 2010



WAYNE COUNTY WATER AND SEWER AUTHORITY

SE QUADRANT LONG TERM WATER SUPPLY STUDY

Existing and Potential Water Service Areas

N W E S

Drawn By:	Scale:	Date:
B. Johnston	1: 100,000	6/10/2010

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Architecture
Landscape Architecture
Environmental
Planning
Stuart I. Brown Associates, Inc.
Planning and Management Consultants
A Division of LaBella Associates, P.C.

FIGURE NO.
IV.1

PROJECT NO.
2300.09001

Y:\Wayne County Water & Sewage Authority\209433 SE Wayne Water Study\GIS\ExistingPotentialWaterServiceAreasMap.mxd

V. PRESENT AND PROJECTED WATER DEMANDS

A. METHODOLOGY

As part of the interviews with municipalities within the Primary Service Area, and review of planning documents, information was gathered on service areas and existing demands. This information was evaluated to determine the demand characteristics for each municipality. Using the demographic data developed in the preceding section, future demands through the study period were projected.

1. Existing Average Daily Demand

The existing average daily demand was taken as the average water production over the trailing 36-month period, as indicated in recent planning studies, or as determined in interviews.

2. Existing Maximum Day Demand

The maximum day demand was taken as the highest three-day average over the trailing 36-month period, or as indicated in recent planning studies. This methodology provides a more realistic value than the absolute maximum day water production as it minimizes the impacts of irregularities in water production due to unique events (for example water main breaks, fires or hydrant flushing operations), operator preference with regard to water production, or daily production recording practices.

3. Future Additional Demand

Additional demand occurs through expansion of the service area and new development. The demand associated with expansion of the service area was calculated as the product of the projected EDU's in the Probable/Planned Target Area (see table IV.2), the average household size for each municipality and a per capita demand of 75 gallons per day. Since the Probable/Planned Target Area for expansion was indentified for only a ten-year period, the number of additional EDU's in each municipality was doubled for the 20-year study period. The demand from new development was taken as the municipality's population growth through 2030.

Villages within the Primary Study Area have limited areas for expansion and are projected to experience a slightly declining population. Water demands were considered to remain constant over the study period in consideration of the aging infrastructure in these areas.

The Primary Study Area is strongly positioned to attract significant industrial and/or commercial businesses. These businesses may locate in existing industrial parks, such as exist in the Villages of Clyde and Lyons, or in the Towns where larger parcels predominate. A future regional demand of 0.200 MGD was included to enable the area to support larger industrial water users.

4. Future Maximum Day Demand

The future maximum day demand was calculated as the sum the existing maximum day demand and the maximum day demand resulting from the future additional demand. The ratio of maximum day to average day was taken as 1.5.

An adjustment was made to future demands for the Village of Lyons to consider the largest water user, Parker Hannifin, closed in the beginning of 2010.

B. EXISTING WATER SYSTEMS AND DEMANDS

A brief summary of each municipality's service area and their related demands is provided below:

1. Town of Butler

Currently, the Town doesn't have any water districts. A very limited area along NYS Route 370 to the NYS correctional facility is serviced by the WCS&WA. A small area along 104, south of the Village of Wolcott, is serviced by the Village. The future maximum day demand is projected to be 0.134 MGD.

2. Town of Galen

The Town of Galen has no water districts. A small area along the Village of Clyde's transmission main is serviced by the Village. The future maximum day demand is projected to be 0.209 MGD.

3. Town of Lyons

Very limited areas south and west of the Village of Lyons are presently serviced with public water. The future maximum day demand is projected to be 0.111 MGD.

4. Town of Rose

The Town of Rose operates and maintains a distribution system that primarily services the northeast quadrant of the Town, including the hamlets of Rose and North Rose.

The Town currently produces an average of 0.281 MGD, with a maximum day demand of 0.512 MGD. The Town anticipates a significant expansion of the Town's water system. An increase of 0.122 MGD in future maximum day demand is projected, resulting in a future maximum day demand of 0.634 MGD.

5. Town of Savannah

The Town of Savannah operates and maintains a distribution system that services the more developed areas of the Town – primarily around the former Village of Savannah.

The Town currently produces an average of 0.051 MGD, with a maximum day demand of 0.058 MGD. An increase of 0.059 MGD in future maximum day demand was calculated, resulting in a future maximum day demand of 0.117 MGD.

6. Village of Clyde

The Village of Clyde operates and maintains a distribution system that services the Village, as well as a permissive service area along the transmission main between their wells, located in the Town of Galen, and the Village.

The Village currently produces an average of 0.218 MGD, with a maximum daily demand of 0.377 MGD. Future demands are anticipated to remain constant.

7. Village of Lyons

The Village of Lyons operates and maintains a distribution system that services the Village, as well as short extensions into the Town of Lyons to the north along Phelps Street, to the east along Cole Road, and to the south along Geneva Street. Extensions to the west connect the Village's system to both the Village of Newark (along Route 31) and the WCS&WA system (along Old Newark Lyons Road to Ross Road).

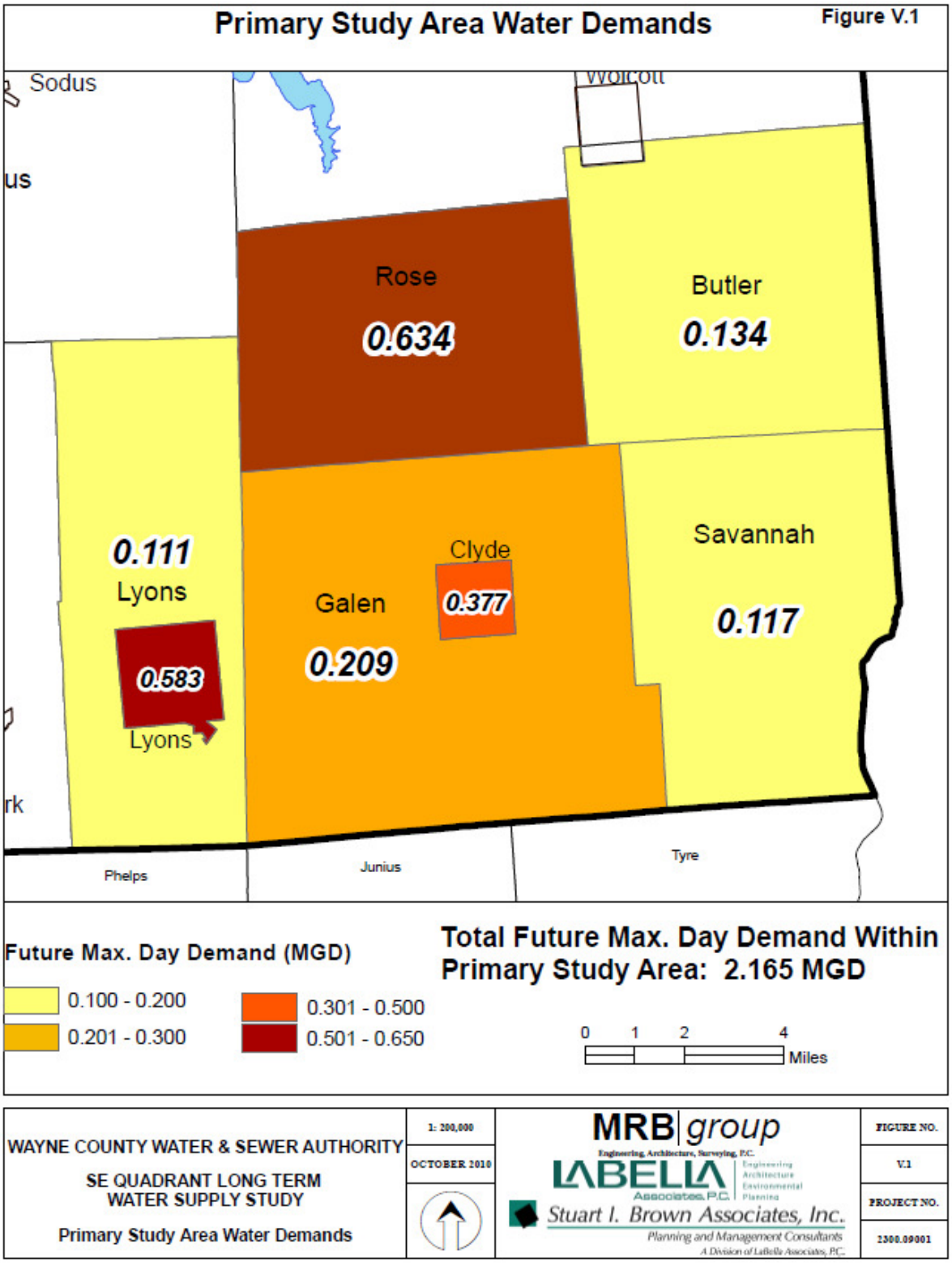
The Village currently produces an average of 0.312 MGD, with a maximum daily production of 0.447 MGD. In addition to the water produced by the Village, an average of 0.200 MGD is purchased from WCS&WA to meet Village demands. In consideration of this bulk water purchase, the average daily demand was taken as 0.512 MGD and maximum day demand as 0.647 MGD. The future maximum day demand is projected to be 0.583 following the adjustment for the closing of Parker Hannifin.

Table V-1 summarizes existing and future water demands within the Primary Service Area. The future maximum day demands are shown graphically in Figure V.1.

Table V-1: Water Demands within the Primary Service Area

Municipality	Existing Service Area Average Daily Demand (MGD)	Existing Service Area Max Daily Demand (MGD)	Total Increase in Service Area Max Daily Demand (MGD)	Future Service Area Max Daily Demand (MGD)
Town of Butler	0.000	0.000	0.134	0.134
Town of Galen	0.000	0.000	0.209	0.209
Town of Lyons	0.000	0.000	0.111	0.111
Town of Rose	0.281	0.512	0.122	0.634
Town of Savannah	0.051	0.058	0.059	0.117
Village of Clyde	0.218	0.377	0.000	0.377
Village of Lyons	0.512	0.647	-0.064	0.583

Figure V-1: Primary Study Area Water Demands



VI. WATER SUPPLY

A. METHODOLOGY

Water purveyors within the Primary Study Area and surrounding region were interviewed to determine their ability and willingness to supply other/additional municipalities. These interviews collected general information regarding the type of supply, water quality, method of treatment and production demands.

Each supply was evaluated in accordance within the guidelines established by the Recommended Standards for Water Works. The supply capacity was determined with the largest source or treatment component out of service. The reserve capacity, the amount of water potentially available to meet demands outside current service areas, was taken as the difference between the supply capacity and the future maximum day demand.

In response to The Safe Drinking Water Act amendments enacted by Congress in 1996, the New York State Department of Health completed its "New York State Source Water Assessment Program Plan." A supplement to the Plan was issued in 2004 to further clarify the process of assessing surface water supplies. The program evaluated all sources of water (e.g. well, stream, lake reservoir) used by public water systems in the State to identify possible contaminant threats to the source water quality. Elements of each source evaluation included: delineation of the source water assessment area (identifying the land boundary that contributes water to a source), identifying potential contaminant sources that could affect the quality of the source water, and conducting a susceptibility analysis (evaluating the likelihood that a source could be contaminated).

In order to consistently rate the susceptibility of all water sources to various contaminants, the program utilized susceptibility matrices. The matrices considered the prevalence of a particular contaminant, as well as the natural sensitivity of the water source to facilitate development of the susceptibility ratings for various contaminants. The rating classifications included in the matrices are: "low", "medium", "medium-high", "high," and "very high." Although the matrices were developed to standardize the susceptibility ratings for all water sources, source water assessments of surface waters in the study area were summarized utilizing a more subjective approach. Ground water assessments were summarized using the ratings included in the matrices. The different approaches used to develop the summaries for ground and surface water supplies make comparing the relative susceptibility to contamination of the different supplies difficult.

B. EXISTING WATER SUPPLIERS WITHIN PRIMARY STUDY AREA

1. Town of Rose

The Town's primary sources of supply are two groundwater wells located on Salter Colvin Road. Well No. 2 has a pumping capacity of 200 gpm and Well No. 4 has a pumping capacity of 350 gpm. The water quality from Well No. 2 is reported by the Town to be very good, with slight hardness. The water quality of Well No. 4 is reportedly poor, due to high sulfur content. The Town also has an emergency well, Well No. 3, located on Catchpole Road, whose quality is also reported to be poor due to high sulfur content. This source is considered an emergency supply source by the Town and was not considered as a viable supply for this study. With the largest component out of service, the supply capacity of the system is 0.288 MGD.

Treatment of water from Well No. 2 consists solely of disinfection using chlorine. Treatment of water from Well No. 4 requires sulfur removal through GAC filters and disinfection using chlorine. Treatment of water from the emergency well, Well No. 3, consists of aeration, pressure sand filter filtration, and disinfection using chlorine.

The New York State Department of Health has completed a source water assessment for the Town's supply. Possible and actual threats to the drinking water supply were evaluated. The assessment rated Wells No. 1 and 2 as having a medium-high susceptibility to microbials, nitrates, industrial solvents, metals, pesticides, and petroleum products. While no significant sources of contamination have been identified in the areas, the wells draw greater than 100 gpm from an unconfined aquifer. Well No. 3 has been rated as having a high susceptibility to nitrates, a medium-high susceptibility to industrial solvents, petroleum products, metals, pesticides and other industrial contaminants, and a medium susceptibility to microbials. These ratings are due primarily to the close proximity of permitted discharge facilities (industrial/commercial facilities that discharge waste water into the environment and are regulated by the state and or federal government) to the assessment area. In addition, the well has detections of sulfate at levels consistent with a high chemical sensitivity and the well is screened in a confined aquifer with an estimated recharge area within the selected time of travel. Well No. 4 has been rated as having a high susceptibility to some microbials and a medium-high susceptibility to other microbials, industrial solvents, petroleum products, nitrates, metals, and pesticides. These ratings are due primarily to low intensity residential activities in the assessment area. In addition, the wells draw more than 100 gpm from an unconfined aquifer.

The Town currently produces an average of 0.281 MGD, with a maximum daily demand of 0.512 MGD. This maximum demand is in excess of the Town's supply capacity of 0.288 MGD; therefore the Town's supply is not adequate to meet the existing demands within the system and therefore has no reserve capacity.

The Town is currently capable of meeting the maximum daily demand by utilizing both wells; however the requirements outlined in The Recommended Standards for Water Works indicate that a water supplier must have sufficient supply to satisfy the maximum day demand with the largest source or treatment component out of service.

The difference between the future maximum day demand and the Town's supply capacity, 0.346 MGD, is the quantity of water the Town would need to purchase to satisfy future maximum day demands in accordance with the regulations.

The Town currently sells water to residents on a quarterly basis for $7.00 for the first 6,000 gallons, plus $2.25 per 1,000 gallons above 6,000 gallons.

2. Town of Savannah

The Town's primary source of supply is a shallow spring with a permitted withdrawal rate of 0.194 MGD. The spring has provided consistent water supply for many years with limited interruption of service. A groundwater well adjacent to the spring functions as a supplementary source. The well produces a limited quantity of poor quality water and is seldom used; therefore, was not considered as a viable source for this study. Current treatment of the water from the Town's sources consists solely of disinfection using chlorine, prior to discharge to the distribution system. The operator currently operates the pumps at the reduced flow rate of 0.130 MGD and reports that this flow rate has not resulted in negative impacts to the spring supply.

The New York State Department of Health has completed a source water assessment for the Town's supply. The assessment found an elevated susceptibility to contamination for this source of drinking water. The amount of agricultural lands in the assessment area results in elevated potential for protozoa and pesticides contamination. There is also a high density of sanitary wastewater discharges which results in elevated susceptibility for nearly all contaminate categories. There are no noteworthy contamination threats associated with other discrete contaminant sources. Finally, it should be noted that

underground water flows to springs can make these drinking water sources highly sensitive to existing and new sources of contamination from solvents and petroleum products.

In February 2005, the NYSDOH informed the Town that the spring is potentially under the influence of surface water. The minimum treatment for water supplies considered "Groundwater under the Direct Influence of Surface Water" (GWUDI) is filtration and disinfection (according to the Surface Water Treatment Rule). The Town has retained a consultant to prepare an engineering report recommending required improvements in order to apply for project funding. The NYSDOH initially indicated the deadline for the Town to achieve compliance with the Surface Water Treatment Rule was June 30, 2006. This deadline has since been extended to February 2011.

The recommendations for bringing the Town's water supply system into compliance with the regulations include installation of two parallel filtration trains, each capable of processing the maximum permitted withdrawal rate of 135 gpm (0.194 MGD). The Town is currently in the process of securing project funding, therefore the supply capacity of the proposed filtration system was utilized in this study. The reserve capacity of the Town's supply is 0.077 MGD.

The Town currently sells water to residents for $40 per quarter including the first 3,000 gallons plus $4.25 per 1,000 gallons above 3,000.

3. Village of Clyde

The Village's water supply consists of two groundwater wells, Nos. 2 and 3, each with a pumping capacity of 300 gpm. The total permitted take of the supply is 0.256 MGD. With the largest component out of service, the supply capacity of the system is 0.432 MGD. If the Village was to become a supplier to additional municipalities, the Village's Water Supply Permit would need to be amended to increase the permitted take of the supply.

The groundwater supply is reported to be of good quality and treatment consists of sequestration for corrosion control and disinfection using chlorine. There are no known major capital improvements required in order to maintain the system's current production level.

The New York State Department of Health has completed a source water assessment for the Village's Well No. 2. The assessment rated the well as having a medium susceptibility to protozoa, enteric bacteria and viruses, a medium-high susceptibility to pesticides, metals, nitrates, and a high susceptibility to industrial solvents, petroleum products and other industrial organics, salts and sulfates. These ratings are due primarily to the agricultural and mining land uses in the assessment

area. Well No. 3 was not installed at the time the assessment was conducted, however the Health Department has indicated that the assessment for Well No. 2 is a close approximation for Well No. 3's assessment as they are located approximately 150 feet apart.

The Town of Galen has formed an Aquifer Protection Overlay District (APOD) in the vicinity of the groundwater wells in an effort to further protect the water quality of the supply and minimize the likelihood of future contamination of the supply resulting from surrounding land uses.

The available reserve capacity of the Village's supply was determined to be 0.055 MGD.

The Village currently sells water to residents inside the Village for $10 per quarter plus $3.00 per 1,000 gallons. Users outside the Village limits are charged 150% of the Village rate.

4. Village of Lyons

The Village's water supply consists of two groundwater wells. Well No. 2 has a pumping capacity of 425 gpm and Well No. 3 has a pumping capacity of 325 gpm. The total permitted take of the supply is 1.224 MGD. Existing components of the system significantly restrict the amount of water that can be produced. With the largest component out of service, the supply capacity of the system is 0.468 MGD.

The raw groundwater supply contains elevated iron content, turbidity and hardness levels that require treatment consists of softening, sequestration and disinfection using chlorine. The Village reports that the finished water is of good quality.

The New York State Department of Health has completed a source water assessment for the Village's supply. The assessment rated Well No. 2 and 3 as having a medium-high susceptibility to microbials, nitrates, industrial solvents, metals, pesticides, and other industrial contaminants and petroleum products. These ratings are due primarily to the close proximity of permitted discharge facilities (industrial/commercial facilities that discharge waste water into the environment and are regulated by the state and or federal government) to the wells, chemical bulk storage(s), pasture, and low intensity residential activity in the assessment area. In addition, the wells draw from an unconfined aquifer of unknown hydraulic conductivity.

Many components of the Village's treatment system have, or are reaching the end of their useful life and are in need of replacement. Significant capital improvements would be required in order to maintain the Village's water supply as a viable, long term supply for the study area.

The Village has indicated that their supply currently has adequate sanitary protection. There are no known plans to further protect the source and minimize the likelihood of any negative impacts to the supply resulting from surrounding land uses.

The Village currently produces an average of 0.312 MGD, with a maximum day production of 0.447 MGD. The Village supplements its water production with bulk water purchase from the WCS&WA at an average rate of 0.200 MGD. The Village's maximum day demand is 0.583 MGD (includes reduction for Parker Hannifin closing). This maximum day demand is in excess of the Village's supply capacity of 0.468 MGD. The Village is currently capable of meeting the maximum day demand by utilizing a combination of pumping from both wells and purchasing bulk water through WCS&WA, and therefore has no reserve capacity.

The Recommended Standards for Water Works indicates the Village should have sufficient supply to satisfy the maximum day demand with the largest source or treatment component out of service. The Village will need to be able to purchase at least 0.115 MGD to be in compliance with this guideline.

The Village currently sells water to residents inside the Village for $36 per quarter for the first 5,000 gallons plus $4.70 per additional 1,000 gallons. Users outside the Village limits are charged $59 per quarter for the first 5,000 gallons plus $6.50 per additional 1,000 gallons.

5. Primary Study Area Summary

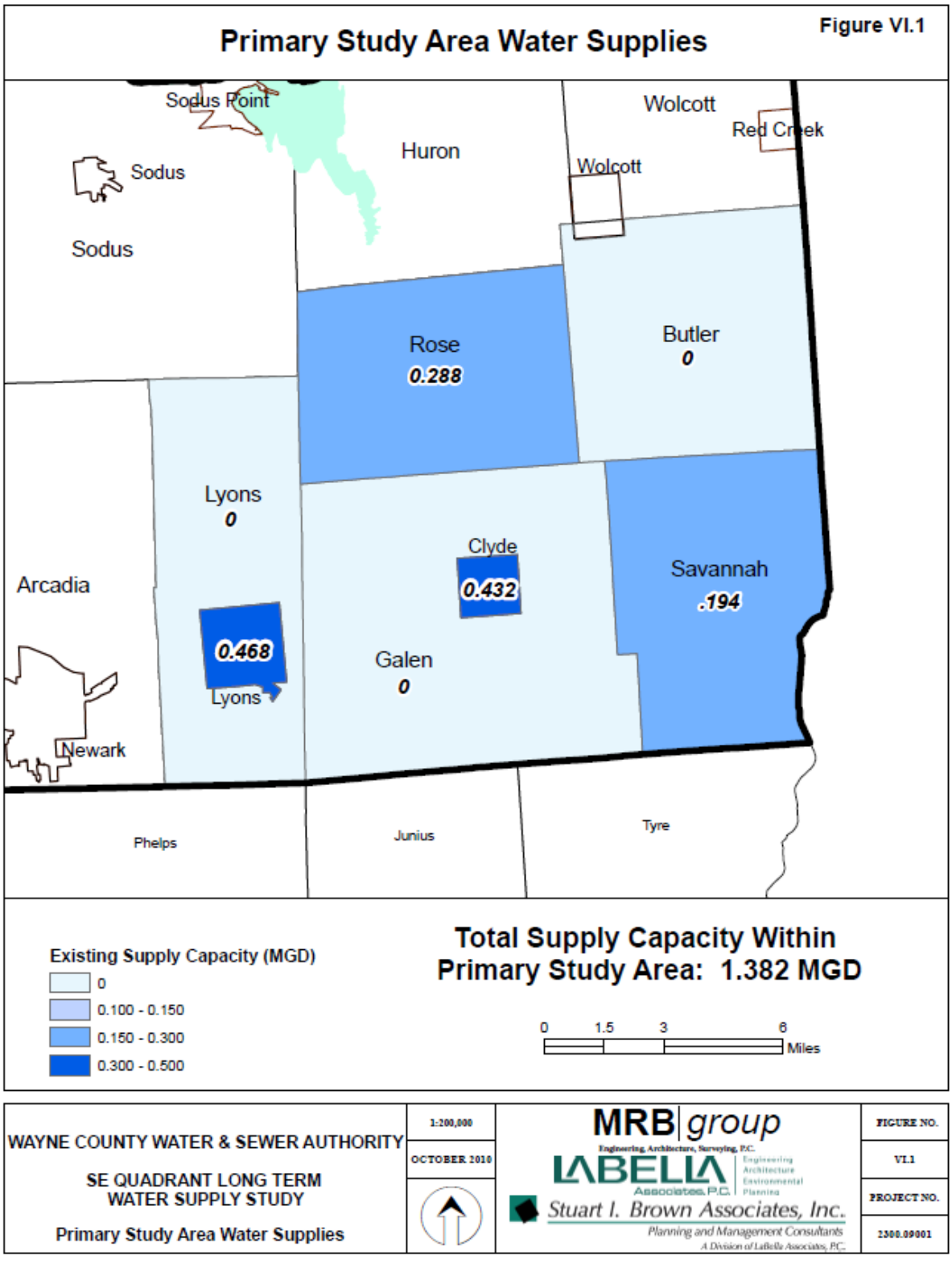
The Primary Study Area water supplies are summarized graphically in Figure VI.1. The total supply capacity of the municipalities included in the Primary Study Area is 1.382 MGD. The total future maximum day demand of all Primary Study Area municipalities is calculated as 2.365 MGD, with the addition of the 0.200 MGD allowance for commercial/industrial growth. The total supply capacity of the Primary Study Area is less than the calculated total future maximum day water demand, resulting in the need for an additional supply of 0.983 MGD.

The calculation of total supply capacity considers that the largest source or component from each supplier is taken out of service at the same time. Should interconnections be constructed between

suppliers in the study area, it is reasonable to revise the calculation of total supply capacity to discount only the largest source or component from a series of interconnected municipalities. If all of the study area suppliers' systems were interconnected, the total supply capacity of the study area would increase from 1.382 MGD to 2.318 MGD. This would reduce the need for additional supply to the Primary Service Area to only 0.047 MGD, essentially making the Service Area self sufficient with regard to water supply. This analysis is strictly quantitative; further evaluation of the efficiencies and components necessary for conveyance of water across the area would be required.

The Village of Lyons is currently evaluating options for rehabilitation, reconstruction or abandonment of their facility. Should the Village elect to abandon the facility and purchase water from other regional sources, the total supply capacity of the Primary Study Area would be reduced to 0.914 MGD and the need for additional supply to the area would increase to 1.451 MGD.

Figure VI-1: Primary Study Area Water Supplies



C. OTHER WATER SUPPLIERS CURRENTLY SERVING THE STUDY AREA

1. Village of Newark

The Village of Newark operates and maintains a distribution system that services the Village, as well provides bulk water sales to four additional municipalities, two authorities and one community system. Municipalities outside the Village include: Village of Clifton Springs, Town of Manchester (Port Gibson), Village & Town of Phelps and the Village of Shortsville. The NYS Thruway Authority, Wayne County Sewer and Water Authority, and the Prestige Village Community, a manufactured home development, are also supplied by the Village of Newark.

The Village utilizes Canandaigua Lake as its sole supply source. The water plant's intake consists of a 24-inch diameter pipe that extends approximately ¼ mile into the lake. Depth of water at the intake is approximately 54 feet. The total permitted take of the supply is 4.0 MGD. With the largest component out of service, the supply capacity of the treatment plant is 3.4 MGD.

The Village reports that the water quality of Canandaigua Lake is very good. The Village's treatment consists of pre-chlorination, slow sand filtration, diatomaceous earth filters, disinfection using chlorine, and fluoride injection. There are no known major capital improvements required in order to maintain the system's current performance level.

The New York State Department of Health has completed a source water assessment for the Village's supply. The assessment rated Canandaigua Lake as having a moderate susceptibility to contamination of the drinking water supply. The amount of agricultural lands in the assessment area results in elevated potential for protozoa, phosphorous, DBP precursors, and pesticides contamination. There is also a moderate density of sanitary wastewater discharges, but the ratings for individual discharges do not result in elevated susceptibility ratings. However, it appears that the total amount of wastewater discharged to surface water in the assessment area is high enough to further raise the potential for contamination, (particularly for protozoa.). There are no noteworthy contamination threats associated with other discrete contaminant sources.

In order to satisfy demands from the Village, as well as all contracted users, the Village's treatment plant currently produces an average of 2.131 MGD, with a maximum daily demand of 2.983 MGD. A future maximum daily demand for the Village's plant of 2.983 MGD was calculated by applying a peaking factor to the Village's average daily use and adding the contractual maximum day usage for all contracted entities. This methodology is conservative as it considers that all maximum

contractual flows would need to be met on the same day that the Village experienced a maximum flow day. The reserve capacity of the Village's supply is 0.417 MGD.

The Village currently sells water quarterly to residents inside the Village for $10 for the first 5,000 gallons plus $2.00 per additional 1,000 gallons. Users outside the Village limits are charged 190% of the Village rate. Bulk sales to surrounding communities vary by contract, with an average rate of $1.72 per 1,000 gallons.

2. Village of Wolcott

The Village of Wolcott operates and maintains a distribution system that services the Village, as well as provides bulk water sales to the Town of Butler, the Town of Wolcott and the Wayne County Sewer and Water Authority.

The Village's primary source of supply is Lake Ontario. Water produced from the Lake Ontario source is treated at the Village's filtration plant with a scheme consisting of filtration, disinfection using chlorine, and fluoride injection. A secondary supply source is the Weager Springs. Water from this source is treated with chlorine and fluoride before being added to the Village's distribution system. The springs reportedly have limited production capabilities during dry weather periods, therefore were not considered as a viable, year round, supply in this study.

The New York State Department of Health has completed a source water assessment for the Village's supplies. For Lake Ontario, the watershed is exceptionally large and too big for a detailed evaluation. General drinking water concerns for public water supplies which use these sources include: storm generated turbidity, wastewater, toxic sediments, shipping related spills, and problems associated with exotic species (e.g. zebra mussels – intake clogging and taste and odor problems). The analysis of the contaminant inventory compiled for the drainage area deemed most likely to impact drinking water quality at the Village's intake found a moderate susceptibility to contamination for this source of drinking water. The amount of agricultural lands in the assessment area results in elevated potential for DBP precursors and pesticides contamination. Non-sanitary wastewater discharges may also contribute to contamination. There is also noteworthy contamination susceptibility associated with other discrete contaminant sources, including mines.

The source water assessment conducted for the Weager Spring site found no noteworthy risks to drinking water quality. While some potential contaminant sources were found, these facility types are unlikely to impact springs. Furthermore, springs can be sensitive to new additions of organic chemicals and solvents.

In order to satisfy demands from the Village, as well as all contracted users, the Village's treatment plant currently produces an average of 0.200 MGD, with a maximum daily demand of 0.560 MGD. The supply capacity of the Lake Ontario filtration plant is 0.700 MGD. A future maximum daily demand for the Village's plant of 0.640 MGD was calculated by adding the Village's unfulfilled contractual demands to the existing maximum day demand. The reserve capacity of the Village's supply is 0.060 MGD.

D. ALTERNATIVE FUTURE WATER SUPPLIERS

1. Village of Waterloo

The Village of Waterloo operates and maintains a distribution system that services the Village, as well as areas in:

- Town of Waterloo
- Town of Junius
- Town of Fayette
- Town of Tyre
- Town of Vanick
- Town of Fayette
- Town of Romulus
- Seneca Army Depot
- Sampson State Park
- Five Points Correctional Facility

The Village utilizes Seneca Lake as its sole supply source. The water plant's intake consists of an 18-inch diameter pipe that extends approximately 850 feet into the lake. Depth of water at the intake is approximately 60 to 65 feet. The total permitted take of the supply is 3.0 MGD. With the largest component out of service, the supply capacity of the treatment plant is 3.0 MGD.

The water quality of Seneca Lake is reported to be exceptional. The Village's treatment consists of diatomaceous earth filtration and disinfection using chlorine.

There are no known major capital improvements required in order to maintain the system's current performance level.

The New York State Department of Health has completed a source water assessment for the Village's water supply. The assessment found an elevated susceptibility to contamination for this source of drinking water. The amount of agricultural lands in the assessment area results in elevated potential for phosphorus, DBP precursors, and pesticides contamination. While there are some sanitary wastewater facilities present, permitted discharges do not likely represent an important threat to source water quality based on their density in the assessment area. However, it appears that the total amount of wastewater discharged to surface water in this assessment area is high enough to further raise the potential for contamination (particularly for protozoa). There is also noteworthy contamination susceptibility associated with other discrete contaminant sources, including chemical bulk storage and landfills.

In order to satisfy demands from the Village, as well as all contracted users, the Village's treatment plant currently produces an average of 1.194 MGD, with a maximum daily demand of 1.460 MGD. The reserve capacity of the Village's supply is 1.540 MGD.

The Village currently sells water quarterly to residents inside the Village for $12.66 for the first 3,000 gallons plus $4.22 per additional 1,000 gallons. Bulk supply to users outside the Village is charged at a rate of $2.59 per 1,000 gallons.

2. Village of Seneca Falls

The Village of Seneca Falls operates and maintains a distribution system that services the Village, as well as areas in the Town of Seneca Falls and the Town of Fayette.

The Village utilizes Cayuga Lake as its sole supply source. The water plant's intake consists of a 30-inch diameter pipe that extends approximately 2,000 feet into the lake. Depth of water at the intake is approximately 22 feet. The total permitted take of the supply is 3.5 MGD. With the largest component out of service, the supply capacity of the treatment plant is 2.5 MGD.

The water quality of Cayuga Lake is reported to be exceptional. The Village's treatment consists of multi-media filtration and disinfection using ultra violet radiation and chlorine. There are no

known major capital improvements required in order to maintain the system's current performance level.

The New York State Department of Health has completed a source water assessment for the Village's water supply. This assessment found an elevated susceptibility to contamination for this source of drinking water. The amount of agricultural lands in the assessment area results in elevated potential for protozoa, phosphorus, DBP precursors, and pesticides contamination. In addition, the moderate density of CAFOs (Concentration Animal Feeding Operations) in the assessment area may add to the potential for contamination. While there are some sanitary wastewater facilities present, permitted discharges do not likely represent an important threat to source water quality based on their density in the assessment area. In addition, it is appears that the total amount of wastewater discharged to surface water in this assessment area is high enough to considerably raise the potential for contamination (particularly for protozoa). There is also noteworthy contamination susceptibility associated with other discrete contaminant sources, including chemical bulk storage and landfills.

In order to satisfy demands from the Village, as well as all contracted users, the Village's treatment plant currently produces an average of 1.194 MGD, with a maximum daily demand of 1.460 MGD. The reserve capacity of the Village's supply is 1.044 MGD.

The Village currently sells water monthly to residents inside the Village for $12.66 for the first 3,000 gallons plus $4.22 per additional 1,000 gallons. Bulk supply to users outside the Village is charged at a rate of $2.59 per 1,000 gallons.

3. City of Geneva

The City of Geneva operates and maintains a distribution system that services the City, as well as several water districts located north of the City, in the Town of Geneva.

The City utilizes Seneca Lake as its sole supply source. The water plant's intake consists of a 30-inch diameter pipe that extends approximately 650 feet into the lake. Depth of water at the intake varies from approximately 15 to 17 feet depending on lake level. The total permitted take of the supply is 5.0 MGD. With the largest component out of service, the supply capacity of the treatment plant is 5.0 MGD.

The water quality of Seneca Lake is reported to be very good. The City's treatment consists of slow sand and diatomaceous earth filtration, with disinfection using chlorine and phosphate injection for corrosion control. There are no known major capital improvements required in order to maintain the system's current performance level.

The New York State Department of Health has completed a source water assessment for the City's water supply. The assessment found an elevated susceptibility to contamination for this source of drinking water. The amount of agricultural lands in the assessment area results in elevated potential for phosphorus, DBP precursors, and pesticides contamination. While there are some sanitary wastewater facilities present, permitted discharges do not likely represent an important threat to source water quality based on their density in the assessment area. However, it appears that the total amount of wastewater discharged to surface water in this assessment area is high enough to further raise the potential for contamination (particularly for protozoa). There is also noteworthy contamination susceptibility associated with other discrete contaminant sources, including chemical bulk storage and landfills.

In order to satisfy demands from the City's distribution system, the City's treatment plant currently produces an average of 2.0 MGD, with a maximum daily demand of 3.6 MGD. The reserve capacity of the City's is 1.4 MGD.

The City currently sells water quarterly to residents inside the City for $6.00 for the first 500 cubic feet (3,740 gallons), and $3.21 per 100 additional cubic feet ($4.29 per 1,000 gallons). Users outside the City are charged at a bulk rate of $2.92 per 100 cubic feet ($4.29 per 1,000 gallons).

4. WCS&WA Western Suppliers

a. General

The Wayne County Sewer and Water Authority currently purchases water from area suppliers, and operates and maintains a distribution network throughout portions of the county. Water purveyors who supply water to WCS&WA include Monroe County Water Authority, Town of Williamson, Village of Palmyra, Town of Ontario, Village of Wolcott and the Town of Sodus (as supplied from the Village of Sodus and Town of Williamson).

Due to the physical and economic constraints of conveying water across long distances, this study conservatively considered that the available supply from WCS&WA to the southeast quadrant

would originate primarily from the Town of Williamson, Town of Sodus and the Village of Wolcott.

b. Village of Wolcott

The Village of Wolcott is under contract to provide the WCS&WA with 0.200 MGD in addition to supplying the needs of the Village and surrounding areas. Historically, the Village's plant has struggled to produce daily flows above 0.100 MGD during dry weather periods. Calculated maximum daily usage within the Village's supply area, excluding supplying contractual demands to WCS&WA, is 0.127 MGD. This represents that the Village would actually have a water shortage if maximum daily demands are experienced during dry weather periods where the plant's capacity was reduced. In consideration of the limited dry weather plant capacity of the Village, it was not considered as a viable, long term supplier to WCS&WA and hence, the study area.

c. Town of Williamson

The Town of Williamson operates and maintains a distribution system that services all areas of the Town. In addition, the Town is under contract to provide the WCS&WA with up to 1.000 MGD and the Town of Sodus with up to 0.500 MGD.

The Town utilizes Lake Ontario as its sole source of supply. The total permitted take of the supply is 5.0 MGD. The Town's treatment consists of pre-chlorination, filtration, disinfection using chlorine, and fluoride injection. With the largest component out of service, the supply capacity of the treatment plant is 3.96 MGD.

The projected maximum day demand of the Town is 2.709 MGD. With the contractual demands, the Town's total maximum day demand is 4.209 MGD. This is in excess of the Town's supply capacity by 0.249 MGD; therefore the Town has over allocated its supply.

The projected maximum day demand for the WCS&WA's Williamson supply is 0.377 MGD. The 0.623 MGD reserve in the WCS&WA's contract with the Town of Williamson was reduced by the 0.249 MGD to account for the over allocation. The resulting WCS&WA contractual reserve available to the study area, as provided from the Town of Williamson, is 0.374 MGD.

d. Town of Sodus

The Town of Sodus does not have water supply facilities; however they have contracted with the Town of Williamson to purchase up to 0.500 MGD and the Village of Sodus to purchase up to

1.000 MGD. This water is used to supply areas in the Town of Sodus, the Village of Sodus Point and the WCS&WA. The combined maximum daily usage in the Town of Sodus and the Village of Sodus Point is 0.575 MGD. The resulting WCS&WA contractual reserve available to the study area, as provided through the Town of Sodus, is 0.925 MGD.

e. Summary

The combined contractual reserve capacity of the Town of Williamson (0.374 MGD) and the Town of Sodus (0.925 MGD), as contractually available to the WCS&WA, is 1.299 MGD. A portion of this contractual reserve, 0.223 MGD, is required to satisfy the calculated maximum daily demand supplied by the WCS&WA to areas within the Town of Arcadia, north of the canal. The remaining 1.076 MGD of contractual reserve is available to serve the study area municipalities.

E. WATER SUPPLY AND DEMAND SUMMARY

The Primary Study Area municipalities, as a whole, are not currently capable of providing adequate water supply to meet the future needs of the area. There are several different options available for increasing the water supply to the area. Figure VI.2, Regional Supply and Demand Summary, highlights the supply capacities and demand characteristics of the municipalities in and around the Primary Study Area. Viable options available for supplying the future demands of the Primary Study Area include the following:

- Construction of interconnections between municipalities within the Primary Study Area
- Bulk purchase of water from the Village of Newark
- Bulk purchase of water from WCS&WA
- Bulk purchase of water from suppliers with reserve capacity south of Wayne County (Geneva, Waterloo, or Seneca Falls)

Within Wayne County, there exists over 1.6 MG of reserve capacity to meet the net unmet demand of 0.783 MG within the study area. When the long-term goal of interconnected supplies is achieved, the reserve capacity would increase in excess of 1 MG. Even if the Village of Lyons elects to decommission its treatment facility and purchase water from other regional sources, and the unmet demand increases to 1.5 MG, there are sufficient supplies within Wayne County to meet future demands of the Project Area.

With few exceptions, the transmission mains necessary to supply the Project Area from sources within Wayne County either already exist and are connected to mains within the Project Area, or

already exist and would connect to a proposed main or proposed transmission main linking municipalities.

Use of the potential suppliers in Seneca and Ontario Counties to the south would require pumping facilities and several miles of transmission main to reach existing or proposed water mains, or proposed transmission main. This would substantially increasing project costs with limited benefit to the Project Area. These suppliers may become more viable as other distribution systems expand bringing existing mains closer to the Project Area.

As sufficient supply is available to serve the long term needs of the Project Area from within Wayne County, the analysis of transmission alternatives that follows assumes the use of supplies within Wayne County.

Figure VI.2

Regional Supply & Demand Summary

Ontario
Williamson
Walworth
Marion
Macedon
Palmyra
Arcadia
Sodus Point
Sodus
0.250
Sodus
Huron
Wolcott
Sterling
Red Creek
Wolcott
.060
Victory
WCWSA
1.076
Rose
.346
Butler
.134
Lyons
.111
.115
Lyons
Clyde
.055
Galen
.209
Savannah
.077
Conquest
0.417
Newark
Ontario County
Seneca County
Victor
Farmington
Manchester
Phelps
Junius
Tyre
Montezuma
Cayuga County
Aurelius
Waterloo
Seneca Falls
1.044
1.540
Springport
Canandaigua
Canandaigua
Hopewell
Geneva
Geneva
1.400
Geneva
Seneca
Fayette
Bristol
Gorham

Potential Water Suppliers
Projected Reserve Capacity (MGD)

- 0.00 - 0.100
- 0.100 - 0.500
- 0.500 - 1.000
- 1.000 - 2.000

Potential Water Purchasers
Projected Unmet Demand (MGD)

- 0.000 - 0.150
- 0.150 - 0.300
- 0.300 - 0.400

0 1.5 3 6 Miles

WAYNE COUNTY WATER AND SEWER AUTHORITY
SE QUADRANT LONG TERM WATER SUPPLY STUDY
REGIONAL SUPPLY & DEMAND SUMMARY

Drawn By: B. JOHNSTON
Scale: 1:200,000
Date: October 2010

MRB group
Engineering, Architecture, Surveying, P.C.

LABELLA Associates, P.C.
Engineering Architecture Environmental Planning
Stuart I. Brown Associates, Inc.
Planning and Management Consultants
A Division of LaBella Associates, PC

FIGURE NO.
VI.2
PROJECT NO.
2300.09001

Y:\Wayne County Water & Sewage Authority\209433 SE Wayne Water Study\GIS\Supply\DemandSummary.mxd

VII. CURRENT TRANSMISSION AND DISTRIBUTION NETWORKS

A. EXISTING FACILITIES

1. Existing Distribution Networks

a. Village of Lyons

The Village of Lyons distribution system was built in the early 1900s. Areas served by the system included the Village proper with new sections that serve districts in the Town to the south and west of the Village. The original sections of the Village system are 4-inch and 6-inch pipe, with 8-inch and 10-inch pipe in newer and upgraded areas. On the south side of the Village, in the area of an industrial park, are 12 and 14-inch water mains. The transmission main from the water treatment plant to the Pearl Street tanks is 10-inch.

There is a 12-inch WCWSA transmission main on the west side of the Village that connects to the Village of Newark water supply through a pump station. The pump station is located at the Village limits and is designed to fill the Pearl Street tanks; it is utilized to supplement the Village's well supply.

The Village system is a mixture of iron and plastic pipe and is in fair condition with repairs typical of a system its age.

Within the Village, in the vicinity of the Pearl Street tanks, is a residential area that is at a similar elevation as the base of the tanks (Hillcrest Drive, Dickerson Street, Cherry Street, Sunset Drive, Locust Hill Drive, and Van Marters Lane). Due to the high elevation of the neighborhood in relation to the tanks, these streets have low pressures, under 30 psi.

There are three tanks in the Village of Lyons system. Two are on Pearl Street and one on Sohn Alloway Road.

b. Town of Lyons

West of the Village of Lyons is a Town water district along Old Lyons Road that is serviced by WCWSA. There is also a water district on the south side of the Village, between the Village of Lyons industrial zone and the Sohn Alloway tank.

c. Village of Clyde

The Village of Clyde system was built in the early 1900s and consisted of 4-inch and 6-inch pipe. Portions of the system have been upgraded over the years to include 8-inch, 10-inch and 12-inch pipe. A 10-inch transmission main runs from the Village wells on Travell Knapps Corners Road to the Village. Sections of 10- and 12-inch main in the Village continue the transmission main to the tank at the end of Genesee Street. A 12-inch main connects the tank to an industrial park along Davis Street.

The Village of Clyde system includes two storage tanks. One tank is located at the end of East Genesee Street (referred to as the Davis tank). The second one is located on State Route 414 on the south side of the Village.

d. Town of Galen

The Town of Galen currently has no water districts or water service areas.

e. Town of Savannah

The Town of Savannah has a water system in the Hamlet of Savannah that runs mostly north-south along NYS Route 31/89. The system is made up of older 4-inch and 6-inch lines. There are sections of newer 8-inch main between the well and the center of the Hamlet.

A storage tank is located on NYS Route 31/89, near Fort Hill Road. Residents along Fort Hill Road are currently served by individual booster pumps. Without the pumps, residents would not have minimum system pressure at their houses.

f. Town of Rose

The Town of Rose water system connects the Hamlets of Rose and South Rose and includes transmission loops to its wells on Salter-Colvin Road and Catchpole Road. The loops also extend to large water users on Meehan Road and NYS Route 414. For the most part, the Rose system is a mixture of 8-inch and 12-inch pipe with smaller 6-inch lines in the hamlets.

The Town of Rose serves a water district in the Town of Huron to the north. This district includes a closed valve connection to a Town of Huron water district along Ridge Road.

g. Town of Butler

The Town of Butler has no water districts but does have two benefitted areas. The first is on the south side of the Village of Wolcott and the second serves the Butler Correctional facility. Both are supplied with water from the Village of Wolcott.

Due to the elevation of the area south of the Village of Wolcott in relation to the Village of Wolcott tank elevation, the benefiting area has reduced pressures and low available fire flow. Pressures and flows meet minimum requirements but are low enough to restrict development in the area. The water mains in the area are 8-inch diameter.

The area served by the Butler Tank service consists of 8 and 12 inch pipe and includes a small area in the Town of Victory to the east.

2. System Pressure

a. Needed Pressure

Section 7.3.1 of the "Recommended Standards for Water Works," (2007 ed.) calls for minimum system pressures of 35 psi and maximum system pressures of 100 psi.

b. Available Pressure

A hydraulic model of the water system was created using H2ONet by MWHSoft, Inc. to determine existing available pressures in each water system. Anticipated minimum and maximum system pressures for each system are shown in the following table.

Table VII-1 - Available Pressure

System	Minimum	Maximum
Butler (Wolcott Tank)	36.7	42.0
Butler (Butler Tank)	48.0	94.6
Clyde	47.8	78.2
Lyons	22.8	94.5
Rose	44.9	86.1
Savannah	31.6	81.2

Minimum system pressures in the Village of Lyons system are above 50 psi along and below Butternut Street. Minimum system pressures in Savannah do not include residents served by individual booster pumps.

3. Fire Flow

a. Needed Fire Flow

ISO provides guidance for insurance underwriters to establish needed fire flow for commercial and residential properties. Needed fire flow for a structure is based on a point system that considers effective area, type of construction, building occupancy and exposure to adjacent structures.

For one and two family dwellings not exceeding two stories in height, needed fire flow can range from 500 gallons per minute (gpm) for dwellings that are over 100-feet apart to 1,500 gpm for residences that are less than 10-feet apart. Needed fire flow for non-residential property is determined by insurance underwriters based on the point system established by ISO, which states that needed fire flow to a facility shall not exceed 12,000 gpm nor be less than 500 gpm.

According to ISO, the needed fire flow in the study area ranges from 1,000 gpm to 6,000 gpm. When developing a community rating, ISO does not consider flows greater than 3,500 gpm.

ISO guidelines also state that fire flow duration should be two hours for needed fire flows up to 2,500 gpm, three hours for fire flows from 3,000 gpm to 3,500 gpm, and 4 hours for flows from 4,000 gpm to 12,000 gpm.

b. Available Fire Flow

Hydraulic analysis of each distribution system determined the available fire flow in each system. Available fire flows are included in the following table.

Table VII-2 - Available Fire Flow

System	Minimum	Maximum
Butler (Wolcott)	280 gpm	311 gpm
Butler (Butler Tank)	835 gpm	5,118 gpm
Clyde	203 gpm	4,605 gpm
Lyons	95 gpm	4,473 gpm
Rose	566 gpm	7,885 gpm
Savannah	206 gpm	874 gpm

The low flows in the Villages of Lyons and Clyde and in the Town of Savannah are on dead-end 4-inch and 6-inch lines. Minimum flow determination in the Village of Lyons ignores the area above Butternut Street; if the areas above Butternut Street were included, the available fire flow in the Village would decrease significantly due to the 20 psi minimum system pressure limitation.

4. System Storage

a. Needed Storage

Section 7.0.1 of the "Recommended Standards for Water Works," (2007 ed) states that, "storage facilities should have sufficient capacity, as determined by engineering studies, to meet domestic demands, and where fire protection is provided, fire demands." The standard goes on to say:

a. "Fire flow requirements established by the appropriate state Insurance Services Offices should be satisfied where fire protection is provided."

b. "The minimum storage capacity (or equivalent capacity) for systems not providing fire protection shall be equal to the average daily consumption. This requirement may be reduced when the source and treatment facilities have sufficient capacity with standby power to supplement peak demands of the system."

c. "Excessive storage capacity should be avoided to prevent potential water quality deterioration problems."

b. Available Storage – Average Day

Each community in the southeast quadrant has one or more storage tanks. The storage capacity of each tank was reviewed for conformance with the "Recommended Standards for Water Treatment Works," (2007 ed.) and ISO guidelines. Each tank was reviewed for size and operating characteristics based on the definitions in Table VII-3 - Storage Definitions

H2ONet was utilized to determine the hydraulic grades needed to produce system pressure of 35 psi and 20 psi. This was accomplished in the model by turning off supply pumps and lowering tank levels until the desired pressures were reached in the system.

Section 8.2.1 of the Recommended Standards, states, "…The system shall be designed to maintain a minimum pressure of 20 psi at ground level at all points in the distribution system under all conditions of flow. The normal working pressure in the distribution system should be approximately 60 to 80 psi and not less then 35 psi." This requirement has been historically interpreted to mean that under average day demand the system pressure should be above 35 psi and that the minimum system pressure during a fire demand is 20 psi.

It should be noted that the minimum storage maintained volume is based on the 20 psi minimum system pressure requirement from the Recommended Standards and not ISO guidelines. In its

review of tank storage volume, ISO does not consider system pressures but credits the volume between the low level and the bottom of the tank.

Table VII-3 - Storage Definitions

Level	Definition
Overflow	Overflow weir elevation.
High Level	The level utilized for control to turn off pumps or close valves utilized to fill a tank.
Low Level	The level utilized for control to turn on pumps or open valves utilized to fill a tank.
35 psi	Tank level needed to produce 35 psi in the distribution system.
20 psi	Tank level needed to produce 20 psi in the distribution system.
Bottom	Elevation of the tank bottom.
Base	Ground elevation at base of tank.
Volume	Nominal tank volume.
Tank Volume	Volume in tank between overflow and bottom of tank.
Available Storage	Volume in tank between high level and 35 psi level. This is the volume utilized to provide average day storage.
Operating Volume	Volume in tank between high level and low level.
Minimum Storage Maintained	Volume in tank between low level and 20 psi level. This is the volume utilized to calculate the storage that can be credited toward needed fire flow.

Table VII-4 - Tank Volumes

TANK	VOLUME	AVAILABLE STORAGE	OPERATING VOLUME	AVG. DAY DEMAND
Butler	1.00 MG	1.00 MG	0.34 MG	0.75 MGD
Clyde – Davis	1.40 MG	0.74 MG	0.40 MG	
Clyde – Rte 414	0.25 MG	0.11 MG	0.06 MG	
Total Clyde		0.85 MG		0.22 MGD
Lyons Pearl St – 1	0.50 MG	0.34 MG	0.10 MG	
Lyons Pearl St – 2	0.25 MG	0.16 MG	0.05 MG	
Lyons – Sohn	0.25 MG	0.21 MG	0.04 MG	
Total Lyons		0.71 MG		0.51 MGD
Rose No. 1	0.40 MG	0.35 MG	0.05 MG	
Rose No. 2	0.40 MG	0.35 MG	0.05 MG	
Total Rose		0.70 MG		0.28 MGD
Savannah	0.75 MG	0.13 MG	0.38 MG	0.05 MGD

Volumes listed for the Lyons Pearl Street tanks do not consider the residential areas above Butternut Street on Hillcrest Dr., Dickerson St, Cherry St, Sunset Dr, and Locust Hill Dr. Because these areas have ground elevations similar to the tank base elevations, the effective volumes of the tanks would be greatly reduced or eliminated if considered. The Village of Lyons is aware that these areas have existing pressure and flow issues. The listed volumes show the effective volumes available to the rest of the Village including and below Butternut Street.

The Village of Lyons Sohn Alloway tank has an overflow elevation below the hydraulic grade created by the Pearl Street tanks; its level only fluctuates during maximum day and peak hours demands in the adjacent industrial park. To keep water moving in the tank, the Village has installed a circulation pump that operates on a timer. The pump runs for approximately four hours a day. Once the pump shuts off, the tank refills due to system pressure. Level is controlled through set points that open and close the tank inlet valve based on tank level. The elevation needed to maintain 35 psi in the system is equal to the high level set point. Because of this, the tank technically does not contain sufficient available storage. However, since the tank can be drained using its pump, almost its entire volume can be utilized to meet average day system demand and to contribute to high system demands such as a fire. The listed operating volume is the approximate volume pumped out of the tank over a four hour period. The listed available storage is the difference between tank volume and operating volume and can be supplied to the system by the circulation pump over 24-hours.

Storage in the Savannah tank does not consider the residents on Fort Hill Road since they are supplied by individual booster pumps. Without the booster pumps, pressure at the highest residence is approximately 5 psi, effectively eliminating storage in the Savannah tank.

Each water system has sufficient storage volume to meet average day demands as noted. It should be noted that the Village of Lyons system does not have average day storage if the Sohn Alloway tank is excluded.

c. Available Storage – Fire Flow

ISO guidelines do not include a requirement for minimum storage in a system. Instead, system storage is considered a source of supply, expressed in gallons per minute, which is credited toward the systems rating. Section 611, A of the ISO guidelines states that, "the average daily minimum water storage maintained is the maximum amount that can be credited. For storage floating on the distribution system, only the portion of the average daily minimum storage that can be delivered at the required residual pressure, and the duration at the point of use shall be credited." ISO's required residual pressure is 20 psi at the test hydrant, which can be different then the Department of Health minimum system pressure of 20 psi as called for in the Recommended Standards. It is possible to have a 20 psi residual at a test hydrant and a negative system pressure at a remote high point in a system. For purposes of this study, the more conservative 20 psi system pressure is utilized to determine the minimum storage maintained in a tank.

Table VII-5 - Tank Fire Flow Capacity

TANK	MINIMUM STORAGE MAINTAINED	2-HOUR FLOW (gpm)	3-HOUR FLOW (gpm)	MAX DAY DEMAND (gpm)	AVAILABLE 2-HOUR (gpm)	AVAILABLE 3-HOUR (gpm)
Butler	0.68 MG	5,680	3,790	87	5,593	3,703
Clyde-Davis	0.99 MG					
Clyde–Rte 414	0.16 MG					
Total Clyde	1.15 MG	9,583	6,389	262	9,322	6,127
Lyons Pearl St–1	0.15 MG					
Lyons Pearl St–2	0.07 MG					
Total Lyons	0.22 MG	1,833	1,222	449	1,384	773
Lyons – Sohn	0.21 MG					
Rose No. 1	0.30 MG					
Rose No. 2	0.30 MG					
Total Rose	0.60 MG	5,000	3,333	356	4,644	2,978
Savannah	0.25 MG	2,123	1,415	40	2,083	1,375

Sufficient storage capacity exists in the Butler Tank and the Clyde Tanks to provide needed fire flows of 2,500 gpm and 3,500 gpm.

The Village of Lyons tanks cannot provide flow greater than 1,384 gpm for a 2-hour fire or 773 gpm for a 3-hour fire. Additional flow is available to the Village from the Sohn Alloway pump (130 gpm), the Village of Lyons booster pump on Route 31 (300 gpm) and from the water treatment plant (325 gpm). Total flow that can be credited for fire protection from the combined sources of the water plant, Route 31 pump station, Sohn Alloway pump and the Pearl Street tanks is 1,528 gpm for a 3-hour fire; 2,139 gpm for a 2-hour fire. Additional capacity is needed for both the 2-hour and 3-hour fire demands. These capacities are reduced by 325 gpm each if the Village no longer produces water.

The Town of Rose tanks have enough capacity to provide a 2,500 gpm fire flow but not enough for a 3,500 gpm. Counting the available flow from the well increases the available 3-hour fire flow to 3,178 gpm. Additional capacity is needed for a 3-hour fire demand of 3,500 gpm.

The Town of Savannah tank does not have sufficient capacity to provide the 2,500 gpm needed fire flow. Supplemental flow from the Town well only increases available flow by 135 gpm. Additional capacity is needed for fire flow.

B. CURRENT TRANSMISSION LIMITATIONS

The Villages of Lyons and Clyde and the Savannah water systems include 4-inch and 6-inch water mains that are typically older lines. These lines, due to size and age, restrict flow in the system. Restrictions in flow reduce overall system pressures and available fire flow.

The water systems also include 2-inch waterlines intended to serve a limited number of houses on short streets. These lines are not intended to provide fire flow.

The WCWSA transmission main along Route 31 that connects the Village of Newark to the Village of Lyons also provides water to the Ontario County Complex. The complex includes an elevated storage tank that is filled from the transmission main through an altitude valve. Parallel to the altitude valve is a check valve that allows additional flow to the complex during high demand. The connection to the Ontario County Complex is of note because it lowers the hydraulic grade in the transmission main when the tank is filling, creating a temporary reduction in pipe line capacity.

The Route 31 water main has a practical flow limit of 1,000 gpm to the Lyons Pump Station before system pressures drop below 35 psi at the pump. The capacity increases to 1,140 gpm at a 20 psi

residual. The design flow rate for the Route 31 pump station is 300 gpm; the transmission main has sufficient capacity to supply the pump station.

The Village of Clyde operates a 10-inch transmission main from its wells to the Village. Flow from the wells to the tank is limited by the capacity of the well pumps. Flow from the tank to the well is limited by the water level in the tank. At a 35 psi residual, the capacity is 540 gpm; the capacity increases to 660 gpm at 20 psi residual.

VIII. HYDRAULIC ANALYSIS

A. METHODOLOGY

A hydraulic model of the water system was created using H2ONet by MWHSoft, Inc. The model is based on record mapping of the individual water systems provided by each Town and Village with supplemental information supplied by the operator of each system. Model data includes pipe size and roughness, check valve locations, closed valves, pressure reducing and other control valves with settings, pumps with operator supplied pump curve data, and tank data including sizes and overflow elevations. Data on control systems is also included for turning on and off pumps and opening and closing valves.

1. Base Mapping

Wayne County tax parcel data was utilized as base mapping for layout of the network with elevation data obtained from USGS topographic maps (NAVD 88). Pipeline elevations are included at road intersections and system high and low points. Elevation data for pumps, valves, and tanks are also included as well as the elevations of water users that are above the adjacent pipe line.

2. Calibration

Hydrant flow test data and operator experience was utilized to calibrate the model to closely approximate the performance of each system. The model utilized for this study was developed from multiple models created by MRB Group of the various water systems over the past several years. Model calibration based on hydrant flow tests was performed when the individual models were created for each system. Calibration of the consolidated model was checked using earlier results and considered improvements made since each model was originally completed.

3. System Demands

System demands are based on flow data provided when the individual models were first created and were updated to include known improvements, system expansions and water production data collected as part of this study. For purposes of this study, average day system demands were applied uniformly throughout a 24-hour day. An attempt was made to apply demands to model nodes based on known water use near the nodes. Where use data was not available, demands were applied based on an estimated demand per user and the number of users near a node. User counts were made from aerial photographs. This method helped model actual flow distribution in a system, applying higher demands to more concentrated areas.

4. Simulations

Extended period simulations were run for the model to determine the effect of system demands on storage and pump operation. An extended period simulation can be run for any length of time with results calculated at selectable time steps throughout the simulation. Extended period simulations provide an understanding of distribution system dynamics and helps establish normal tank elevations and pump and valve operating status. This method avoids model results based on extreme, unrealistic results such as all tanks at low level and all pumps off at the same time or its converse. The only time these extreme situations were utilized was to determine tank levels at minimum system pressures of 35 psi and 20 psi.

B. APPLICABLE STANDARDS

The following standards and guidance documents were utilized to review the hydraulic model of the existing water distribution systems and the reviewed alternatives.

1. "Recommended Standards for Water Works," (2007 ed), Great Lakes Mississippi River Board of State and Provincial Public Health Environmental Managers. Document provides guidance for pumping systems, storage and distribution system piping and appurtenances.

2. "Fire Suppression Rating Schedule," (02-03 ed.), ISO. Document utilized as a basis for establishing minimum fire flow and for reviewing available and needed storage.

3. "Distribution System Requirements for Fire Protection, Manual of Water Supply Practices M31," (1998) American Water Work Association. Document utilized to review minimum fire flow and system storage requirements.

C. DESIGN CRITERIA

In accordance with the Recommended Standards for Water Works, the models were reviewed based on a minimum system pressure of 35 psi with a normal working pressure of 60 to 80 psi. Areas above 100 psi were noted as areas where either a system pressure reducing valve (PRV) or individual PRV's are needed to reduce the pressure to a below 100 psi.

Needed fire flow is based on ISO guidance for one and two story buildings are as follows.

Table VIII-1 - ISO Needed Fire Flow

Distance Between Buildings (feet)	Needed Fire Flow (gpm)
Over 100	500
31 – 100	750
11 – 30	1,000
10 or less	1,500

When available, ISO Hydrant Flow Test Summaries were utilized to establish minimum needed fire flows for non-residential locations.

IX. LONG TERM WATER SUPPLY ALTERNATIVES

Hydraulic models were created of the existing distribution system and of two possible supply alternatives; Southern Supply and Central Supply. The supply alternatives represent likely service areas that can be served by a water storage tank and are defined by the hydraulic grade maintained by the tank.

In developing the supply alternatives two assumptions were made:

1. The analysis is based on full build-out of the study area meaning that all of the identified potential water districts are formed within the planning period of this study.

2. Since it is difficult to predict the order in which the water districts are formed, it is assumed that development will extend out from existing supply areas. For example, it is assumed that development in Galen will likely extend out from the Village of Clyde.

The following terms are utilized in this discussion. Definitions are provided to help clarify the alternatives presented in this study.

- Distribution Lines: Water mains in potential water districts that are not part of a transmission corridor. Distribution lines are typically 8-inch pipe.
- Hydraulic Grade: The elevation of water in an open tank. In a closed, pressurized pipe it is the elevation of the pipe plus the pressure at a given point expressed in feet.
- Service Area: An area supplied from hydraulic grade of a water storage tank.
- Transmission Corridor: Water mains utilized to link service areas and distribution lines. A transmission corridor may include water mains in locations not identified as potential water districts. A transmission corridor can also include new pipe inside Village limits. Water mains along transmission corridors are typically 12-inch pipe.
- Water Districts: Those areas identified by the individual Towns as areas where the residents expressed in interest in water. A water district can include transmission and distribution components and is an extension of an existing service area.
- Water Supplier: Communities in the study area that produce water and the WCWSA. For purposes of this study, water suppliers include the Village of Clyde, Village of Lyons, Town of Rose, Town of Savannah and the Wayne County Water and Sewer Authority. The Village of Lyons is currently reviewing its options as a water supplier and is only considered as a short term supplier. Due to the condition of the Village of Lyons' water treatment plant, and the capital costs associated with needed capital improvements, the

Village of Lyons is not considered a long term water supplier for the planning period of this study. WCWSA is the only supplier that does not produce water; all of its water is obtained from other sources. WCWSA purchases water from the Village of Newark, Village of Palmyra, Village of Wolcott, Town of Ontario, Town of Williamson, Town of Sodus, Town of Rose, and the Monroe County Water Authority. Other potential regional suppliers include the Village of Waterloo, Village of Seneca Falls and City of Geneva. While these communities have ample production capacity it is unlikely that their service areas would extend north to the study area. The primary barriers to the use of these communities as water suppliers are the distances between supply areas and the sparse population along the likely transmission corridors.

Each supply alternative includes transmission corridors (Figure IX-1) and distribution areas. Each supply alternative is based on hydraulic grades. The number of EDUs supplied are the same and the ultimate benefit is the same between alternatives.

FIGURE IX.1

PROPOSED TRANSMISSION CORRIDORS

POTENTIAL STORAGE TANK LOCATIONS
EXISTING WATERMAIN
FUTURE WATERMAIN
STUDY AREA
BUTLER-SAVANNAH-TRANSMISSION
ROSE-CLYDE-TRANSMISSION
SOUTHERN-TRANSMISSION
CENTRAL-TRANSMISSION
CENTRAL TRANSMISSION (OUTSIDE IDENTIFIED SERVICE AREA)

N
W E
S

0 0.5 1 2
Miles

WAYNE COUNTY WATER AND SEWER AUTHORITY
SE QUADRANT LONG TERM WATER SUPPLY STUDY
PROPOSED TRANSMISSION CORRIDORS

Drawn By: DSA
Scale: 1" = 8000' @ 11"X17"
Date: MAY 2010

MRB group
Engineering, Architecture, Surveying, P.C.

LABELLA ASSOCIATES, P.C.
Engineering
Architecture
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Stuart I. Brown Associates, Inc.
Planning and Management Consultants
A Division of LaBella Associates, P.C.

SHEET NO.
FIGURE IX.1
PROJECT NO.
2300.09001

A. SOUTHERN SUPPLY ALTERNATIVE

The Southern Supply Alternative is shown on the following page, and in general includes transmission lines along:

- Route 31 from the Village of Lyons to Savannah,
- Cross lots from Maple Street Road to Pilgrimport Road,
- Kelsey, Travell Knapps Corners, Pilgrimport, and Debusse Road.

This supply alternative forms the basis for long range planning of the system and utilizes existing water suppliers in Wayne County. The southern supply alternative provides a regional solution to supply by establishing a uniform hydraulic grade across the service area. The southern supply alternative also recognizes the likelihood that district creation would likely occur along Route 31 before other areas. Since the Route 31 corridor is mostly commercial and industrial in nature, the initial development of the area will encourage economic growth.

1. Town of Lyons – North of Village

WCWSA will supply water from its Central Service area to the Town of Lyons, north of the Village of Lyons and west of Maple Street Road through a connection on Colman Hill Road in the Town of Arcadia. Use of this connection requires a pressure change setting on the pressure reducing valve located in the WCWSA system on Hydesville Road. The change in setting would produce at a minimum a hydraulic grade in the service area of 660. The WCWSA's Central Service area is generally at a hydraulic grade of 710, which is controlled by a tank in the Town of Palmyra. If needed, the hydraulic grade of 710 can be extended into the Town of Lyons. A hydraulic grade of 660 provides needed system pressures and fire flow to a high point on Debusse Road, east of Bastian Road, in the Town of Lyons while maintaining system pressures and available flows in the existing WCWSA Central Service Area. WCWSA's water at the connection is a mixture of water supplied by the Monroe Country Water Authority, Town of Ontario, Town of Williamson and Village of Palmyra.

Modifications are also needed in the Village of Lyons system to allow WCWSA water to supply the areas above Butternut and Bear Streets to produce system pressures greater than 40 psi and achieve fire flows greater than 500 gpm. Necessary modifications are listed on page 96.

Check valves and dual acting PRVs will be located at the connection between the WCWSA Central service area and the Lyons service area so that the two supplies can supplement each other during a fire or on reversal of hydraulic grade.

FIGURE IX.2

SOUTHERN SUPPLY

WCWSA HGL = 660

LYONS HGL = 620

ROSE HGL = 570

BUTLER HGL = 575

CLYDE HGL = 576

SAVANNAH HGL = 624

32 PSI

29 PSI

30 PSI

WATER SUPPLY PROVIDERS

- CLYDE
- ROSE
- SAVANNAH
- SAVANNAH OR WCWSA
- WCWSA (NEWARK) OR CLYDE
- WCWSA (NEWARK)
- WCWSA (WEST/CENTRAL)
- WCWSA (WOLCOTT)
- FUTURE PRV
- FUTURE FIRE FLOW PUMP STATION
- EXISTING WATERMAIN
- FUTURE WATERMAIN
- STUDY AREA

0 0.5 1 2 Miles

WAYNE COUNTY WATER AND SEWER AUTHORITY

SE QUADRANT LONG TERM WATER SUPPLY STUDY

SOUTHERN SUPPLY

Drawn By: DSA

Scale: 1" = 8000' @ 11"X17"

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LABELLA Associates, P.C. Engineering Architecture Environmental Planning

Stuart I. Brown Associates, Inc. Planning and Management Consultants A Division of LaBella Associates, P.C.

SHEET NO.

FIGURE 1X.2

PROJECT NO.

2300.09001

N:\2300.09001.000\dwg\FIGURE_1.mxd

2. Town of Lyons - South and East of the Village of Lyons and Western Galen

The Village of Lyons is currently supplied by WCWSA with water obtained from the Village of Newark and from the Village of Lyons water plant. Under the southern supply alternative it is assumed that the Village of Lyons will no longer produce water and the WCWSA will supply water to the Village below Butternut and Bear Streets with water obtained from the Village of Newark. The Lyons service area will include the Village of Lyons below Butternut and Bear Streets and the Town of Lyons east and south of the Village. The hydraulic grade of the service area is controlled by the Pearl Street tanks at a grade of 620.

Depending on how, where and when water districts are formed, it is possible for the Lyons service area to extend into the Town of Galen to east of Maple Street Road on both Route 31 and Travel Knapps Corners Road.

3. Town of Galen and Village of Clyde

The Clyde service area includes the Village of Clyde and the Town of Galen. The hydraulic grade in the Clyde service area is approximately 576. It is possible that western portion of the Town of Galen will be supplied from the Lyons service area dependent on how, where and when water districts are formed. The Lyons and Clyde services areas will be connected using dual acting PRVs on Route 31 at Travel Knapps Corner Roads that will supplement flow into the Clyde service area from the west when needed. The dual acting PRV also allows water from Clyde to supplement flow in the Lyons service area on reversal in hydraulic grade.

The Clyde-Rose transmission corridor, located in the Towns of Galen and Rose, connects the Clyde and Rose service areas through a dual acting PRV at the Town line on Route 414. The dual acting PRV allows the two zones to supplement flow to each other on reversal in hydraulic grade or if system pressure drops below a set point. The Town of Rose system is at an approximate grade of 570.

Within the southern supply alternative, there is a high point on Kelsey Road, east of Route 414 has an anticipated pressure of 30 psi. Since this pressure is below the 35 psi minimum it will need to be taken into consideration during development of the Kelsey Road transmission line. Possible solutions include a pump station or changing the service area to one with a higher hydraulic grade.

The possible water district along Welch Road will use a pump station for achieve the required pressure and fire flow.

Improvements to the existing Village of Clyde distribution system include up-sizing a 2-inch water line on Geneva Street to provide service to a potential district in the Town of Galen to the west. Improvements will also be needed to the existing water mains on East Genesee Street, Glasgow Street and Powers Road to establish transmission corridors and to provide service to potential districts in the Town of Galen.

4. Town of Savannah

The Town of Savannah service area currently operates at a hydraulic grade of 560, which is controlled by an existing reservoir on Route 31. Savannah, however, is contemplating a project that includes a new water tank that will operate at a higher hydraulic grade of 624. The tank project is currently subject to funding but will likely happen within the next 20-years.

The Clyde and Savannah service areas will be interconnected through a dual acting PRV on Route 31 that allows flow to either Town based on a low level set point and reversal in hydraulic grade. Due to the sparse development on Route 31 between Clyde and Savannah, it is possible that this connection may not be built until the distant future (greater than 20 years). The connection is included for planning purposes to indicate that when it is built, 12-inch main should be utilized. Once constructed, the line will primarily serve as an emergency water supply to Clyde since the Savannah system will be at a higher grade once the new Savannah tank is built. Until the tank is built, it is possible for Clyde to be a backup supplier to Savannah. Once the Savannah tank is constructed, water supply from Clyde to Savannah would require a pump station.

The Savannah-Butler transmission corridor, located in Savannah, will supply water to the north from the hamlet of Savannah to Route 104 in Butler. A dual acting PRV is proposed that allows the Savannah service area (624) and the Butler tank service area (575) to supplement flow to each other on reversal of hydraulic grade or if pressure drops below a set point. The Savannah-Butler transmission corridor is needed to provide water to South Butler.

5. Town of Rose

The Town of Rose will continue to supply water to its residents at a hydraulic grade of 570. The Rose-Clyde transmission corridor will interconnect the Rose and Clyde service areas. An

interconnection between the Rose service area and the Butler service area is also proposed as a backup supply. Each connection includes dual acting PRVs that allow supplemental flow in either direction if pressure drops below a set point or on reversal of hydraulic grade.

It should be noted that under this Southern Supply alternative there is one point in the future Rose service area (intersection of Wayne Center-Rose Road and Lovers Lane that cannot be supplied with water greater than 35 psi without increasing the hydraulic grade in the area. Anticipated pressure at this intersection is 32 psi, which are significantly below the recommended minimum system pressure of 35 psi.

Because the Town of Rose has limited production capacity that will not meet future demands and has trouble meeting current demands, it may be necessary to divide the Rose service area in two. One half, the area generally east of Route 414, would be supplied by the existing Rose distribution system. Areas generally west of Route 414 would be supplied by the Clyde-Rose transmission main.

A second transmission main along Catchpole and Lyman Roads is also proposed as part of the Southern Supply alternative. This transmission line is necessary for the Clyde system too supply areas in northern Galen; it will also allow water supplied through Lyons to be utilized in northern Galen and in Rose. This connection would supply water at the higher hydraulic grade of 620 out of Lyons.

6. Town of Butler

Water to the Town of Butler would be supplied by the WCWSA from the existing Butler Tank service area at a hydraulic grade of 575. WCWSA obtains the water for the Butler Tank service area from the Village of Wolcott. The Butler tank is filled by a pump station on CR 163 at the Village of Wolcott line. The Butler service area will be connected to Savannah and Rose service areas through dual acting PRVs that allow supplemental flow to either area if pressures drop below a set point or on reversal of hydraulic grade.

Since it is impossible to predict the order of development in the various communities, it was determined that either the Savannah or Butler service areas can supply South Butler.

It was also determined that a high point on Spring Green Road in the Town of Butler cannot be served from the Butler Tank service area due to low anticipated system pressure (<30 psi) at the high point. The only way to supply the needed pressure to this area is through the use of a booster pump station.

7. Pressure and Flow

Table IX-1 summarizes the anticipated pressure and available fire flow ranges in each Town under the Southern Supply alternative.

Table IX-1 - Central Supply Pressure & Flow

	Pressure (psi)		Fire Flow (gpm)	
System	Min.	Max.	Min.	Max.
Butler (Wolcott)	30	96	480	2,992
Butler (Butler Tank)	30	79	505	5,979
Clyde	41	95	685	2,790
Lyons	52	95	506	6,627
Rose	32	121	588	5,224
Savannah	30	106	631	3,355

Pressure in Butler, Galen and Rose are lower than 35 psi are at isolated high points in the system. As the service area expands into these areas, the high points will need to be taken into consideration during design. Modifying the HGL to the service area or providing local poster pumps can correct the areas of low pressure.

One potential water district in the Town of Galen, on the east side of the Village of Clyde along Welch Road will need a booster pump to provide needed pressures and fire flow to the district. The need for the pump station will not change with this supply alternative since it is supplied directly out of the Village of Clyde.

Town of Savannah pressures and flows are based on changing the elevation of the Tank. Pressures under 35 psi are located in an existing service area. It is reported that the residents have individual booster pumps.

8. Storage

Table IX-2 and

Table IX-3 summarize the storage requirements for the service area.

Table IX-2 – Average Day Storage

TANK	AVAILABLE STORAGE (GAL)	AVG DAY DEMAND (GPD)
Butler	**416,000**	**172,209**
Clyde-Davis	767,000	
Clyde–Rte 414	119,000	
Clyde	**886,000**	**357,000**
Lyons Pearl St–1	297,000	
Lyons Pearl St–2	148,000	
Lyons – Sohn		
Lyons	**445,000**	**540,759**
Rose No. 1	353,000	
Rose No. 2	353,000	
Rose	**706,000**	**363,000**
Savannah	**174,000**	**90,000**

Table IX-3 – Fire Flow Storage

TANK	MINIMUM STORAGE MAINTAINED	2-HOUR FLOW (gpm)	3-HOUR FLOW (gpm)	MAX DAY DEMAND (gpm)	AVAILABLE 2-HOUR (gpm)	AVAILABLE 3-HOUR (gpm)
Butler	**682,000**	**5,683**	**3,789**	**177**	**5,507**	**3,612**
Clyde-Davis	994,000	8,283	5,522			
Clyde–Rte 414	160,000	1,333	889			
Clyde	**1,154,000**	**9,617**	**6,411**	**407**	**9,210**	**6,004**
Lyons Pearl St–1	367,000	3,058	2,039			
Lyons Pearl St–2	183,000	1,525	1,017			
Lyons – Sohn	88,000	733	489			
Lyons	**638,000**	**5,317**	**3,544**	**486**	**4,831**	**3,059**
Rose No. 1	302,000	2,517	1,678			
Rose No. 2	302,000	2,517	1,678			
Rose	**604,000**	**5,033**	**3,356**	**440**	**4,593**	**2,915**
Savannah	**220,000**	**1,833**	**1,222**	**81**	**1,752**	**1,141**

Table IX-2 shows that the Pearl Street tanks do not have sufficient storage for average day demands in the Lyons service area, which includes the Village and anticipated districts outside the Village. In order to meet these demands, the Lyons service area needs to rely on supplemental flow

provided by the Route 31 pump station and the proposed connections to the WCWSA Central Service Area on the north side of the Village. The remaining services areas have adequate storage to meet average day demands.

Table IX-3 shows that the Village of Lyons and Town of Rose do not have sufficient storage capacity to provide fire flows greater than 2,500 gpm. Both communities have industries and commercial establishments with needed fire flows of 3,500 gpm or more. In order to provide additional flow, the service areas will need to rely on interconnections to neighboring service areas that are at a higher hydraulic grade or add regional storage that benefits the entire southeast quadrant.

Two potential locations were identified for a storage tank that will benefit the South East Quadrant. The first is in the Town of Arcadia on Brantling Hill and the second is in the Town of Galen on Geneva Road. Actual size and location of the tank will need to be determined during design. Location is likely to be a function of which neighboring water district is constructed first.

B. MODIFIED SOUTHERN SUPPLY ALTERNATIVE

Supply areas would be similar to the Southern Supply Alternative with the exception that the Lyons service area at hydraulic grade of 620 would extend east to Sheppard Road in the Town of Galen and would also supply the western half of the Town of Rose. System pressures are greater than 35 psi with the exception of the high point in the Town of Rose. Available fire flows are greater than 500 gpm.

The Modified Southern Supply Alternative is included for planning purposes and is one possible solution to address the low pressure areas in the Towns of Rose and Galen identified under the Southern Supply Alternative. It utilizes transmission corridors where 12-inch mains will be needed as water districts are created.

FIGURE IX.3

MODIFIED SOUTHERN SUPPLY

CHECK VALVE

CHECK VALVE

CHECK VALVE

ROSE HGL = 570

ROSE HGL = 585

BUTLER HGL = 575

29 PSI

CLYDE HGL = 576

SAVANNAH HGL = 624

LYONS HGL = 620

WCWSA HGL = 660

WATER SUPPLY PROVIDERS

- CLYDE
- ROSE
- SAVANNAH
- SAVANNAH OR WCWSA
- WCWSA (NEWARK)
- WCWSA (WEST/CENTRAL)
- WCWSA (WOLCOTT)
- FUTURE PRV
- POTENTIAL STORAGE TANK LOCATIONS
- FUTURE FIRE FLOW PUMP STATION
- EXISTING WATERMAIN
- FUTURE WATERMAIN
- STUDY AREA

0 0.5 1 2 Miles

WAYNE COUNTY WATER AND SEWER AUTHORITY

SE QUADRANT LONG TERM WATER SUPPLY STUDY

MODIFIED SOUTHERN SUPPLY

Drawn By: DSA

Scale: 1" = 8000' @ 11"X17"

Date: MAY 2010

MRB group Engineering, Architecture, Surveying, P.C.

LABELLA Associates, P.C. Engineering Architecture Environmental Planning

Stuart I. Brown Associates, Inc. Planning and Management Consultants A Division of LaBella Associates, P.C.

SHEET NO.

FIGURE 1X.3

PROJECT NO.

2300.09001

N:\2300.09001.000\dwg\FIGURE_1.mxd

C. CENTRAL SUPPLY ALTERNATIVE

Supply areas would be similar to the Southern Supply Alternative with the exception that the WCWSA Central Service area hydraulic grade of 660 would extend east to South Butler and would supply the western half of the Town of Rose.

The Central Supply Alternative is included for planning purposes in order to delineate an alternative means of transmission that may be appropriate for future service areas, depending on where and in what order the development or the creation of water districts will progress. The primary purpose of the Central Supply Alternative is to highlight those areas where 12-inch mains should be installed as water districts are created. It also provides needed pressure and flow to the high points identified under the Southern Supply Alternative.

In order for South Butler to be supplied from the WCWSA central service area additional transmission lines needed along:

- Salerno Road,
- Clyde Hunts Corner Road,
- Hadden Road, and
- South Butler Road.

These roads were not identified during the study as areas that have an interest in public water.

Also in order to supply South Butler from the WCWSA central service area, a tank is needed at a high point on South Butler Road, approximately half way between Whiskey Hill Road and Reed Road. Without the tank, the system will not provide a minimum 500 gpm at 20 psi minimum system pressure. This tank will also provide minimum system pressure and fire flow to the high point in Rose.

FIGURE IX.4

CENTRAL SUPPLY

CHECK VALVE

CHECK VALVE

CHECK VALVE

ROSE HGL = 564

ROSE HGL = 585

WCWSA HGL = 660

LYONS HGL = 620

BUTLER HGL = 575

29 PSI

CLYDE HGL = 576

SAVANNAH HGL = 624

Sodus
Huron
Wolcott
Butler
Rose
Lyons
Arcadia
Clyde
Galen
Savannah

WATER SUPPLY PROVIDERS

- CLYDE
- ROSE
- SAVANNAH
- SAVANNAH OR WCWSA
- WCWSA (NEWARK)
- WCWSA (WEST/CENTRAL)
- WCWSA (WOLCOTT)
- FUTURE PRV
- POTENTIAL STORAGE TANK LOCATIONS
- FUTURE FIRE FLOW PUMP STATION
- EXISTING WATERMAIN
- FUTURE WATERMAIN
- STUDY AREA

0 0.5 1 2
Miles

N:\2300.09001.000\dwg\FIGURE_IX.4.mxd

WAYNE COUNTY WATER AND SEWER AUTHORITY
SE QUADRANT LONG TERM WATER SUPPLY STUDY
CENTRAL SUPPLY

Drawn By: DSA
Scale: 1" = 8000' @ 11"X17"
Date: MAY 2010

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Engineering, Architecture, Surveying, P.C.

LABELLA Associates, P.C.
Engineering Architecture Environmental Planning
Stuart I. Brown Associates, Inc.
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SHEET NO.
FIGURE 1X.4
PROJECT NO.
2300.09001

D. TRANSMISSION CORRIDOR CAPITAL COST AND EQUIVALENT DWELLING DENSITY

1. Southern Transmission Corridor

The Southern Transmission Corridor is shown in Figure X1-1, and in general includes proposed 12" diameter transmission lines at the following locations:

- Village of Lyons – Rte 31 from Forham St to the Lyons village boundary.
- Town of Lyons – Route 31 from the Lyons village boundary to the Galen town boundary.
- Town of Galen – Route 31 from the Galen town boundary to Lake Corners Rose Valley Road.
- Village of Clyde – Route 31 from Clyde Rd to the Clyde village boundary.
- Town of Galen – Route 31 from the Clyde village boundary to the Galen town boundary.
- Town of Savannah – Route 31 from the Savannah town boundary to Grand Avenue

The estimated project cost for the Southern Transmission Corridor is $4,216,600.00. There are currently 127 EDU's in the Towns of Lyons, Galen, and Savannah that are directly located along this transmission corridor alignment. As water districts are formed and this transmission corridor is constructed, new segments of transmission main will be required in the Village of Lyons and Clyde, as noted in the above list. These Village transmission projects may be funded jointly by Village residents (because of the hydraulic improvements gained by these projects) and by Town residents in Lyons, Galen, and Savannah (because of the necessity for Village transmission mains to serve Town residents). As the exact project cost share is difficult to determine at this time, this study has assumed Town residents between the Village of Lyons and Clyde will each equally share the project cost for the Village of Lyons transmission main. Also, this study has assumed Town residents between the Village of Clyde and Hamlet of Savannah will each equally share the project cost for the Village of Clyde transmission main. The following figures depict the breakdown of EDU and project cost by community.

Figure IX-5 – Southern Transmission Corridor Equivalent Dwelling Units

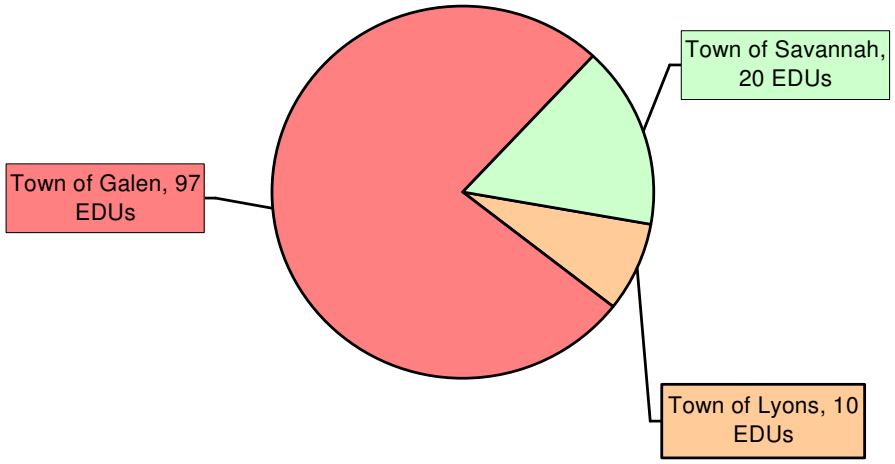
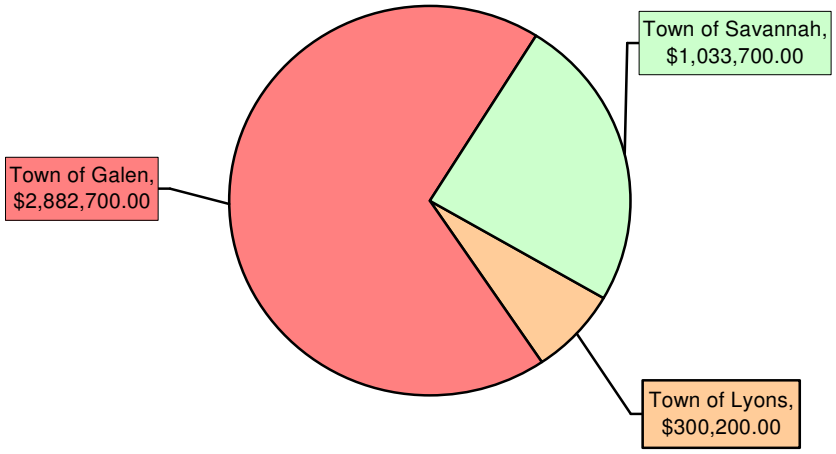


Figure IX-6 – Southern Transmission Corridor Project Cost



2. Central Transmission Corridor

The Central Transmission Corridor is shown in Figure X1-1, and in general includes proposed 12" diameter transmission lines at the following locations:

- Town or Arcadia – Lembke and Emmel Road from Fairville Station Road to the Lyons town boundary.
- Town of Lyons – Emmel, Debusse, Pilgrimport, Bishop, & Travell Knapps Crn Road from the Lyons town line to the Galen town line.
- Town of Galen – Travell Knapps Corners and Kelsey Road from Gannett to Shepard Road.
- Town of Butler – South Butler Road from Bassett Road to the Hamlet of South Butler.

The estimated project cost for the Central Transmission Corridor is $3,318,100.00. There are currently 143 EDU's in Lyons, Galen, and Butler EDU directly located along the alignment of this transmission corridor. The following figures depict the breakdown of EDU and capital cost by community.

Figure IX-7 – Central Transmission Corridor Equivalent Dwelling Units

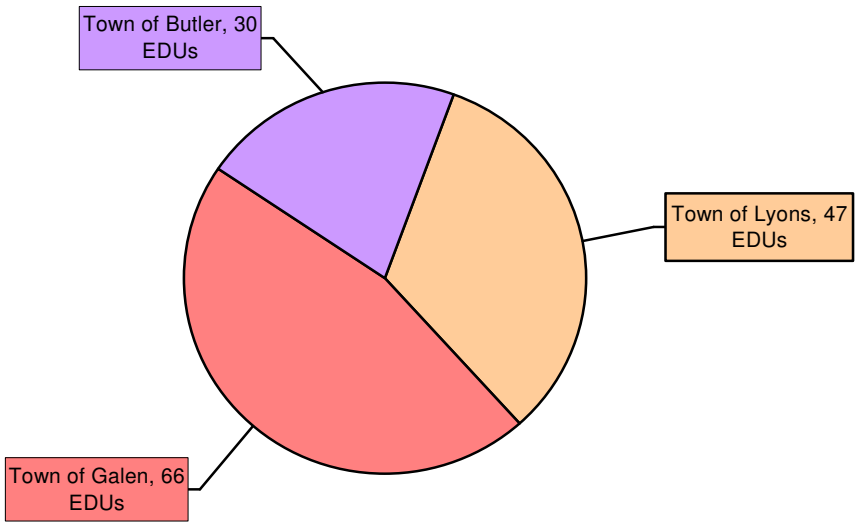
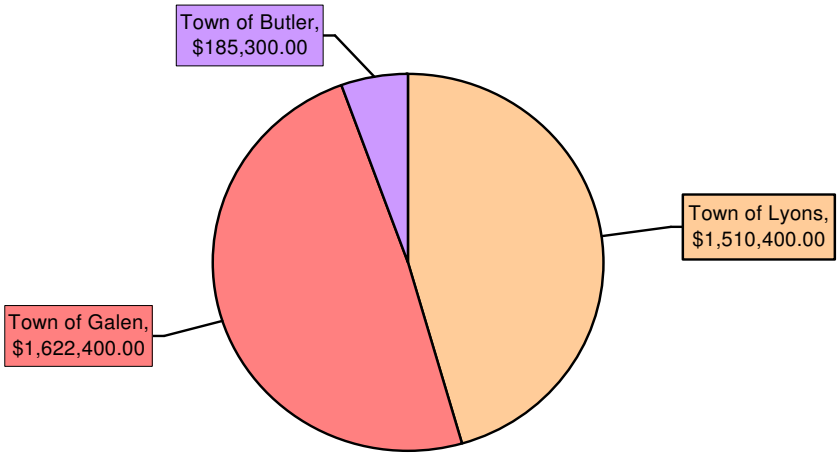


Figure IX-8 - Central Transmission Corridor Capital Cost



3. Clyde-Rose Transmission Corridor

The Rose-Clyde Transmission Corridor is shown in Figure X1-1, and in general includes proposed 12" diameter transmission lines at the following locations:

- Town or Galen – NYS Rte 414 from the Clyde village boundary to the Lyons town boundary.
- Town of Rose – NYS Rte 414 from the Rose town boundary to the Hamlet of Rose.

The intent of the connection is to provide a supplemental water supply to the Town of Rose. Currently, the Town of Rose does not have production capacity to meet existing demands and needs the connection for future expansion.

The estimated project cost for the Clyde-Rose Transmission system is $1,544,300.00. There are currently 72 EDU's in Galen and Rose equivalent dwelling units (EDU) directly located along the alignment of this transmission corridor. The following figures depict the breakdown of EDU and capital cost by community.

Figure IX-9 – Clyde-Rose Transmission Corridor Equivalent Dwelling Units

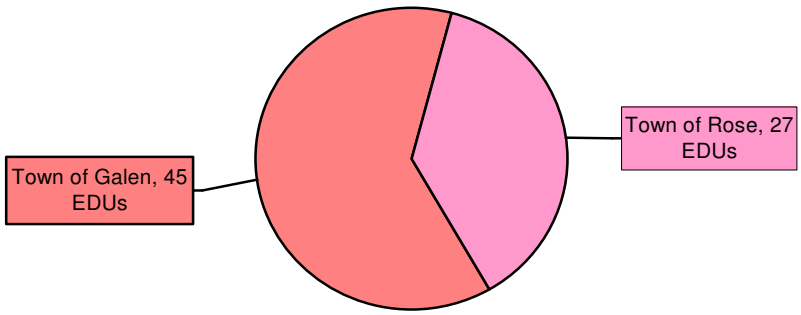
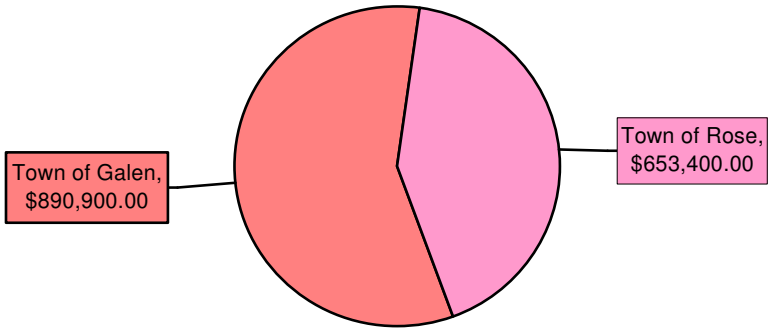


Figure IX-10 – Clyde-Rose Transmission Corridor Capital Cost



4. Savannah-Butler Transmission Corridor

The Savannah-Butler Transmission Corridor connects the Savannah and Butler service areas. South Butler is also the potential connection point for the Central Transmission Corridor. The intent of the connection is to supplement flow in the Town of Butler and to provide a means for supplying water to South Butler. The Town of Butler has identified a need for public water in the South Butler area based on the failure of several private septic systems and lack of space for new systems due to the location of existing wells.

This proposed transmission corridor is aligned along the following roads in the Towns of Savannah and Butler:

- Town or Savannah – NYS Rte 31 from Severence Rd to Armitage Rd.
- Town or Savannah – NYS 89 and Cotton Rd. from Bixby Wood Rd to Intersection of Cotton and Rte 89.
- Town or Savannah – NYS 89 from Cotton Rd to the Butler town boundary.
- Town or Butler – NYS 89 from Savannah town boundary to Foster Mead Road.
- Town or Butler – NYS 89 from Foster Mead Road to Butler Center Rd.
- Town or Butler – NYS 89 and Everhart Rd from Butler Center Rd to Livingston Road.
- Town or Butler – Livingston Rd from Everhart Rd to Whiskey Hill Road.
- Town or Butler – Whiskey Hill Road from Livingston Road to Smith Rd.
- Town or Butler – Whiskey Hill Road from Smith Road to NYS Rte 104.
- Town or Butler – NYS Rte 104 from Whiskey Hill Road to Ridge Rd.
- Town or Butler – NYS Rte 104 from Whiskey Hill Road to the Rose town boundary.

The estimated project cost for the Savannah-Butler Transmission System is $4,700,900.00. There are currently 163 EDUs in Savannah and Butler directly located along the alignment of this transmission corridor. The following figures depict the breakdown of EDU and project cost by community.

Figure IX-11 – Savannah-Butler Transmission Corridor Equivalent Dwelling Units

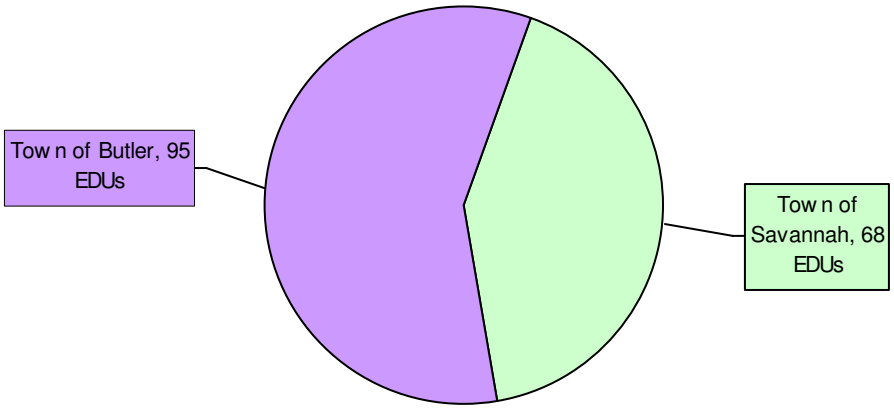
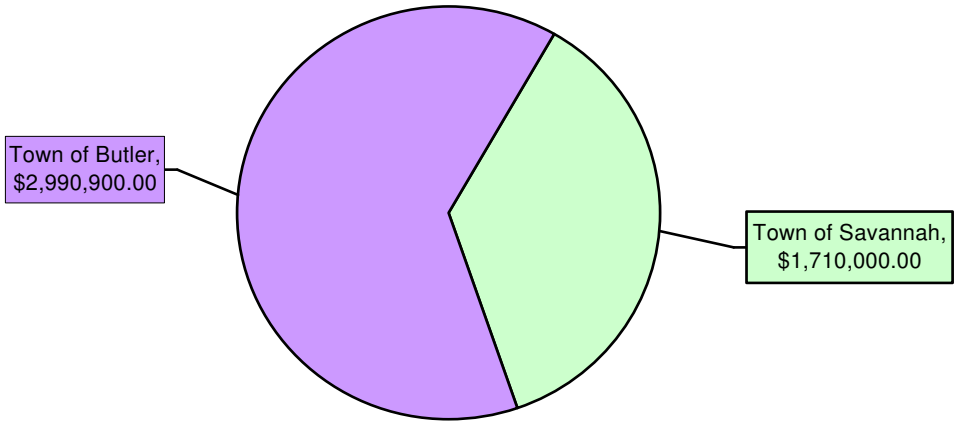


Figure IX-12 – Savannah-Butler Transmission Corridor Capital Cost



5. Summary of Transmission Corridors

The overall capital cost for the four identified transmission corridors is $13,779,900.00, which would serve 505 current equivalent dwelling units located in the five study area towns. The following figures depict the overall capital cost and current equivalent dwelling units for each of the five towns.

Figure IX-13 – Transmission Corridor Equivalent Dwelling Units by Town

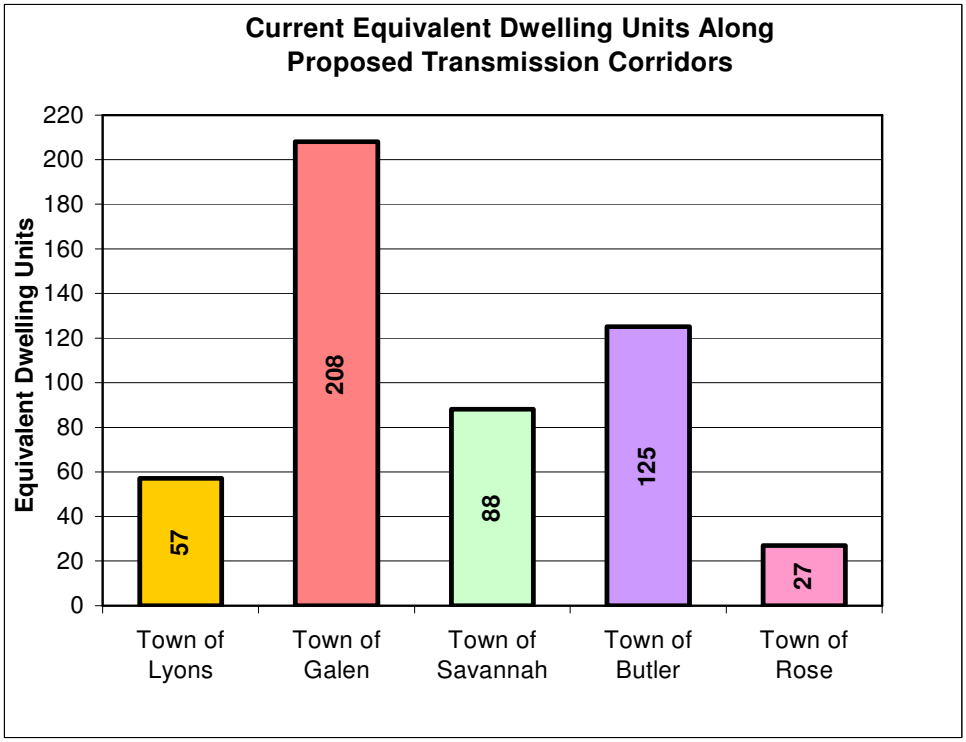
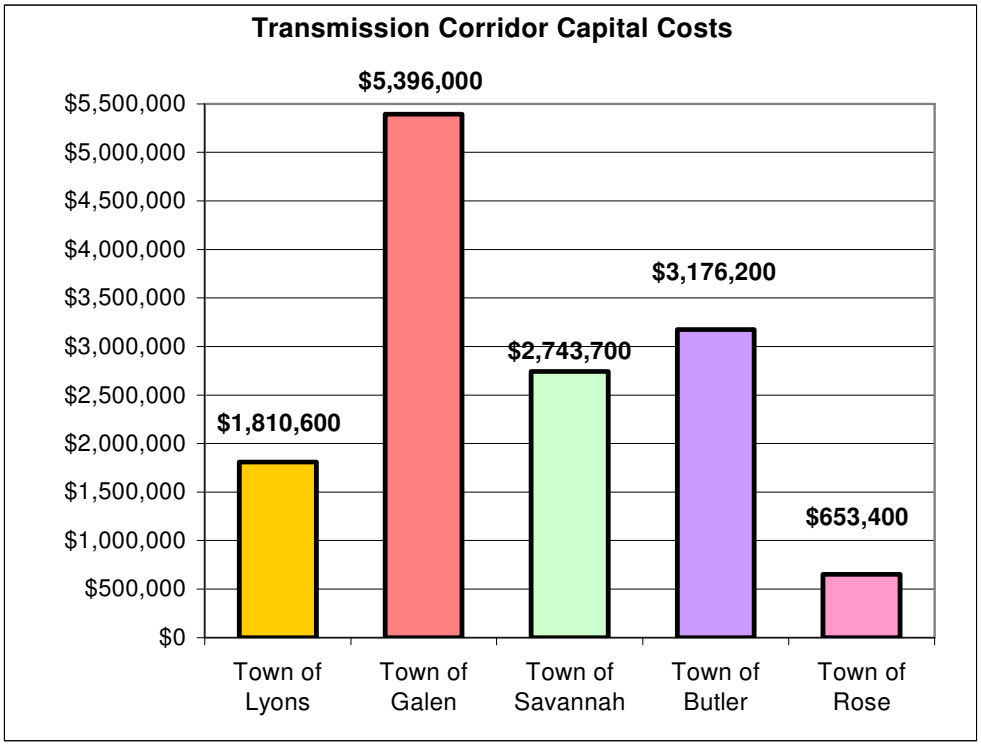


Figure IX-14 – Transmission Corridor Capital Costs by Town



E. DISTRIBUTION NETWORKS

In addition to the four transmission corridors, conceptual distribution networks were developed for each southeast Wayne County community. These distribution corridors were identified primarily to develop a realistic hydraulic model for the transmission corridors. The Town of Savannah has expressed a desire for public water supply only along transmission corridors (identified in the previous report section) as part of their long term water distribution planning.

The total estimated project cost for distribution networks in the southeast Wayne County study area is $10,298,700.00. Currently there are 459 EDUs located along these distribution areas in Lyons, Galen, Butler, and Rose. The following figures depict the breakdown of distribution system EDU and capital cost by community. Because this study is to identify the feasibility of transmission corridors for water service to the southeast portion of Wayne County, only the four transmission corridors will considered for future financial analysis in the remaining sections of this report.

Figure IX-15 – Distribution Network Equivalent Dwelling Units

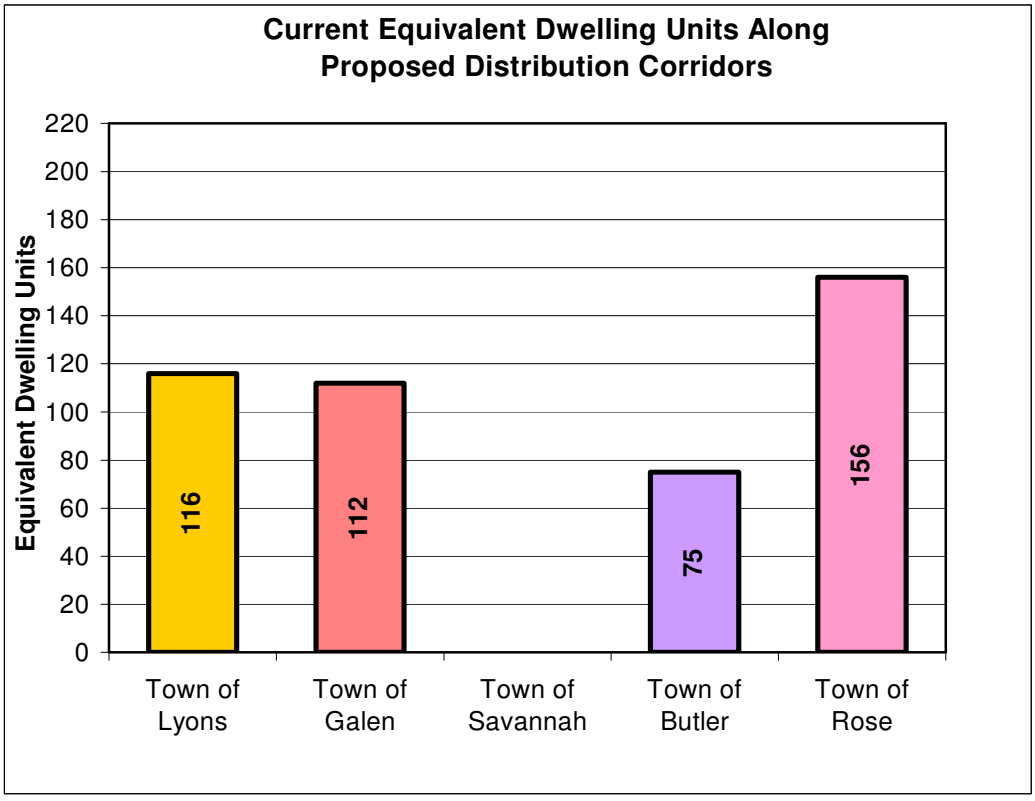
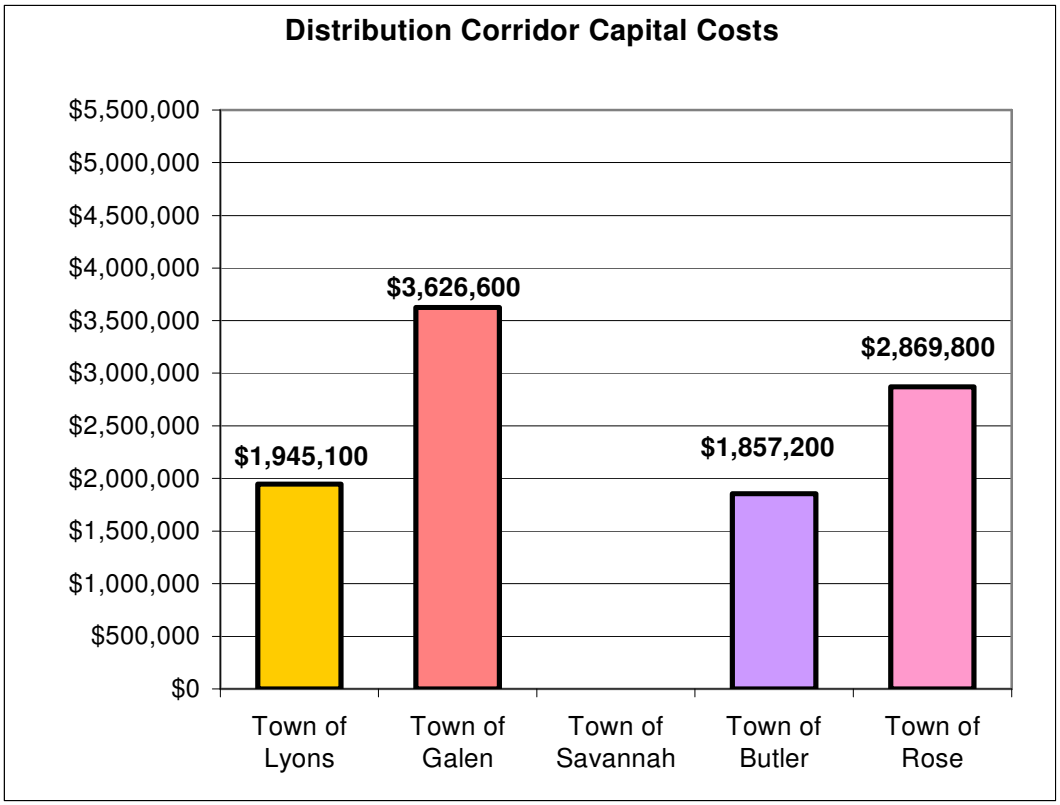


Figure IX-16 – Distribution Corridor Capital Cost



X. VILLAGE OF LYONS WATER SUPPLY

The Village of Lyons is reviewing its options as a local water supplier. To this end, the Village of Lyons has contracted with LaBella Associates to perform an independent water rate study to determine the actual cost to produce and supply water to its customers. The water rate from this separate study is only for existing conditions. Currently, the Village obtains its water from on-site wells (312,000 GPD) and from the WCWSA (200,000 GPD). A third source, the Junius Ponds supply, was discontinued in 2002.

A. TREATMENT PLANT

1. Existing Conditions

The Village of Lyons water treatment plant was given a cursory review to determine improvements necessary for the plant to continue to provide a safe and reliable water supply. The existing water treatment plant utilizes well water with liquid chlorine for disinfection and also provides softening. Well water is pumped directly to the softeners before discharging to a clear well where unsoftened water is blended to create water with a desired hardness. Water is then pumped from the clear well into the distribution system. Two raw water wells and a brine well utilized to regenerate the water softeners are located at the water treatment plant.

The treatment plant originally included coagulation, flocculation, sedimentation, filtration and softening unit processes. Only raw water from Junius Ponds was run through the filters. Flow was then combined in a mix tank with well water and pumped through the softeners. Flow from the softeners was then mixed with un-softened water to produce a desired hardness before being pumped into the distribution system.

In October 2002, New York State Health Department issued a report, "Final Report, Comprehensive Performance Evaluation, Village of Lyons Water Treatment Plant." The report recommended that the "Village evaluate the cost of upgrading their plant with other practical alternatives, such as purchasing water to meet their needs." The report also stated that the filters need major upgrades to meet regulations and ensure reliable production in the future.

Following the 2002 inspection, the Junius Ponds supply was discontinued and the raw water line abandoned. Once the ponds were abandoned, the Village discontinued using the sedimentation basins and filters. The Village of Lyons and the WCWSA also installed a water line and pump

station on Route 31 that connects Lyons to the Village of Newark. The pump station has a design capacity of 375 gpm.

The sedimentation basins and filters at the plant were abandoned in place and now contain standing water that may be from cracks in the tank walls that have allowed groundwater to seep into the basins. The Village has also removed some of the interconnecting piping. Significant repairs are needed to put the filters back into service.

The lack of filtration before the softeners has caused the softeners to act as filters. The existing well water contains a high iron concentration (0.89 mg/L) that is being partially removed by the softeners resulting in steadily decreasing softener capacity. Currently, the only way the Village can effectively backwash the softeners is to run both well pumps at the same time. Backwash water from the filters is discharged to a sewer that may not be connected to the municipal sanitary sewer system. Further investigation of the sewer line is needed.

Each well at the water plant has an approved capacity of 450 gpm. The wells are designated as Well #2 and Well #3. Well #1 was located in the Village and has been abandoned. In accordance with the "Recommended Standards for Water Works," one well is a redundant well so the capacity of the well field is 450 gpm (0.648 MGD); this is approximately equal to the maximum day demand of the Village. During the review of the plant, it was reported that even though the wells are each rated at 450 gpm, Well #3 can only draw 350 gpm (0.504 MGD) before it starts to draw air. The effective capacity of the well field is therefore 350 gpm, which is 99 gpm less than the maximum day demand. Modifications to or the installation of a new well is necessary to bring the well field back to full capacity.

Further evaluation is needed to determine if the clear well needs upgrades or repairs to provide the proper contact time for virus inactivation.

The water treatment plant is in overall poor condition and needs significant repairs or replacement for its continued use as a reliable water supply. Conditions at the plant have deteriorated since the DOH inspection in 2002.

2. Potential Upgrades

Several upgrades were identified at the water treatment plant that are needed to provide a safe and reliable water supply and to bring it into compliance with the "Recommended Standards for Water Works." These upgrades include the following:

- adding pre-oxidation to help remove iron,
- upgraded flocculation and sedimentation basins,
- new filters,
- new softeners,
- new well,
- upgraded instrumentation and control system.

Because the water plant already has an on-site brine well suitable for recharging the resin in the softening system, a brine generation system is not needed.

The average day demand of the system is 419,000 GPD with a maximum day demand of 647,000 GPD. An upgraded water treatment plant would be designed in accordance with the "Recommended Standards for Water Works," sized to produce the maximum day demand with one filter out of service.

In order to reliably provide for existing demands and to allow the Village to consider expansion in its own system and the ability to sell water to neighboring communities, the upgraded water plant should have an approximate capacity of 884,000 GPD.

Similar projects completed in recent years have had construction costs of approximately $2,200,000 with total project costs of $3,615,000 including soft costs and contingency.

Table X-1 - Probable Village of Lyons Water Plant Cost

Village of Lyons Water Treatment Plant
Probable Project Costs

MOB & DEMO	$	53,000.00
SITE WORK		
CLEAR GRUB STRIP TS	$	35,000.00
STONE DRIVES & BASE	$	5,000.00
DRAINAGE PIPE & DI,s	$	12,500.00
WATER MAINS	$	6,000.00
SEWER	$	25,000.00
TOPSOIL AND SEED	$	10,000.00
PAVEMENT	$	6,500.00
	$	100,000.00
BUILDING		
EXCAV.& BACKFILL	$	24,000.00
FOOTINGS	$	40,000.00
MASONRY	$	80,000.00
FLOORS/INC,L PLBG	$	75,000.00
PRECAST PLANK	$	20,000.00
BUILDING	$	190,000.00
	$	429,000.00
MECHANICAL		
WELL PUMP	$	52,000.00
MISC. REPAIRS TO EXISTING VAULTS	$	30,000.00
REPLACE HIGH LIFT PUMPS	$	60,000.00
FILTERS (4) & SOFTENER (2)	$	660,000.00
PROCESS PIPING & VALVES	$	220,000.00
CHLORINE EQUIP	$	30,000.00
PHOSPHATE EQUIP	$	10,000.00
PAINT	$	70,000.00
	$	1,132,000.00
TOTAL GENERAL CONSTRUCTION	$	1,714,000.00
ELECTRICAL / INTEGRATION	$	360,000.00
HVAC	$	62,500.00
PLUMBING	$	62,500.00
PROBABLE CONSTRUCTION COST	**$**	**2,199,000.00**
ADMINISTRATIVE	$	126,000.00
TECHNICAL	$	748,000.00
GEOTECHNICAL & SPECIAL INSPECTIONS		$102,000.00
CONTINGENCY		$440,000.00
PROBABLE PROJECT COST	**$**	**3,615,000.00**

B. VILLAGE OF LYONS WATER RATES

The Wayne County IDA and the Village of Lyons commissioned a separate study of water rates within the Village, partly as a consequence of declining water sales and the closure of Parker Hannifin, a major industrial customer. Village water sales totaled approximately 160 million gallons in 2000, but had fallen to only 114 million gallons in 2009. Taking into account the closure

and declines in other sales, the study found 80 million gallons to be a realistic projection for future sales in coming years. The study also found that water loss within the system, attributed to an unknown combination of failing meters, unmetered discharges and leaks, amounted to approximately 73 million gallons per year.

Rates charged to customers outside the Village are higher than those charged within the Village. In past years the current rate structure has generated an average of approximately $5.40 per thousand gallons of water sold. Water fund expenditures totaling approximately $670,000 were budgeted for the fiscal year which ended in May of 2010. Assuming future sales of only 80 million gallons per year, this level of expenditure would be equivalent to almost $8.40 per thousand gallons sold – a potential deficit of about $3.00 per thousand gallons sold given the current rate structure. This level of expenditure and the associated potential deficit include approximately $0.28 per thousand gallons sold in current debt service that would eventually be retired, but do not include additional expenditures of $0.90 to $1.80 per thousand gallons sold that could be required for future debt service on necessary capital improvements identified in this report.

The Village currently purchases a minimum of 73 million gallons of water per year from the WCWSA at a cost of $2.38 per thousand gallons and produces the balance of their water needs. The study estimated the annual expenditures associated directly with water production as $284,361. In a projected scenario in which 80 million gallons is sold annually and 73 million gallons continues to be lost, the volume produced rather than purchased would be 80 million gallons (a total output of 153 million gallons; it is mere coincidence that the relative volumes for water production and purchase correspond exactly to the relative volumes that are sold and lost). In a corresponding scenario, where the only change was a decision to abandon production and instead purchase all water at the current rate, the study estimated a potential net savings of approximately $1.17 per thousand. This estimated savings included the elimination of staff and other expenditures involved in water production offset by the anticipated increase in costs to purchase the water now produced.

Regarding the annual loss of some 73 million gallons, the relative contributions from faulty meters and from leaks is unknown. Elimination of losses associated with faulty meters through meter repair or replacement would reduce the volume of water now seen as lost and increase the volume of water sold (total output would remain unchanged). Comparable reductions accomplished through elimination of leaks would reduce both the volume of water lost and the total output, but

would not affect the volume of water sold. The economic effects of any such reductions in water losses would therefore be different depending upon whether they resulted from meter replacements or leak repairs. In scenarios where the Village continues to produce water rather than move to a purchase only scenario, the requirement to purchase a minimum volume of water (currently 73 million gallons per year) must also be taken into account as it would affect the proportion of water that would be purchased and the proportion that would be produced.

Table X-2 – Anticipated Village of Lyons Water Rates (Produce & Purchase vs. Purchase)

Annual Water Loss, Production, Purchase and Est. Expenditures per 1,000 gallons sold							
	All Volumes Shown in 1,000's of gallons per year						
	A	**B**	**C**	**D**	**E**	**F**	**G**
Loss avoided – leak	**0**	**18,250**	**36,500**	**54,750**	**0**	**0**	**0**
Loss avoided – meter	**0**	**0**	**0**	**0**	**18,250**	**36,500**	**54,750**
Volume Sold	**80,000**	**80,000**	**80,000**	**80,000**	**98,250**	**116,500**	**134,750**
Volume Lost	**73,000**	**54,750**	**36,500**	**18,250**	**54,750**	**36,500**	**18,250**
Total Output	**153,000**	**134,750**	**116,500**	**98,250**	**153,000**	**153,000**	**153,000**
Scenario I – Produce and Purchase – (Minimum Purchase of 73,000,000 gallons per year)							
Total Est. Expenditure per 1,000 gallons sold	***$8.39***	***$8.39***	***$8.39***	***$8.39***	***$6.83***	***$5.76***	***$4.98***
Scenario II – Produce and Purchase – (No Minimum Purchase)							
Total Est. Expenditure per 1,000 gallons sold	***$8.39***	***$7.85***	***$7.31***	***$6.77***	***$6.83***	***$5.76***	***$4.98***
Scenario III – Purchase Only – (Minimum Purchase not a factor)							
Total Est . Expenditure per 1,000 gallons sold	***$7.22***	***$6.68***	***$6.13***	***$5.59***	***$5.88***	***$4.96***	***$4.29***

The preceding chart illustrates the anticipated expenditure per thousand gallons sold in a number of scenarios which differ with respect to water loss, water production and water purchase. With respect to water loss, column A depicts the baseline in which water loss remains as it is now (an annual loss of 73 million gallons). The estimated status quo, in which water loss remains as it is now, sales remain at 80 million gallons per year, and purchases remain at 73 million gallons per year appears in column A under Scenario I (an expenditure of approximately $8.39 per thousand gallons sold). The corresponding scenario in which the only change is the Village's decision to

abandon water production and rely exclusively on water purchases to meet its needs can be found in column A under Scenario III (a lower expenditure of approximately $7.22 per thousand gallons sold – the anticipated savings of $1.17 per thousand referenced earlier).

Scenarios in which the current estimated water loss is reduced by half are found in columns C and F (less and more extensive reductions are illustrated in the accompanying columns). Column C depicts those scenarios in which the water loss is reduced by half through elimination of leaks and column F depicts scenarios in which the same level of reduction is realized through meter replacement or repair. No reduction in the expenditure rate is seen in column C in Scenario I where water sales remain as they are now, as the obligation to purchase a minimum volume of water ensures that the only reduction would be in the volume of water produced, the costs of which are believed to be fixed. In the absence of this obligation, the volume of water purchased would decline and the expenditure would decrease to approximately $7.31 per thousand gallons sold as is shown in column C under Scenario II. In the purchase-only Scenario III, the expenditure would decline further, to approximately $6.13 per thousand. Comparing columns C and F, it can be seen that the expenditure rate per thousand gallons drops furthest when lost water is converted to sold water via meter replacement.

Some of the most optimistic scenarios yield an estimated expenditure rate which approaches or is below the current estimated average revenue rate of $5.40 per thousand gallons. On the other hand, in those scenarios in which water loss remains high, the estimated expenditure rate remains well above the estimated average revenue rate.

As the table above shows, the rates are lowest overall in the scenarios in which all water is purchased. This is partly a consequence of the fixed costs associated with water production which are unaffected when leaks are eliminated.

C. ROUTE 31 PUMP STATION

The Route 31 pump station was constructed as a means of supplementing the well water supply when the Junius Ponds were taken off line. On average the Village purchases 200,000 GPD from the WCWSA with a contract maximum of 400,000 GPD. Eliminating the water treatment plant would require all of the water to be supplied from the Route 31 pump station, which would mean that the pump station needs to be upgraded to provide the maximum day demand with the largest pump out of service. The station would therefore need to be modified to a capacity of at least 450 gpm (647,000 GPD). The approximate cost to upgrade the station is $7,500. Upgrades include changing the pump impeller. The existing casing, housing and motors can be re-utilized.

Upgrading the pump station is one option for increasing the supply to Lyons. The second option is to connect to the WCWSA either on Waters Road or on Coleman Hill Road in Arcadia. The Waters Road connection can supply 820 gpm and is subject to the construction of a proposed water district on Waters Road in Arcadia. The Coleman Hill Road connection can supply 1,000 gpm and is subject to construction of a proposed water district in Arcadia and in the Town of Lyons. Either connection would provide water at sufficient grade to avoid the need to upgrade the pump station.

D. BACKWASH WATER

It is unclear where the current backwash water from the water treatment plant discharges; to a stream or to the Village's wastewater treatment plant. Further study is needed. In the event the backwash water goes to a stream, the water plant will need to obtain a SPDES permit. The plant currently does not hold a SPDES permit for the discharge of backwash water. Alternatively, the backwash water can be directed to the wastewater treatment plant.

A 0.88 MGD water plant using high rate pressure filters needs approximately 140 sf of filter area, which will produce approximately 2,100 gpm of backwash water. The capacity of the wastewater treatment plant would need to be reviewed to determine if it can treat the additional backwash load. A limited head works analysis would also be needed to determine the effects of the additional iron load and sodium load from the softeners on the wastewater plant.

E. DISTRIBUTION SYSTEM

Hydraulic analysis of the Village of Lyons distribution system identified several areas that need improvement to increase transmission capacities, improvements need in the industrial park and for general benefit of the Village system.

1. Transmission Improvements

Upgrades needed for transmission through the Village of Lyons include the following:

- Replace the 4-inch and 6-inch pipes on Montezuma St. with 12-inch pipe (3,290 ft).
- Replace the 8-inch pipe on Geneva St. between Water St. and Montezuma St. with 12-inch pipe (550 ft).
- Replace the 6-inch canal crossing on Geneva St. with 10-inch pipe (790 ft).

2. System Improvements (Industrial Park)

Upgrades needed to improve pressures and fire flows in the industrial park area of the Village of Lyons include the following:

- Replace 6-inch on Geneva St. from Franklin St to Route 31 with 10-inch (830 ft).
- Install new 10-inch on Geneva St. from Depew St. to Franklin St. (240 ft).
- Install new 12-inch along Paliotti Parkway and back-lots connecting Franklin St to Sohn Alloway (5,250 ft).
- Clean and line existing 10-inch on Geneva St. from Waters St. to Depew St. (1,330 ft).
- Clean and line existing 14-inch on Geneva St. from Depew St. to Dunn Road. (3,050 ft).
- Clean and line existing 14-inch on Dunn Road. (3,470 ft).

3. System Improvements (Above Butternut Street)

Upgrades needed to improve pressures and flow in the Village, above Butternut Street, include the following. These improvements depend on a connection in the Town of Lyons to the WCWSA in the Town of Arcadia:

- Replace 6-inch with 8-inch on:
  - Hillcrest Dr. (770 ft)
  - Dickerson St. (2,690 ft)
  - Cherry St. (1,890 ft)
  - Sunset Dr. (1,170 ft)
  - Locust Hill Dr. with back-lot section connecting to the Pearl St. Tanks (1,500 ft)
  - Maple St. from the Village limits to Van Marters Ln. (1,500 ft)
- Replace 4-inch with 8-inch on Van Marters Ln. (1,610 ft)
- Install new 8-inch that connects Van Marters to Hillcrest Dr. (490 ft)
- Install check valves on:
  - Butternut St. at Dickerson St.
  - Queen St. between Bear St. and the connection for the upgraded 8-inch line.
- Install dual acting pressure reducing valve on Maple St. between Van Marters St. and Culver St.

4. System Improvements (General)

Upgrades needed to improve pressures and flow in the Village, below Butternut Street, include the following:

- Replace the 4-inch with 8-inch on:
  - Catherline St. north of Ditton St. (810 ft)
  - Joy St. (300 ft)
  - Rice St. (1,190 ft)
  - Shuler St. (1,390 ft)
  - Cross St. (180 ft)
  - N. Canal & Canal St. from Manhattan St. to the north end of the line (3,125 ft.) This improvement is necessary for a water district in the Town of Lyons, north of the Village.
- Replace the 6-inch with 8-inch on:
  - Cole Road (1,235 ft)
  - Cross St. (2,450 ft)

XI. TOWN OF ROSE WATER SUPPLY

Discussions with the Town of Rose determined that its water production capacity does not meet the Recommended Standards for Water Works requirement that production capacity shall meet maximum day demand with the largest production unit out of service. Rose has two well fields, one on Catchpole Road and one on Salter- Colvin Road.

The Catchpole location includes two wells, No. 1 and No. 3. Well No. 1 is abandoned. Well No. 3 pumps to an air stripping tower which discharges to a clear well. Water is pumped from the clear well through a pressure filter into the system. The pressure filters are in poor condition and in need of replacement; capacity of the filters is currently limited to 160 gpm. Well No. 3 is typically utilized only on an emergency basis.

There are two wells at Salter-Colvin Road, No. 2 and No.4. Well No. 2 pumps directly into the system with a capacity of 200 gpm. Well No. 4 pumps through a granular activated carbon filter into the system. The rated capacity of the well is 600 gpm but the practical capacity is 350 gpm. Withdrawing more than 350 gpm produces poor quality water.

Improvements are needed to the Town of Rose water system in order to meet current and future demands with the largest treatment unit out of service. Improvements can include the following.

- install new treatment equipment at both well fields,
- increase well capacity by installing new wells,
- purchase water from adjacent water suppliers, or
- a combination of the above.

In the Town of Rose, industries that rely on the consistent quality of water from the Rose well supply have expressed a concern to the Town that a switch to lake water may affect the quality of its products. Lake water quality can vary by the season. This concern tends to limit supply options for the Town of Rose. Review of the Town water system and areas identified as future service areas determined that modifications can be made to the system that allow the use of both well and lake water. Valves in the system can be closed so that the industries and most of the existing users can continue to receive well water. The remainder of the system, including the areas of expansion, would be supplied by an adjoining water supplier.

XII. MANAGEMENT STRUCTURE

The proposed system of transmission mains presents a regional framework that will ensure that southeast Wayne County municipalities will have sufficient water to serve their needs during the 20-year planning period. This section describes the existing management and operational entities and recommendations for future institutional configurations.

A. EXISTING INSTITUTIONAL STRUCTURES

1. Wayne County Water & Sewer Authority (WCWSA)

The Wayne County Water & Sewer Authority (WCWSA), a public benefit corporation organized under the New York State Public Authorities Law in 1987, is empowered to operate water systems and to supply water to municipalities and customers throughout Wayne County. The Authority distributes an average 850,000 gallons of water each year to 9,000 metered accounts and wholesale customers. It operates and maintains more than 300 miles of transmission and distribution main, 7 water storage tanks and 4 pumping stations within Wayne County. The facilities in the water system are either owned by the Authority or leased from other municipalities or water districts.

The Authority currently operates and maintains water systems which supply water within the Towns of Macedon, Walworth, Palmyra, Marion, Arcadia, Lyons, Butler, Huron, Sodus and Wolcott. The Authority also supplies water on a wholesale basis to the Villages of Macedon and Lyons and to the Cayuga County Water and Sewer Authority.

WCWSA staff have experience and expertise in water system operations, maintenance and administration of water systems. The WCWSA is available, as requested, to provide services to existing water systems such as billings, meter reading or staffing.

2. Village Water Systems

The Villages of Lyons and Clyde produce their own water supplies, maintain the infrastructure and handle administrative tasks such as billing. Some of the Village water department staff also have other responsibilities, such as the maintenance of roads and other facilities and snow plowing.

The Village of Lyons is considering abandoning its existing water source and purchasing all of its water wholesale. It intends to continue to maintain the distribution system within the Village and to administer the system for Village customers.

3. Town Water Districts

In Towns outside incorporated Villages, water districts have been established to provide water service to residential and business properties. The process for creating a water district is established by NYS Town Law Article 12 and 12A. The Town Board initiates the process either on its own or in response to a petition submitted by residents and property owners. A Map, Plan and Report must be prepared to determine the feasibility, total project costs, and costs to the potential users. Following a public hearing, the Town Board would resolve to form the water district subject to a permissive referendum. Alternatively, water districts can be created through a mandatory referendum or petition process.

The Towns of Rose and Savannah have established water districts to provide public water to customers within their jurisdictions. These towns also produce their own water supplies, maintain the infrastructure and handle administrative tasks such as billing utilizing staff that typically have other responsibilities.

B. RECOMMENDATIONS FOR SHARED SERVICES AND CONSOLIDATION

Those municipalities that currently distribute their own water supplies (the Villages of Lyons and Clyde and the Towns of Rose and Savannah) should retain responsibility for operating, maintaining and administering their own systems. However, these municipalities should seek to reduce costs and improve efficiencies by consolidating or sharing services such as billing in order to reduce costs and improve efficiencies. For example, the WCWSA may be able to provide services such as meter reading and billing, or to provide operational staff on a part time, temporary or interim basis as needed. Such services would be arranged utilizing inter-municipal agreements.

Towns that do not currently maintain water system staff (Butler, Galen and Lyons) are encouraged to work with the WCWSA and/or neighboring municipalities to supply water to new water districts that may be established in their communities. This will eliminate the need for these Towns to hire additional staff or provide training to existing staff to maintain, operate and administer water systems.

C. RECOMMENDATIONS FOR TRANSMISSION MAIN CONSTRUCTION AND MAINTENANCE

The construction of transmission mains to supply water to the region is critical to supplying sufficient and reliable water supply to communities in southeast Wayne County. Cooperation

among various jurisdictions is needed to ensure implementation of the regional framework described in this study.

The proposed new transmission mains will result in regional benefits by allowing interconnections among the various water systems and the extension of water service to additional areas in the region. Because of their significance to the region, the transmission mains should be operated and maintained by the WCWSA rather than the municipalities in which they are located. This arrangement will facilitate construction of transmission mains that cross municipal boundaries. In addition, the WCWSA has the personnel and equipment needed for the specialized flushing and maintenance required of transmission mains.

The WCWSA can construct transmission mains outside of established water districts, and can provide for individual service connections from the main. Alternatively, a Town or County water district can be created.

The additional cost of installing and maintaining a 12" transmission main rather than an 8" distribution main need not be borne by the properties within the water district. The Map, Plan and Report prepared for the proposed district would distinguish between those costs that would be borne by the individual property owners within the district and the incremental cost of a transmission main. The additional cost of the transmission main could be borne by a regional entity such as the WCWSA or Wayne County or shared among the benefiting entities in the region. The cost would likely need to be subsidized by grants and/or through an agreement with a large user.

An inter-municipal agreement will be required to specify each party's role in the construction and maintenance of the transmission mains. A recent example of this type of arrangement involved the construction of a new transmission main through the Towns of Rose and Huron in Wayne County. A grant from the US Department of Environmental Protection (USEPA) provided a portion of the funding. Additional funds were provided by Marshall Farms, which would utilize a large amount of water, Wayne County IDA, and a loan to the Town of Huron from USDA Rural Development. The Inter-municipal Agreement used in the development of this transmission main is useful as a model and is included in Appendix H.

In summary, the following process is proposed for the construction of the transmission mains that comprise the longterm regional framework for supplying water to southeast Wayne County communities:

- Either the Town or Wayne County will take the lead by establishing a water district for the area through which the transmission main will pass.
- WCWSA will work with the Town(s) and/or County to facilitate construction of the transmission main. An inter-municipal agreement will specify respective roles and responsibilities regarding funding, design, and the ownership and ongoing maintenance of lines.

The phasing of each section will depend on local needs and the availability of funding.

XIII. ENVIRONMENTAL/PERMITTING FACTORS

The most prominent environmental issues that may affect transmission corridor construction in the southeast Wayne County area are summarized below:

A. STATE ENVIRONMENTAL QUALITY REVIEW ACT

The installation of publicly-owned water transmission and distribution systems in the study area will be subject to the provisions of the New York State Environmental Quality Review Act (SEQR). The basic purpose of SEQR is to incorporate the consideration of environmental factors into the existing planning, review and decision-making processes of state, regional, and local governmental agencies at the earliest possible time. To accomplish this goal, SEQR requires that all agencies determine whether the actions they directly undertake, fund or approve may have a significant impact on the environment, and, if it is determined that the action may have a significant adverse impact, prepare or request an environmental impact statement.

It was the intent of the State Legislature that the protection and enhancement of the environment, as well as human and community resources, should be given appropriate weight with social and economic considerations in determining public policy, and that those factors be considered together in reaching decisions on proposed activities. Therefore, SEQR requires that a suitable balance of social, economic and environmental factors be incorporated into the planning and decision-making processes of governmental agencies. SEQR does not require that environmental factors be the sole consideration in decision-making.

An action is subject to review under SEQR if any state or local agency has the authority to issue a discretionary permit, license, or other type of approval for that action. SEQR also applies if an agency finds or directly undertakes a project, or adopts a resource management plan, rule or policy that affects the environment.

Once it is determined that an action is discretionary and/or affects the environment, the next step in the SEQR process is to classify the action. Using the State's classification system, a determination is made whether or not the proposed action is subject to further review under SEQR.

If further review of the action is required, a short Environmental Assessment Form (short EAF) will need to be prepared. A full Environmental Assessment Form (full EAF) may need to be prepared depending upon the classification of the action or if the short EAF will not provide

sufficient information to make a determination of environmental significance. Coordination of reviews may be required with other involved agencies and, if significant adverse environmental impacts are anticipated, the project sponsor may be required to prepare an Environmental Impact Statement (EIS).

B. WETLANDS/FLOODPLAINS

Depending upon project design, wetland areas may be impacted. In the event that final design is unable to avoid impacting such areas, all necessary federal and state wetlands permits will need to be obtained along with implementation of the necessary mitigation measures. Further, the project will need to comply with New York State's standard specifications for erosion and sediment control, including the use of silt fencing and reestablishment of vegetation. Storm Water Pollution Prevention Plans (SWPPP) must be prepared as necessary, and coverage under the DEC Phase II SPDES General Permit for Storm Water Discharges from Construction Activities (GP-0-10.001), must be obtained.

C. AGRICULTURAL LANDS

The NYS Department of Agriculture and Markets will need to review the project to ensure that it does not have an unreasonably adverse effect on the continuing viability of farm enterprises.

D. ENDANGERED/THREATENED SPECIES

The U.S. Fish and Wildlife Service and/or the NYS Department of Environmental Protection will need to be consulted as to the existence of any federally listed or proposed endangered or threatened species known to exist in the project area and if it contains any designated or proposed critical habitats.

E. ARCHEOLOGICAL AND HISTORIC RESOURCES

Clearance of project areas will need to be secured from the New York State Parks, Recreation and Historic Preservation Office (SHPO), to ensure that no archeological or cultural resources are impacted. Cultural resource surveys may need to be performed within any areas of potential impacts.

Environmental and permitting factors do not appear to differ significantly between supply alternatives. Implementation of any one of the supply alternatives will result in similar impacts.

XIV. TRANSMISSION PROJECT FUNDING OPPORTUNITIES

Several public financing programs that may be able to assist in the implementation of water transmission projects in the study area. In some instances, communities may be eligible for funding from more than one program. Brief descriptions of programs that are possible sources of funds are provided below along with information on funding eligibility.

A. DRINKING WATER SATE REVOLVING FUND

Agency:	NYS Environmental Facilities Corporation (EFC)
Program Description:	Provides a significant financial incentive for public and private water systems to finance needed drinking water infrastructure improvements (e.g. treatment plants, distribution mains, storage facilities). Potential projects must be submitted to EFC for rating and listing on the Intended Use Plan (IUP.)
Funding Type:	Subsidized low interest rate financing and limited grants for construction of eligible water system projects.
Eligibility:	Municipalities and public financing authorities in New York State
Eligibility Assessment:	Projects that protect maintain or improve water quality. Projects that are ready to proceed are generally funded. Limited funds are available. Suitable projects are those which address problems with the quality of a water supply source, including public sources and private "community" sources such as for a restaurant or manufactured home park.

B. COMMUNITY DEVELOPMENT BLOCK GRANT

Agency: NYS Office of Community Renewal

Program Description: Provides grants for community and economic development activities, wastewater and drinking water facilities, housing and public infrastructure projects.

Funding Type: Competitive Round -Public Facilities Category (Annual application process); Grants up to $600,000 for cities, towns and villages; $750,000 for counties and $900,000 for joint applications (based on 2010 round). Economic Development Open Round (accepted throughout the year); Grants from $100,000 - $750,000 may be requested for projects involving water, wastewater or other infrastructure to serve projects that create or retain jobs for moderate-income persons (at $15,000 per job created/retained).

Eligibility: Non-entitlement communities, units of local government with a population of less than 50,000 and non-urban counties. Project beneficiaries must be predominantly persons with low or moderate incomes. Projects must correct or prevent health and safety problems, slums or blight.

Eligibility Assessment: Public facilities projects will be most highly rated that solve serious, documented public health and safety problems, such as private water supplies that are contaminated by bacteria or other substances.

C. RURAL UTILITIES SERVICE WATER AND WASTEWATER DISPOSAL LOAN AND GRANT PROGRAM

Agency: U.S. Department of Agriculture Rural Development

Program Description: Provides loans and grants to water and wastewater facilities and services to low-income communities whose residents face significant health risks with service area populations below 10,000.

Funding Type: Loan terms are typically 38-years. The interest rate is indexed to the Median Household Income of the municipality or service area. Communities with median annual household income, of less than $40,000, as determined by the most recent decennial Census, are eligible for the poverty interest rate, which is currently 2.5%.

Eligibility: To provide loan and grant funds to water and wastewater projects serving the most financially needy communities. Financial assistance should result in reasonable user costs for rural residents.

Eligibility Assessment: Projects that are most likely to be funded are those that serve the most isolated, economically disadvantaged populations and that solve the most serious public health problems

D. LOCAL GOVERNMENT EFFICIENCY (LGE) PROGRAM

Agency: NYS Department of State

Program Description: Provides grants to municipalities, school districts and special districts and public authorities to encourage these entities to work cooperatively with one another to deliver public services more efficiently and at a lower cost.

Funding Types (based on 2010-2011round):

- **High Priority Planning Grants** are non-competitive grants for city or county charter revisions that include functional consolidations or increased shared services; municipal mergers, consolidations or dissolutions; countywide shared services; or the transfer of local functions to the county or to multi-county or regional entities or to plan for sustainable reductions in police, fire and highway services costs. The grant maximum is $50,000.

- **General Efficiency Planning Grants** are competitive grants offered to help identify and study opportunities to improve local government efficiency and cost savings, including consolidations of health plans or highway services. The grant maximum is $25,000 for an application submitted by two (2) municipalities. An additional $1,000 may be awarded for each additional municipality, up to a maximum of $35,000.

- **Efficiency Implementation Grants** are competitive grants designed to assist municipalities to implement plans to improve local government efficiency and cost savings. The grant maximum is $200,000 per municipality up to a maximum of $1,000,000.

- **21st Century Demonstration Projects** are competitive grants intended to promote large-scale transformative change in municipalities that can be used as models for municipal innovation. Although the size of the grant award may vary depending on the type of municipal service to be assisted, the maximum grant is typically capped at $1,000,000.

Eligibility: Projects must demonstrate that the cost to deliver services through cooperative arrangements is less than the cost for such services to be delivered by individual entities. The grant amount may not exceed the amount of cost savings that would result from cooperation.

Eligibility Assessment:	Capital projects that require the cooperation of two or more entities should be considered for LGE funding under the Efficiency Implementation or Demonstration categories. Cooperating entities who need additional study to determine how best to establish joint water districts, share staff for the maintenance of water lines, combine billing or other operations, should consider General Efficiency Planning Grants.

Rural Utilities Service is the typical funding agency utilized by these areas of Wayne County due in part to smaller than average service populations, but also because they qualify for the poverty interest rate. For the purpose of financial analysis, the following sections of this report will assume project funding, in the form of low interest loans and grants, from Rural Utilities Service.

As water districts are created, the most suitable funding option will need to be determined based on the attributes of the individual project.

XV. TRANSMISSION CORRIDOR PROJECT COSTS BY EDU

A. METHODOLOGY

This section describes the methodology employed to estimate the total annual cost per Equivalent Dwelling Unit (EDU) required to fund the proposed transmission water system infrastructure.

The first step is to develop the probable project costs for construction of each of the regional transmission corridors. In theory each individual town would complete a water district formation process for each section of the four identified transmission corridor. For this reason, and because each town has a different "affordable annual cost per EDU", project cost estimations were completed for each Town's segment of each of the four transmission corridors.

The second step involves the quantification of equivalent dwelling units located along each segment of transmission corridor. This determines how many EDUs will help to fund the capital cost of each transmission corridor segment.

The third step requires the calculation of the estimated annual capital cost per EDU using a method of project funding. For this study, the selected method of project funding is the Rural Utilities Service (RUS) - Water Loan and Grant Program. RUS is the typical funding mechanism for municipal water and sewer projects in Wayne County. This is the method of project funding would offer low interest financing and grant funding for transmission corridor projects. For the low interest loan portion of project funding the annual interest rate of 2.5% will be utilized for a 38 year term, which is the current poverty interest rate as determined by the study area's average annual household income.

The fourth step requires the calculation of the estimated annual costs per EDU for project costs resulting from water storage tank construction. As the four transmission corridors are constructed, a water storage tank will eventually become be hydraulically necessary. In the event of water tank construction, it is surmised that project cost would be split equally by all the equivalent dwelling units served by the proposed transmission corridors, along with any existing equivalent dwelling units in the study area. Also, as distribution networks are constructed off of the four identified transmission systems, these new water users would also contribute to the cost of water storage infrastructure. For the purpose of cost estimations this study assumes the water storage cost for each equivalent dwelling unit is $25.00 per year.

Step five requires a determination of the estimated commodity charges for the water main transmission corridors. Typically utility authorities, towns, and villages base water commodity charges on 50,000 gallons of water usage per year. Currently, there is a wide variance in customer's commodity charges for each Town or Village in the study area. The following table depicts these varying commodity charges.

The assumption of RUS funding does not mean to indicate that this funding will be obtainable for every section of transmission main analyzed in this report. Some segments serve a very low number of households and have a high capital cost, resulting in very high costs per EDU. Some of these projects would be unlikely to be approved for funding by Rural Development unless they were combined with distribution lines that serve additional households. However, the assumption of RUS funding makes it possible to compare the costs and potential financing for each individual project using consistent parameters.

Table XV-1 - Existing Water Commodity Charges

Distributor	Upfront Yearly Charge for First Volume Consumed	Remaining Volume Charged (1000-gallons)	Charge applied to Remaining Volume Usage ($ per 1000-Gallons)	Yearly Charge for Remaining Volume Usage	Total Yearly Charge	Charge per 1000-gallon
Town of Lyons	$ 236.00 for the first 20000 gals	30	$6.50	$ 195.00	**$ 431.00**	**$8.62**
Village of Lyons	$ 144.00 for the first 20000 gals	30	$4.70	$ 141.00	**$ 285.00**	**$5.70**
Town of Galen	$ 60.00 yearly upfront charge	50	$4.50	$ 225.00	**$ 285.00**	**$5.70**
Village of Clyde	$ 40.00 yearly upfront charge	50	$3.00	$ 150.00	**$ 190.00**	**$3.80**
Town of Savannah	$ 160.00 for the first 12000 gals	38	$4.25	$ 161.50	**$ 321.50**	**$6.43**
Town of Butler	na	na	na	na	**na**	**na**
Town of Rose	$ 28.00 for the first 24000 gallons	26	$2.25	$ 58.50	**$ 86.50**	**$1.73**
Wayne County Water and Sewer Authority	$ 60.00 yearly upfront charge	50	$4.00	$ 200.00	**$ 260.00**	**$5.20**

The existing consumers located in the Town of Lyons buy water from the Village of Lyons at a commodity charge of $8.62 per 1,000 gallons. If the Village of Lyons no longer remains as an area water supplier, as recommended in this study, it is most likely the Lyons town water districts will be operated and maintained by Wayne County Water and Sewer Authority at a lesser commodity charge per EDU. The existing consumers located in the Town of Galen buy water from the Village of Clyde at a commodity charge of $5.70 per 1,000 gallons. In the long term, it is likely the new

Galen town water districts will also be operated and maintained by Wayne County Water and Sewer Authority. It is also likely the Town of Butler will utilize a system operated and maintained by Wayne County Water and Sewer Authority. The Towns of Savannah and Rose currently operate and maintain a water supply and distribution system(s). In the long term, it is probable these towns will continue to operate, maintain, and distribute water to their residents at the current commodity charges. The following table outlines the yearly commodity charges which will be utilized in this report for each transmission corridor:

Table XV-2 - Proposed Water Commodity Charges for Transmission Corridors

Community	Commodity Charge per 1000-gallon	Average Volume Used per Year (1000-Gallons)	Total Yearly Commodity Charge
Town of Lyons	$5.45	50	$272.50
Town of Galen	$5.45	50	$272.50
Town of Savannah	$6.62	50	$331.00
Town of Butler	$5.45	50	$272.50
Town of Rose	$1.86	50	$93.00

B. ANNUAL COST PER EQUIVALENT DWELLING UNIT

The following tables summarize the estimated annual cost per EDU for the communities in the study area. The tables have been arranged by Town and provide the following information:

- The estimated project capital costs for each community that is served by transmission system(s)
- The estimated number of EDU that contribute to the reimbursement of the capital costs.
- The annual debt service for the community for each transmission system.
- Annual commodity charges as described previously.

1. Town of Lyons

Table XV-3 - Town of Lyons Estimated Annual Cost per EDU

Transmission System	Location	Extent of Corridor	Estimated Project Cost	Estimated Annual Debt Service @ 2.5% for 38 years	Equivalent Dwelling Units	Annual Debt Service Charge per EDU	Estimated Annual Commodity Charge	Estimated Annual Water Storage Surcharge	Total Estimated Annual Cost per EDU
Central Trans. System	Debusse, Emmel, Lembke, & Fairville	Maple St to Fairville Station Rd	$989,700	$40,647	26	$1,563	$272.50	$25	$1,861
Central Trans. System	Canal St, Pilgrimport Rd, Bishop Rd, & Travell Knapps Rd.	Lyons Village Line to Galen Town Line	$520,700	$21,385	21	$1,018	$272.50	$25	$1,316
Southern Trans. System	Rte 31	Clyde VL to Galen TL	$300,200	$12,329	10	$1,233	$272.50	$25	$1,530
		Total	**$1,810,600**		**57**				

2. Town of Galen

Table XV-4 - Town of Galen Estimated Cost per EDU

Transmission System	Location	Extent of Corridor	Estimated Project Cost	Estimated Annual Debt Service @ 2.5% for 38 years	Equivalent Dwelling Units	Annual Debt Service Charge per EDU	Estimated Annual Commodity Charge	Estimated Annual Water Storage Surcharge	Total Estimated Annual Cost per EDU
Central Trans. System	Travell Knapps Corners Rd and Kelsey Rd	Gannett Rd to NYS Route 414	$1,187,300	$48,763	41	$1,189	$272.50	$25	$1,487
Central Trans. System	Kelsey Rd	Rte 414 to Shepard	$435,100	$17,870	25	$715	$272.50	$25	$1,012
Rose-Clyde Trans. System	Route 414	Clyde VL to Rose TL	$890,900	$36,589	45	$813	$272.50	$25	$1,111
Southern Trans. System	Old Rte 31	Sunderville to Lock Berlin	$784,400	$32,215	28	$1,151	$272.50	$25	$1,448
Southern Trans. System	Old Rte 31	Lock Berlin to Lake Corners Rd	$1,247,000	$51,214	44	$1,164	$272.50	$25	$1,461
Southern Trans. System	NYS Rte 31	Clyde Village Line to Savannah TL	$851,300	$34,963	25	$1,399	$272.50	$25	$1,696
		Total	**$5,396,000**		**208**				

3. Town of Savannah

Table XV-5 - Town of Savannah Estimated Annual Cost per EDU

Transmission System	Location	Extent of Corridor	Estimated Project Cost	Estimated Annual Debt Service @ 2.5% for 38 years	Equivalent Dwelling Units	Annual Debt Service Charge per EDU	Estimated Annual Commodity Charge	Estimated Annual Water Storage Surcharge	Total Estimated Annual Cost per EDU
Central Trans. System	NYS Route 31 and Messner	Galen Toan Line to Messner Rd	$1,033,700	$42,454	20	$2,123	$331.00	$25	$2,479
Butler-Savannah Trans. System	NYS Rte 89 and Cotton Rd	Bixby Wood Rd to Butler Town Line	$1,029,100	$42,265	45	$939	$331.00	$25	$1,295
Butler-Savannah Trans. System	NYS Rte 31	Severence Rd to Armitage Rd.	$680,900	$27,965	23	$1,216	$331.00	$25	$1,572
		Total	**$2,743,700**		**88**				

4. Town of Butler

Table XV-6 - Town of Butler Estimated Annual Cost per EDU

Transmission System	Location	Extent of Corridor	Estimated Project Cost	Estimated Annual Debt Service @ 2.5% for 38 years	Equivalent Dwelling Units	Annual Debt Service Charge per EDU	Estimated Annual Commodity Charge	Estimated Annual Water Storage Surcharge	Total Estimated Annual Cost per EDU
Central & Butler-Savannah System	S. Butler, Rural St., NYS 89, and Everhart Rd	Savannah Town Line to Livingston Rd	$1,267,900	$52,073	75	$694	$272.50	$25	$992
Butler-Savannah Trans. System	Livingston and Whiskey Hill	Everhart Rd to Smith Rd	$615,600	$25,283	26	$972	$272.50	$25	$1,270
Butler-Savannah Trans. System	Whiskey Rill Road and Rte 104	Smith Rd to Ridge Rd	$1,025,900	$42,134	22	$1,915	$272.50	$25	$2,213
Butler-Savannah Trans. System	Rte 104	Ridge Rd to Whiskey Hill	$266,800	$10,958	2	$5,479	$272.50	$25	$5,777
		Total	**$3,176,200**		**125**				

5. Town of Rose

Table XV-7 - Town of Rose Estimated Annual Cost per EDU

Transmission System	Location	Extent of Corridor	Estimated Project Cost	Estimated Annual Debt Service @ 2.5% for 38 years	Equivalent Dwelling Units	Annual Debt Service Charge per EDU	Estimated Annual Commodity Charge	Estimated Annual Water Storage Surcharge	Total Estimated Annual Cost per EDU
Rose-Clyde Trans. System	NYS Rte 414	Galen TL to Rose Hamlet	$653,400	$26,835	27	$994	$93.00	$25	$1,112
		Total	**$653,400**		**27**				

Finally, it is necessary to estimate the amount of grant funding necessary to limit the annual cost per unit to the affordable cost per EDU as determined by the median household income, as depicted in the above tables. This straightforward calculation is based on a combination of the estimated yearly commodity costs, water storage surcharge, and the debt service payment that can be supported by the EDU's in the various communities. It is clear that grant funding will be required to meet the established affordability criteria. Section XV-Phasing of Water Supply Improvements discusses grant funding in greater detail.

XVI. PHASING OF WATER SUPPLY IMPROVEMENTS

A. FUNDING REQUIRED

Each year the New York State Comptroller's Office publishes average estimated annual cost thresholds for "typical properties" within sewer and water improvement districts. These thresholds serve as an upper limit to the total annual cost that can be imposed on a typical property (inclusive of debt, operation and maintenance, and other charges related to the improvements) without seeking special approval from the Comptroller's Office. An Equivalent Dwelling Unit as referenced in this study represents a typical property. Although the thresholds are essentially an approximate average of the annual user costs for districts established in the previous year(s), they have come to represent a quasi-benchmark for affordability. For Town water districts, the NYS Comptroller's average estimated sewer cost threshold for 2010 is $677 per year. New water districts that incorporate annual costs to the typical property that exceed this threshold require the Comptroller's approval. It is not uncommon for the Comptroller to approve higher annual costs provided there is substantial support within the special district for the proposed improvement. Generally, projects that require significant infrastructure in sparsely populated areas exceed the Comptroller's threshold. The transmission infrastructure required to convey water to distribution areas will traverse very sparsely populated areas; enough so to render the Comptroller's threshold an unrealistic criteria for affordability.

The Rural Utility Service "rule of thumb" for water and sewer projects in rural areas suggests that an annual affordable cost for a dwelling unit is equal to approximately 2% of the Median Household Income (MHI), based on the most recent census data of the municipality in which it is located. Experience over the last several years suggests that eligibility for Rural Development financial assistance in the form of low interest loans and/or grants is predicated upon limiting the annual cost to a dwelling unit to approximately 2% of the MHI. In other words, if an equivalent dwelling unit yearly water commodity costs, water storage surcharge, and debt service payment is in excess of 2% of the MHI, grant funds are necessary to subsidize the project costs in an effort to close the gap and, to the extent practical, reduce the total annual cost per unit to affordable household costs. The following table lists these affordable yearly equivalent dwelling unit costs

Table XVI-1 - Affordable Dwelling Unit Costs

Community	Median Household Income (MHI)	Affordable Annual Cost per EDU (2% of MHI)
Town of Lyons	$39,351.00	$787.00
Town of Galen	$36,216.00	$724.00
Town of Savannah	$35,474.00	$709.00
Town of Butler	$38,616.00	$772.00
Town of Rose	$40,179.00	$804.00

Based on these affordable annual costs per EDU, it is apparent that an amount of grant funding will be required for each transmission corridor project. The amount of grant money required was estimated in the following manner:

Step 1: Review the affordable annual cost per EDU for each for each transmission corridor project.

Step 2: Determine an "allowable" amount of yearly debt service payment in order to maintain an overall a yearly payment at least equal or less than the affordable annual cost.

Step 3: Used this yearly debt service repayment per EDU and number of EDUs along each corridor project to calculate the overall amount of project borrowing.

Step 4: Calculate the difference between project cost and borrowing. This "gap" is the amount of grant money each project requires.

Based on the above methodology, the following section summarizes the amount of grant funding each transmission corridor project will require.

B. IMPLEMENTATION PLAN

1. Town of Lyons

Three individual transmission corridor projects were identified for the Town of Lyons. It should be noted, a future additional transmission corridor project was identified along NYS Rte 14 south of the Village of Lyons to the Wayne County boundary. The construction of this transmission corridor may be required in the event that an outside water supply is needed from the adjacent county. However it was not included in the proposed transmission corridor implementation plan since this study has determined that within the 20 year planning period, water supplies from outside the study area are not needed. In the event that water main is constructed along this corridor as part of a water distribution system, it is recommended it be sized as a 12" water main to provide

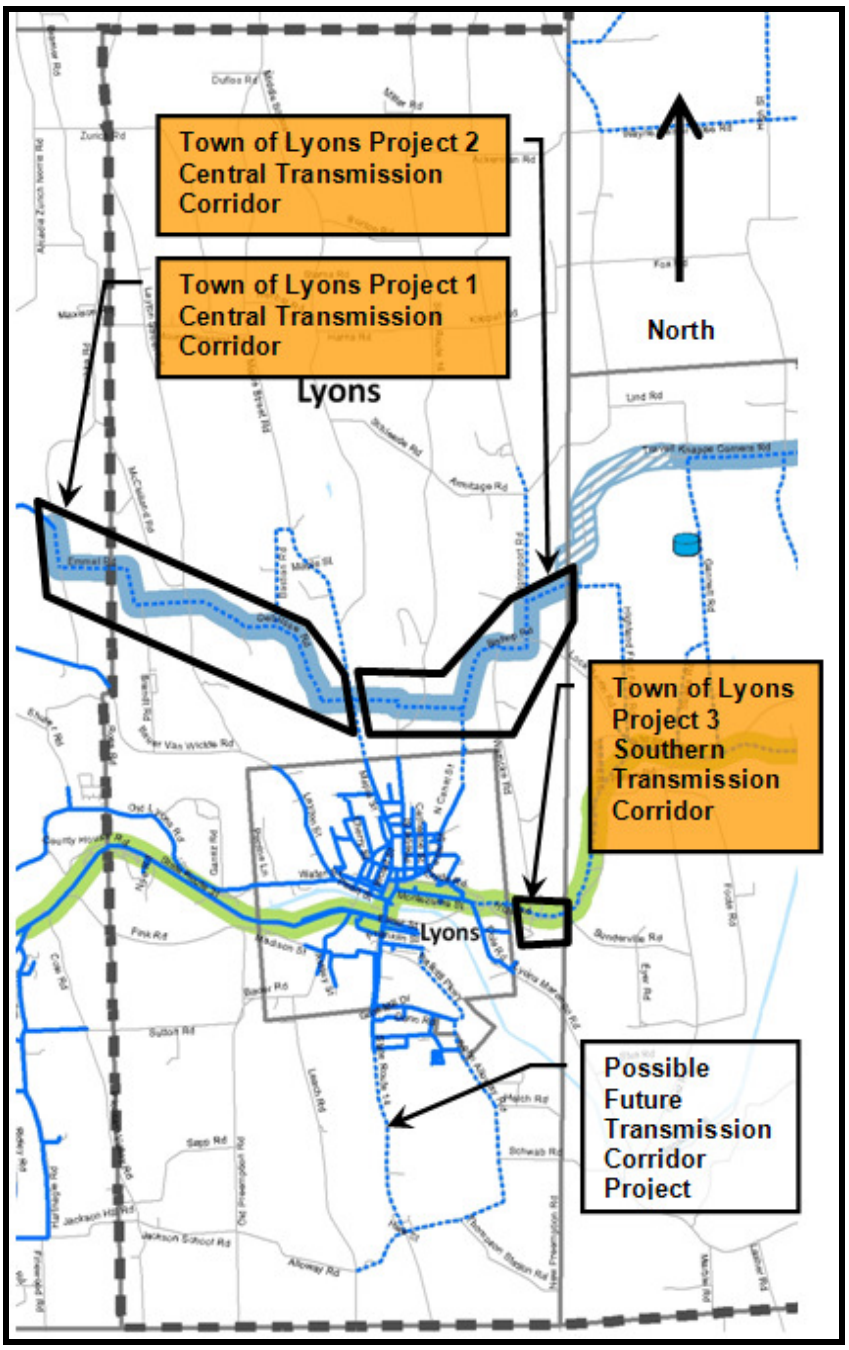
possible future transmission capabilities. This possible future project is depicted on the following map figure.

Based on 2% of the Town of Lyons' MHI, the affordable annual cost for transmission corridor projects is $787 per year. After factoring the $25 per year water storage surcharge and estimated $272.50 per year commodity charge, the allowable amount of capital dept service is $489.50 per year for a Lyons EDU. Based on this allowable yearly capital debt service, transmission corridor projects in the Town of Lyons will require an overall grant funding amount of $1,313,210.00. The following table summarizes this estimated project cost debt service and grant funding amounts.

Table XVI-2 - Proposed Town of Lyons Implementation Plan

Transmission System	Location	Extent of Corridor	Estimated Project Cost	Grant Funding Required	Low Interest Principal Loan Amount @ 2.5% for 38 years	Est. Annual Debt Service for 38 years	EDUs	Annual Debt Service Charge per EDU	Estimated Annual Commodity Charge	Est. Annual Water Storage Surcharge	Total Estimated Annual Cost per EDU
Central Trans. System	Debusse, Emmel, Lembke, & Fairville	Maple St to Fairville Station Rd	$989,700	$679,815	$309,885	$12,727	26	$489.50	$272.50	$25	$787
Central Trans. System	Canal, Pilgrimpt, Bishop, & Trav. Knps.	Lyons VL to Galen Town Line	$520,700	$270,409	$250,291	$10,280	21	$489.50	$272.50	$25	$787
Southern Trans. System	NYS Rte 31	Clyde VL to Galen TL	$300,200	$181,014	$119,186	$4,895	10	$489.50	$272.50	$25	$787
		Total	**$1,810,600**	**$1,131,210**	**$679,390**		**57**				

Figure XVI-1 – Town of Lyons Transmission Corridor Projects



2. Town of Galen

Six individual transmission corridor projects were identified for the Town of Galen. It should be noted, a future additional transmission corridor project was identified along NYS Rte 414 south of the Village of Clyde to the Wayne County boundary. The construction of this transmission

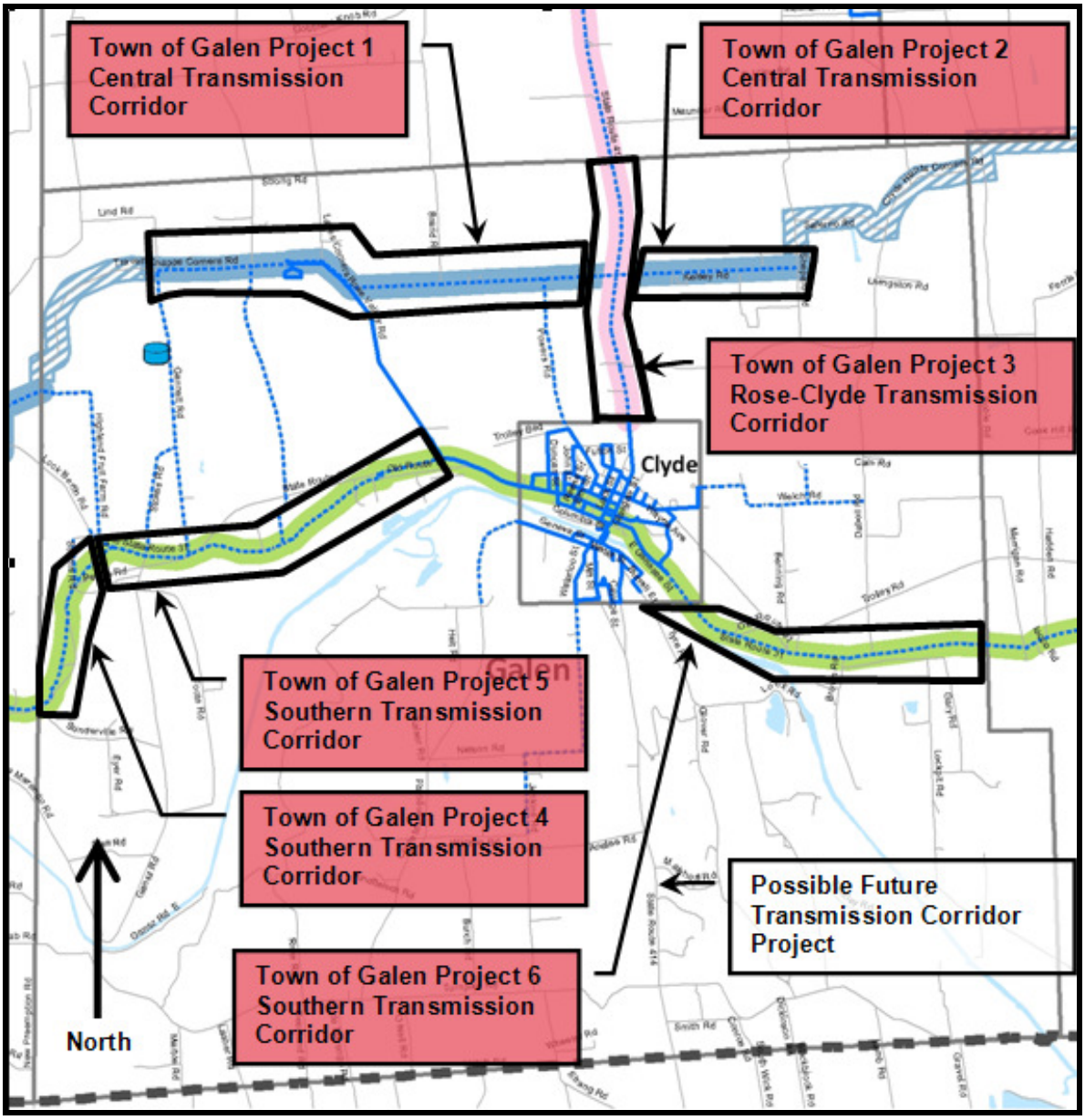
corridor may be required in the event that an outside water supply is needed from the adjacent county. However it was not included in the proposed transmission corridor implementation plan since this study has determined that within the 20 year planning period, water supplies from outside the study area are not needed. In the event that water main is constructed along this corridor as part of a water distribution system, it is recommended it be sized as a 12" water main to provide possible future transmission capabilities. This possible future project is depicted on the following map figure.

Based on 2% of the Town of Galen MHI, the affordable annual cost for transmission corridor projects is $724 per year. After factoring the $25 per year water storage surcharge and estimated $272.50 per year commodity charge, the allowable amount of capital dept service is $426.50 per year for a Galen EDU. Based on this allowable yearly capital debt service, transmission corridor projects in the Town of Galen will require an overall grant funding amount of $3,234,366.00. The following table summarizes this estimated project cost debt service and grant funding amounts.

Table XVI-3 - Proposed Town of Galen Implementation Plan

Transmission System	Location	Extent of Corridor	Estimated Project Cost	Grant Funding Required	Low Interest Principal Loan Amount @ 2.5% for 38 years	Est. Annual Debt Service for 38 years	EDUs	Annual Debt Service Charge per EDU	Estimated Annual Commodity Charge	Est. Annual Water Storage Surcharge	Total Estimated Annual Cost per EDU
Central Trans. System	Travell Knapps Corners Rd and Kelsey Rd	Gannett Rd to NYS Route 414	$1,187,300	$761,528	$425,772	$17,487	41	$426.50	$272.50	$25	$724
Central Trans. System	Kelsey Rd	Rte 414 to Shepard	$435,100	$175,483	$259,617	$10,663	25	$426.50	$272.50	$25	$724
Rose-Clyde Trans. System	NYS Rte 414	Clyde VL to Rose TL	$890,900	$423,589	$467,311	$19,193	45	$426.50	$272.50	$25	$724
Southern Trans. System	Old Rte 31	Sunderville to Lock Berlin	$784,400	$493,629	$290,771	$11,942	28	$426.50	$272.50	$25	$724
Southern Trans. System	Old Rte 31	Lock Berlin to Lake Corners Rd	$1,247,000	$790,074	$456,926	$18,766	44	$426.50	$272.50	$25	$724
Southern Trans. System	NYS Rte 31	Clyde VL to Savannah Town Line	$851,300	$591,683	$259,617	$10,663	25	$426.50	$272.50	$25	$724
		Total	**$5,396,000**	**$3,234,366**	**$2,161,634**		**208**				

Figure XVI-2: Town of Galen Transmission Corridor Projects



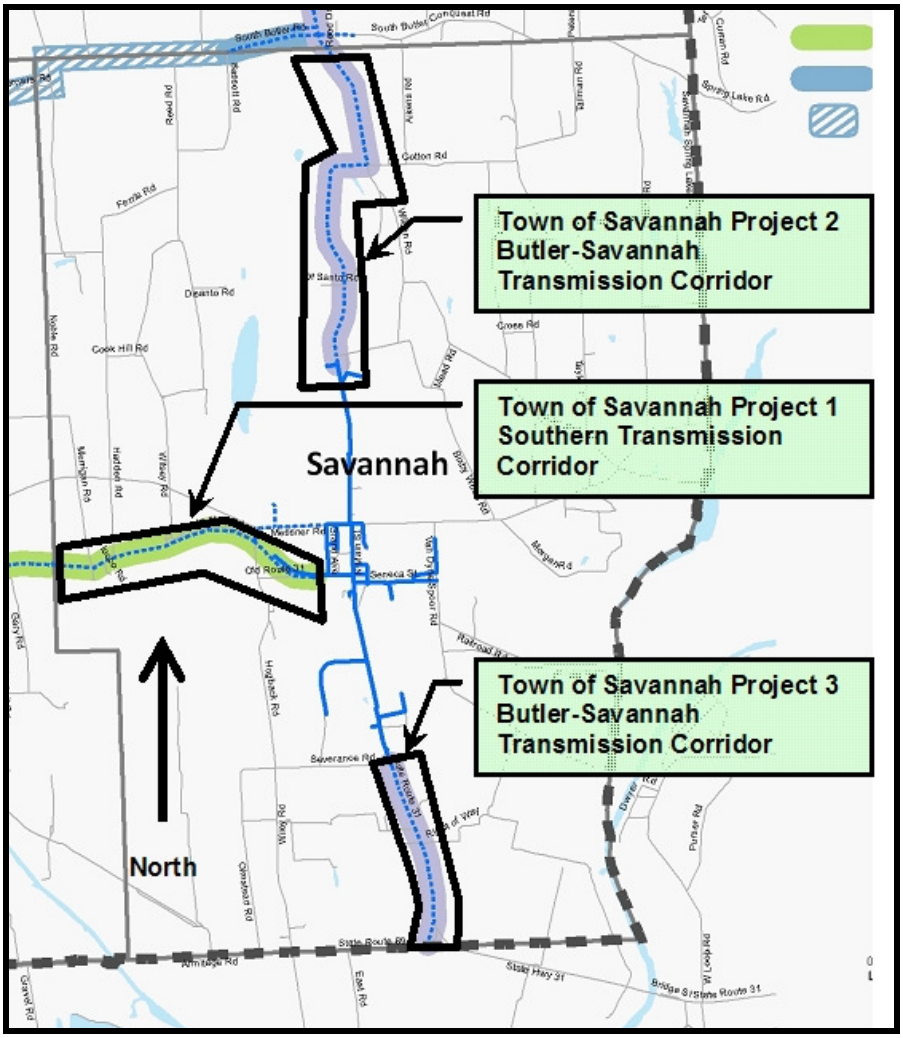
3. Town of Savannah

Based on 2% of the Town of Savannah MHI, the affordable annual cost for transmission corridor projects is $709 per year. After factoring the $25 per year water storage surcharge and estimated $331.00 per year commodity charge, the allowable amount of capital dept service is $353.00 per year for a Savannah EDU. Based on this allowable yearly capital debt service, transmission corridor projects in the Town of Savannah will require an overall grant funding amount of $1,987,335.00. The following table summarizes this estimated project cost debt service and grant funding amounts.

Table XVI-4 - Proposed Town of Savannah Implementation Plan

Transmission System	Location	Extent of Corridor	Estimated Project Cost	Grant Funding Required	Low Interest Principal Loan Amount @ 2.5% for 38 years	Est. Annual Debt Service for 38 years	EDUs	Annual Debt Service Charge per EDU	Estimated Annual Commodity Charge	Est. Annual Water Storage Surcharge	Total Estimated Annual Cost per EDU
Central Trans. System	NYS Route 31 and Messner	Galen Toan Line to Messner Rd	$1,033,700	$861,799	$171,901	$7,060	20	$353.00	$331.00	$25	$709
Butler-Savannah Trans. Sys.	NYS Rte 89 and Cotton Rd	Bixby Wood Rd to Butler Town Line	$1,029,100	$642,322	$386,778	$15,885	45	$353.00	$331.00	$25	$709
Butler-Savannah Trans. Sys.	NYS Rte 31	Severence to Armitage Rd.	$680,900	$483,214	$197,686	$8,119	23	$353.00	$331.00	$25	$709
		Total	**$2,743,700**	**$1,987,335**	**$756,365**		**88**				

Figure XVI-3: Town of Savannah Transmission Corridor Projects



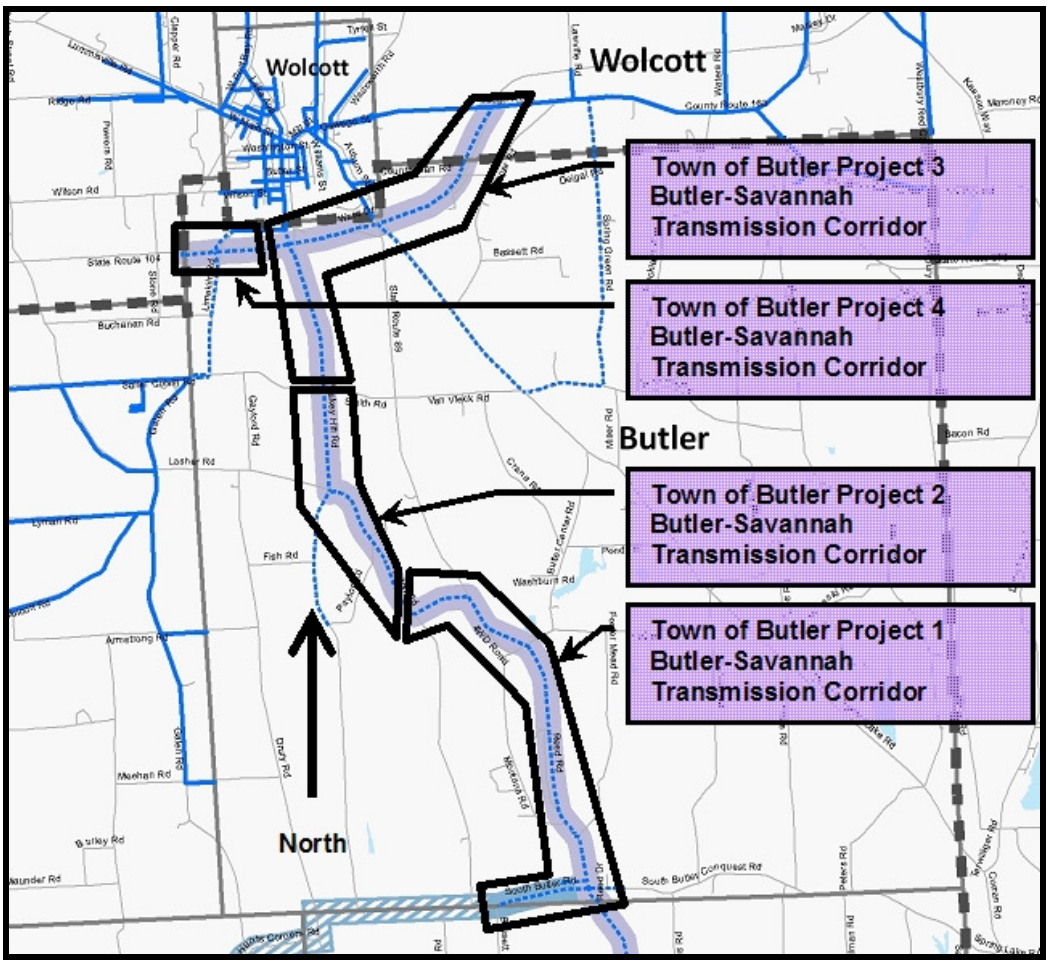
4. Town of Butler

Based on 2% of the Town of Butler MHI, the affordable annual cost for transmission corridor projects is $772 per year. After factoring the $25 per year water storage surcharge and estimated $272.50 per year commodity charge, the allowable amount of capital dept service is $474.50 per year for a Butler EDU. Based on this allowable yearly capital debt service, transmission corridor projects in the Town of Butler will require an overall grant funding amount of $1,731,051.00. The following table summarizes this estimated project cost debt service and grant funding amounts.

Table XVI-5 - Proposed Town of Butler Implementation Plan

Transmission System	Location	Extent of Corridor	Estimated Project Cost	Grant Funding Required	Low Interest Principal Loan Amount @ 2.5% for 38 years	Est. Annual Debt Service for 38 years	EDUs	Annual Debt Service Charge per EDU	Estimated Annual Commodity Charge	Est. Annual Water Storage Surcharge	Total Estimated Annual Cost per EDU
Central & Butler-Sav. System	S. Butler, Rural St., NYS 89, and Everhart Rd	Savannah TL to Livingston	$1,267,900	$401,394	$866,506	$35,588	75	$474.50	$272.50	$25	$772
Butler-Savannah Trans. Sys.	Livingston and Whiskey Hill	Everhart Rd to Smith Rd	$615,600	$315,211	$300,389	$12,337	26	$474.50	$272.50	$25	$772
Butler-Savannah Trans. Sys.	Whiskey Rill Road and Rte 104	Smith Rd to Ridge Rd	$1,025,900	$771,725	$254,175	$10,439	22	$474.50	$272.50	$25	$772
Butler-Savannah Trans. Sys.	Rte 104	Ridge Rd to Whiskey Hill	$266,800	$243,693	$23,107	$949	2	$474.50	$272.50	$25	$772
		Total	**$3,176,200**	**$1,731,051**	**$1,445,149**		**125**				

Figure XVI-4: Town of Butler Transmission Corridor Projects



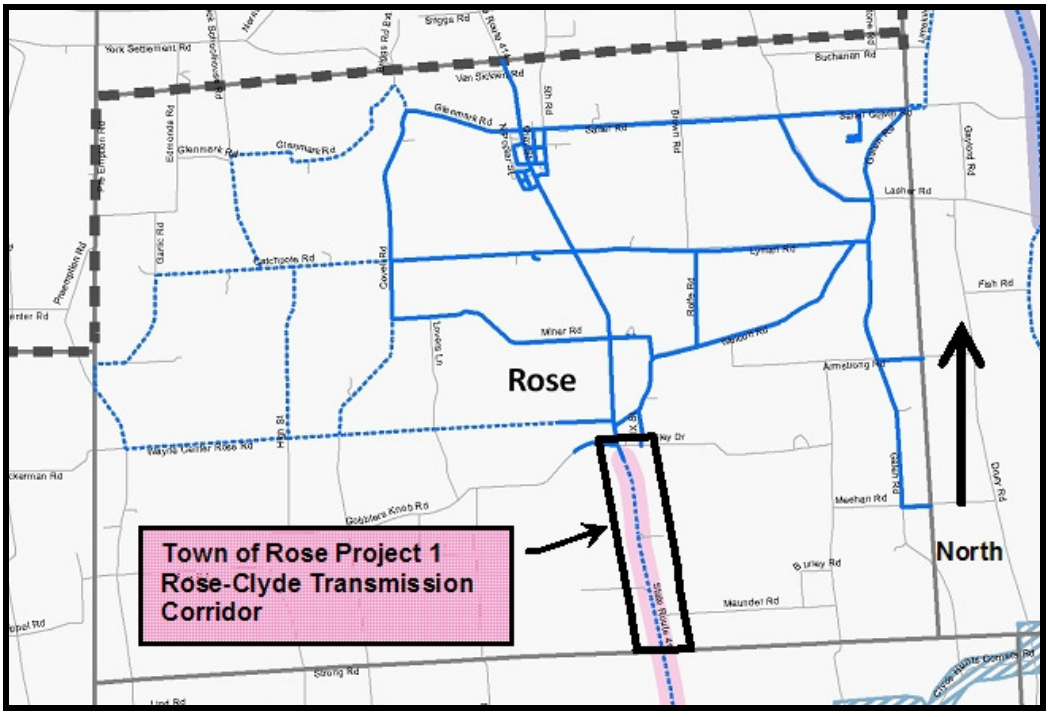
5. Town of Rose

Based on 2% of the Town of Rose MHI, the affordable annual cost for transmission corridor projects is $804 per year. After factoring the $25 per year water storage surcharge and estimated $93.00 per year commodity charge, the allowable amount of capital dept service is $686.00 per year for a Rose EDU. Based on this allowable yearly capital debt service, transmission corridor projects in the Town of Rose will require an overall grant funding amount of $202,415.00. The following table summarizes this estimated project cost debt service and grant funding amounts.

Table XVI-6 - Proposed Town of Rose Implementation Plan

Transmission System	Location	Extent of Corridor	Estimated Project Cost	Grant Funding Required	Low Interest Principal Loan Amount @ 2.5% for 38 years	Est. Annual Debt Service for 38 years	EDUs	Annual Debt Service Charge per EDU	Estimated Annual Commodity Charge	Est. Annual Water Storage Surcharge	Total Estimated Annual Cost per EDU
Rose-Clyde Trans. System	NYS Rte 414	Galen TL to Rose Hamlet	$653,400	$202,415	$450,985	$18,522	27	$686.00	$93.00	$25	$804
		Total	**$653,400**	**$202,691**	**$450,709**		**27**				

Figure XVI-5: Town of Rose Transmission Corridor Projects



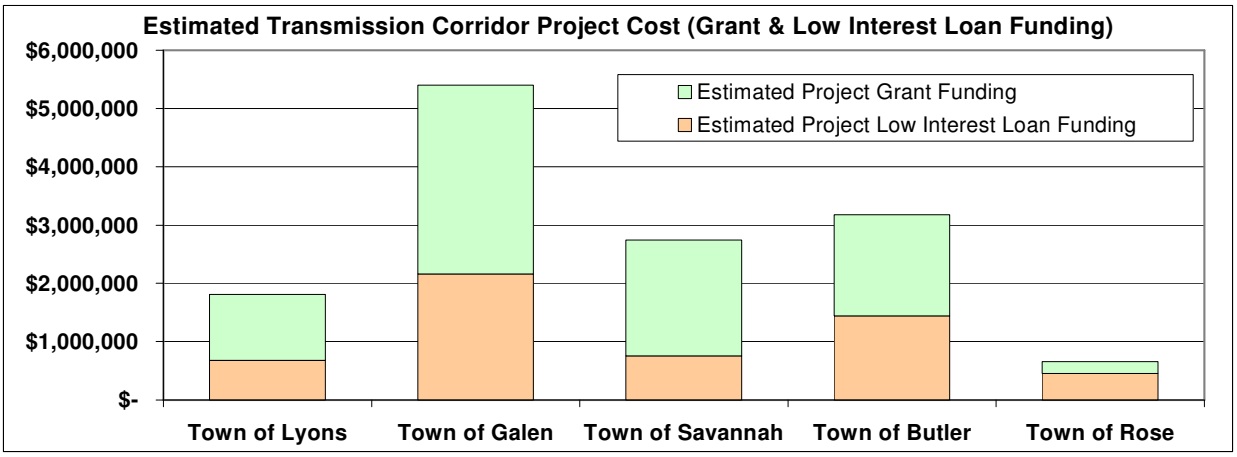
6. Summary of Transmission Corridor Projects

Overall the study area transmission corridor projects will require approximately $8,300,000.00 in grant and $5,500,000.00 in low interest loan funding. The following table and figure summarizes each town's required grant and low interest loan funding.

Table XVI-7 – Overall Grant and Low Interest Loan Funding for Transmission Corridor Projects

Community	Estimated Transmission Corridor Project Cost	Estimated Grant Funding Required		Estimated Low Interest Loan Funding Required	
		Amount	Percent	Amount	Percent
Town of Lyons	$ 1,810,600	$ 1,131,238	62%	$ 679,362	38%
Town of Galen	$ 5,396,000	$ 3,235,986	60%	$ 2,160,014	40%
Town of Savannah	$ 2,743,700	$ 1,987,335	72%	$ 756,365	28%
Town of Butler	$ 3,176,200	$ 1,732,023	55%	$ 1,444,177	45%
Town of Rose	$ 653,400	$ 202,415	31%	$ 450,985	69%
Overall	**$ 13,779,900**	**$ 8,288,997**	**60%**	**$ 5,490,903**	**40%**

Figure XVI-6 – Overall Grant and Low Interest Loan Funding for Transmission Corridor Projects



C. INTER-MUNICIPAL AGREEMENTS

Because transmission corridor projects will cross Town and Village boundaries, inter-municipal agreements (IMA) will be required between the participating municipalities prior to the water district formation process. These project specific inter-municipal agreements will outline the agreement on such items as:

- The municipality supplying water and the maximum daily volume allowance.
- The municipality receiving water.

- In cases of a joint water district, the project capital cost share percentage.
- How and whom will perform operation and maintenance, and how this expense will be shared.
- Share of capital cost for transmission corridor improvements made inside Village boundaries.

Generally, IMA's will be established after conceptual design, but prior to water district formation. We have provided an example IMA, located in Appendix H, between the Towns of Huron and Rose, and WCWSA for the construction of a joint water supply project benefitting both Towns and the surrounding region in the northeast quadrant of Wayne County.

A good example of an IMA that may be required eventually would be in the event the Town of Butler desires water district formation along the transmission corridor outlined in Section XV. In this event, an IMA will be required between Butler and Wolcott, and between Butler and Savannah to outline the terms of water supply. In addition, an agreement would also be required between Butler and WCWSA to outline the terms of operation and maintenance by WCWSA.

D. DISTRICT FORMATION

Implementation of the necessary regional transmission improvements will require the involvement of Wayne County, WCWSA, Wayne County Industrial Development Agency, multiple municipalities and the communities located in the study area. For the purpose of this study the capital costs associated with the transmission corridors are assumed to be shared among those dwelling units located along the corridors. There are several administrative techniques available to implement regional capital improvement programs.

In New York State, water districts are formed under Articles 12 and 12-a, of the New York Town Law and Article 5-a, of the New York County Law. The following discussion summarizes some of the basic procedures for establishing and expanding improvement districts, including water districts.

A water district can be formed at the county or town level. At the town level, establishment of an improvement district requires, in general: (i) a petition; or (ii) initial town board resolution; (iii) preparation and approval of maps and plans; (iv) a public hearing on notice; (v) final approving resolution; and (vi) approval of State Comptroller (in some instances). At the county level, it

requires in general: (i) appointment of a "county agency"; (ii) preparation and approval of maps and plans; (iii) report to County Board of Supervisors (or other legislative body); (iv) public hearing on notice; (v) approving resolution; and (vi) approval of State Comptroller (in some instances).

A water district can be established or expanded under Article 5 of the County Law. The County district may contain two or more municipalities and assess, levy and collect the cost of the facilities which serve the communities within each municipality. Prior to forming the district it must be determined: (i) whether all the property and property owners within the proposed district are benefited thereby, (ii) whether all of the property and property owners benefited are included within the limits of the proposed district, and (iii) whether it is in the public interest to establish the district. A county district must comply with the requirements of the New York State Department of Audit and Control.

XVII. IMPLEMENTATION AND RECOMMENDATIONS

A. IMPLEMENTATION PLAN

As this study is conceptual only, considerably more work is needed to develop design data that can lead to definitive system recommendations. Due to the multitude of factors that will determine the actual sequence in which individual transmission and distribution corridor projects are implemented throughout the study area, the development of a detailed or "project by project" phasing plan is not practical. Therefore, the recommendations summarized in this section were developed under the fundamental premise that construction of transmission corridor projects is dependent on the availability of portions of other water transmission systems being in place first. The timing for completing water transmission corridor projects throughout the entire study area is not possible to predict, but it is likely that a phased solution characterized by a "project-by-project-by-town" basis will be the approach taken.

Well before any decisions are made about specific transmission corridors or project timing, each community must be involved in the planning process if the public support needed for eventual implementation and success of a transmission plan is to be achieved. There are a number of stakeholders that must be provided the opportunity to participate in the planning and decision-making. These include property owners, community associations, environmental groups, elected officials, local, state, and federal agencies, and a host of others whose input and participation in planning and decisions will greatly increase the likelihood of a sound and supportable plan.

B. GUIDELINES AND RECOMMENDATIONS

Although the development of a detailed "project by project" phasing plan is not practical, the following guidelines and regional considerations are evident:

1. Although the timing of transmission corridor improvements will be dependent on the variety of factors referenced above, pipe sizing in individual water districts and/or improvements areas within the study area should be in accordance with the regional approached described herein. For example, if the Town of Galen wishes to serve residents along NYS Rte 414 between Clyde and Kelsey Road, the sizing of this water main should be selected so as to also supply water to the Town of Rose in the future, in accordance with the plan.

2. For the reasons outlined throughout this study, and in the interest of regional planning and consolidation, the Village of Lyons should strongly consider decommissioning its water treatment

facility and purchasing all of its water from the Wayne County Water and Sewer Authority. The following factors are instrumental in this regard:

- Wayne County began the implementation of a regional approach with the construction of the 12-inch transmission main on NYS Route 31 to the Village of Lyons. The Village can now utilize this transmission main at little or no cost. The Route 31 pump station, built several years ago by the WCWSA at no cost to the Village, can also be used by the Village by making minimal upgrades.
- Consolidating water production with other capable suppliers will help stabilize water rates in the region due to the economy of scale that is inherent in public water supply.
- The independent Village Water Rate Study described in Section X determined that the Village water rates would be lower in all options studied under a "purchase only" scenario.

3. The Village of Lyons, Village of Clyde, and Town of Savannah should continue efforts to upgrade current distribution system deficiencies as identified in report Sections VII and X.

4. The Town of Rose should consider increasing its water supply capacity and/or the purchase of water from adjacent water suppliers. With this increased capacity additional water districts could be formed in Rose, which contains a high density of EDUs located along distribution corridors.

5. Since the communities of the Village of Lyons, Clyde, Rose, and Savannah currently have water departments, it is likely that these municipalities will continue to distribute water to their residents. These municipalities should evaluate potential opportunities for reduced costs or increased efficiencies that may result from sharing water department staff, equipment, or services such as meter reading.

6. In the Towns of Lyons, Galen, and Butler, which currently do not have water departments, it is recommended that these communities enter into an agreement with WCWSA to operate and maintain their water distribution systems, rather than creating individual-redundant water departments for each Town. Generally, but with a few exceptions, WCWSA rates are lower than the water rates in Towns and Villages throughout Wayne County, as demonstrated in section XIV of this report. Consolidating water distribution under WCWSA will help stabilize water rates in the region due to the economy of scale that is inherent in public water distribution.

7. As transmission corridor projects are considered, the method of financing an eventual water tank should also be considered.

8. It is recommended that a semi-annual stakeholder meeting be conducted by the Towns and Villages located in the study area. This semi-annual meeting should be chaired by WCWSA and also include study area water suppliers and the Wayne County Industrial Development Agency. The purpose of the semi-annual meetings would be to review progress, assess changing priorities, and facilitate implementation of applicable components of the plan.

9. It is recommended that WCWSA be involved in all SEQR processes dealing with municipal water transmission and distribution projects in the study area. This involvement should be limited to being an interested agency during SEQR coordinated reviews.

APPENDIX A

LYONS CONSTRUCTION COST ESTIMATES

Area No:	**L-1-A2**
Located in Town of:	**Lyons**
Located On:	**Debusse, Emmel, Lembke, & Fairville**
Located Between:	**Maple Street Road to Fairville Station Rd**
Total Number of Units:	**26**

BASE BID ITEMS:					
Item No.	**Item Description:**	**Quantity**	**Unit**	**Unit Price**	**Total**
I-1	12" SDR-18 PVC Watermain	17,600	LF	$ 26.00	$ 457,600.00
I-2	12" Gate Valve & Valve Box	22	EA	$ 1,700.00	$ 37,400.00
I-3	8" SDR-18 PVC Watermain	1,600	LF	$ 18.00	$ 28,800.00
I-4	8" Gate Valve and Box	2	EA	$ 900.00	$ 1,800.00
I-5	Hydrant Assembly	32	EA	$ 2,800.00	$ 89,600.00
I-6	2" Blow-Off Assembly	-	EA	$ 700.00	$ -
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing	1	LS	$ 2,000.00	$ 2,000.00
I-10	Sampling Manhole, Complete	1	LS	$ 5,000.00	$ 5,000.00
I-11	Shoulder Replacement (Crusher Run)	-	SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	100	CY	$ 20.00	$ 2,000.00
I-13	Asphalt Pavement Replacement	340	LF	$ 30.00	$ 10,200.00
I-14	Gravel/Stone Pavement Replacement	260	LF	$ 6.00	$ 1,560.00
I-15	Non-Traffic Restoration	18,600	LF	$ 2.00	$ 37,200.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 13,000.00	$ 13,000.00
I-17	Field Office	4	MOS.	$ 750.00	$ 3,000.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	24	EA	$ 250.00	$ 6,000.00
I-19	Road Boring	-	LS	$ 20,000.00	$ -
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
			SUBTOTAL BASE BID ITEMS		**$ 696,660.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	77	CY	$ 25.00	$ 1,925.00
IC-2	Rock Excavation	32	CY	$ 150.00	$ 4,800.00
IC-3	#2 Crusher Run Stone AOBE	55	CY	$ 20.00	$ 1,100.00
IC-4	1" Tapping Saddle & Corporation for Water Service	26	EA	$ 200.00	$ 5,200.00
IC-5	1" Curb Stop & Box	26	EA	$ 200.00	$ 5,200.00
IC-6	1" Copper Water Service Tubing	1,300	LF	$ 11.00	$ 14,300.00
IC-7	Water Service Restoration	26	EA	$ 150.00	$ 3,900.00
			SUBTOTAL CONDITIONAL BID ITEMS		**$ 36,425.00**
			TOTAL BASE & CONDITIONAL BID ITEMS		**$ 733,085.00**

Area No: L-3-A2
Located in Town of: Lyons
Located On: Cross Country
Located Between: Maple to Canal
Total Number of Units: 0

BASE BID ITEMS:

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
I-1	12" SDR-18 PVC Watermain	1,000	LF	$ 26.00	$ 26,000.00
I-2	12" Gate Valve & Valve Box	1	EA	$ 1,700.00	$ 1,700.00
I-3	8" SDR-18 PVC Watermain		LF	$ 18.00	$ -
I-4	8" Gate Valve and Box	-	EA	$ 900.00	$ -
I-5	Hydrant Assembly	2	EA	$ 2,800.00	$ 5,600.00
I-6	2" Blow-Off Assembly	-	EA	$ 700.00	$ -
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing	-	LS	$ 2,000.00	$ -
I-10	Sampling Manhole, Complete	-	LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)	-	SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	-	CY	$ 20.00	$ -
I-13	Asphalt Pavement Replacement	-	LF	$ 30.00	$ -
I-14	Gravel/Stone Pavement Replacement	-	LF	$ 6.00	$ -
I-15	Non-Traffic Restoration	1,000	LF	$ 2.00	$ 2,000.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 750.00	$ 750.00
I-17	Field Office	-	MOS.	$ 750.00	$ -
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	1	EA	$ 250.00	$ 250.00
I-19	Road Boring		LS	$ 20,000.00	$ -
I-20	RR Boring		LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring		LS	$ 30,000.00	$ -
I-22	Pump Station		LS	$ -	$ -
				SUBTOTAL BASE BID ITEMS	**$ 37,800.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	4	CY	$ 25.00	$ 100.00
IC-2	Rock Excavation	2	CY	$ 150.00	$ 300.00
IC-3	#2 Crusher Run Stone AOBE	3	CY	$ 20.00	$ 60.00
IC-4	1" Tapping Saddle & Corporation for Water Service	-	EA	$ 200.00	$ -
IC-5	1" Curb Stop & Box	-	EA	$ 200.00	$ -
IC-6	1" Copper Water Service Tubing	-	LF	$ 11.00	$ -
IC-7	Water Service Restoration	-	EA	$ 150.00	$ -
				SUBTOTAL CONDITIONAL BID ITEMS	**$ 460.00**
				TOTAL BASE & CONDITIONAL BID ITEMS	**$ 38,260.00**

Area No: L-6-A2
Located in Town of: Lyons
Located On: Pilgrimport Rd
Located Between: Warncke to N. Canal St Extension
Total Number of Units: 5

BASE BID ITEMS:					
Item No.	**Item Description:**	**Quantity**	**Unit**	**Unit Price**	**Total**
I-1	12" SDR-18 PVC Watermain	3,600	LF	$ 26.00	$ 93,600.00
I-2	12" Gate Valve & Valve Box	5	EA	$ 1,700.00	$ 8,500.00
I-3	8" SDR-18 PVC Watermain	-	LF	$ 18.00	$ -
I-4	8" Gate Valve and Box	-	EA	$ 900.00	$ -
I-5	Hydrant Assembly	6	EA	$ 2,800.00	$ 16,800.00
I-6	2" Blow-Off Assembly	-	EA	$ 700.00	$ -
I-7	Connect to Existing Watermain	-	EA	$ 1,500.00	$ -
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing	-	LS	$ 2,000.00	$ -
I-10	Sampling Manhole, Complete	-	LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)	-	SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	25	CY	$ 20.00	$ 500.00
I-13	Asphalt Pavement Replacement	80	LF	$ 30.00	$ 2,400.00
I-14	Gravel/Stone Pavement Replacement	20	LF	$ 6.00	$ 120.00
I-15	Non-Traffic Restoration	3,500	LF	$ 2.00	$ 7,000.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 2,600.00	$ 2,600.00
I-17	Field Office	1	MOS.	$ 750.00	$ 750.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	5	EA	$ 250.00	$ 1,250.00
I-19	Road Boring	-	LS	$ 20,000.00	$ -
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
				SUBTOTAL BASE BID ITEMS	**$ 133,520.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	14	CY	$ 25.00	$ 350.00
IC-2	Rock Excavation	6	CY	$ 150.00	$ 900.00
IC-3	#2 Crusher Run Stone AOBE	10	CY	$ 20.00	$ 200.00
IC-4	1" Tapping Saddle & Corporation for Water Service	5	EA	$ 200.00	$ 1,000.00
IC-5	1" Curb Stop & Box	5	EA	$ 200.00	$ 1,000.00
IC-6	1" Copper Water Service Tubing	250	LF	$ 11.00	$ 2,750.00
IC-7	Water Service Restoration	5	EA	$ 150.00	$ 750.00
				SUBTOTAL CONDITIONAL BID ITEMS	**$ 6,950.00**
				TOTAL BASE & CONDITIONAL BID ITEMS	**$ 140,470.00**

Area No:	**L-7-A2**
Located in Town of:	**Lyons**
Located On:	**Pilgrimport and Bishop Rd**
Located Between:	**Travell Knapps to Warncke Rd**
Total Number of Units:	**12**

BASE BID ITEMS:					
Item No.	**Item Description:**	**Quantity**	**Unit**	**Unit Price**	**Total**
I-1	12" SDR-18 PVC Watermain	3,125	LF	$ 26.00	$ 81,250.00
I-2	12" Gate Valve & Valve Box	4	EA	$ 1,700.00	$ 6,800.00
I-3	8" SDR-18 PVC Watermain	-	LF	$ 18.00	$ -
I-4	8" Gate Valve and Box	-	EA	$ 900.00	$ -
I-5	Hydrant Assembly	5	EA	$ 2,800.00	$ 14,000.00
I-6	2" Blow-Off Assembly	1	EA	$ 700.00	$ 700.00
I-7	Connect to Existing Watermain	-	EA	$ 1,500.00	$ -
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing	-	LS	$ 2,000.00	$ -
I-10	Sampling Manhole, Complete	-	LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)	-	SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	25	CY	$ 20.00	$ 500.00
I-13	Asphalt Pavement Replacement	140	LF	$ 30.00	$ 4,200.00
I-14	Gravel/Stone Pavement Replacement	100	LF	$ 6.00	$ 600.00
I-15	Non-Traffic Restoration	2,885	LF	$ 2.00	$ 5,770.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 2,300.00	$ 2,300.00
I-17	Field Office	1	MOS.	$ 750.00	$ 750.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	4	EA	$ 250.00	$ 1,000.00
I-19	Road Boring	-	LS	$ 20,000.00	$ -
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
				SUBTOTAL BASE BID ITEMS	**$ 117,870.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	13	CY	$ 25.00	$ 325.00
IC-2	Rock Excavation	5	CY	$ 150.00	$ 750.00
IC-3	#2 Crusher Run Stone AOBE	9	CY	$ 20.00	$ 180.00
IC-4	1" Tapping Saddle & Corporation for Water Service	12	EA	$ 200.00	$ 2,400.00
IC-5	1" Curb Stop & Box	12	EA	$ 200.00	$ 2,400.00
IC-6	1" Copper Water Service Tubing	600	LF	$ 11.00	$ 6,600.00
IC-7	Water Service Restoration	12	EA	$ 150.00	$ 1,800.00
				SUBTOTAL CONDITIONAL BID ITEMS	**$ 14,455.00**
				TOTAL BASE & CONDITIONAL BID ITEMS	**$ 132,325.00**

Area No:	**L-8-A2**
Located in Town of:	**Lyons**
Located On:	**Travell Knapps Corner Rd**
Located Between:	**Pilgrimport Rd to Galen TL**
Total Number of Units:	**4**

BASE BID ITEMS:					
Item No.	**Item Description:**	**Quantity**	**Unit**	**Unit Price**	**Total**
I-1	12" SDR-18 PVC Watermain	1,935	LF	$ 26.00	$ 50,310.00
I-2	12" Gate Valve & Valve Box	2	EA	$ 1,700.00	$ 3,400.00
I-3	8" SDR-18 PVC Watermain	-	LF	$ 18.00	$ -
I-4	8" Gate Valve and Box	-	EA	$ 900.00	$ -
I-5	Hydrant Assembly	3	EA	$ 2,800.00	$ 8,400.00
I-6	2" Blow-Off Assembly	-	EA	$ 700.00	$ -
I-7	Connect to Existing Watermain	-	EA	$ 1,500.00	$ -
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing	-	LS	$ 2,000.00	$ -
I-10	Sampling Manhole, Complete	-	LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)	-	SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	-	CY	$ 20.00	$ -
I-13	Asphalt Pavement Replacement	60	LF	$ 30.00	$ 1,800.00
I-14	Gravel/Stone Pavement Replacement	5	LF	$ 6.00	$ 30.00
I-15	Non-Traffic Restoration	1,870	LF	$ 2.00	$ 3,740.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 1,300.00	$ 1,300.00
I-17	Field Office	-	MOS.	$ 750.00	$ -
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	2	EA	$ 250.00	$ 500.00
I-19	Road Boring	-	LS	$ 20,000.00	$ -
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
			SUBTOTAL BASE BID ITEMS		**$ 69,480.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	8	CY	$ 25.00	$ 200.00
IC-2	Rock Excavation	3	CY	$ 150.00	$ 450.00
IC-3	#2 Crusher Run Stone AOBE	6	CY	$ 20.00	$ 120.00
IC-4	1" Tapping Saddle & Corporation for Water Service	4	EA	$ 200.00	$ 800.00
IC-5	1" Curb Stop & Box	4	EA	$ 200.00	$ 800.00
IC-6	1" Copper Water Service Tubing	200	LF	$ 11.00	$ 2,200.00
IC-7	Water Service Restoration	4	EA	$ 150.00	$ 600.00
			SUBTOTAL CONDITIONAL BID ITEMS		**$ 5,170.00**
			TOTAL BASE & CONDITIONAL BID ITEMS		**$ 74,650.00**

Area No: L-10-A1
Located in Town of: Lyons
Located On: Rte 31
Located Between: Clyde VL to Galen TL
Total Number of Units: 10

BASE BID ITEMS:

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
I-1	12" SDR-18 PVC Watermain	2,350	LF	$ 26.00	$ 61,100.00
I-2	12" Gate Valve & Valve Box	3	EA	$ 1,700.00	$ 5,100.00
I-3	8" SDR-18 PVC Watermain		LF	$ 18.00	$ -
I-4	8" Gate Valve and Box	-	EA	$ 900.00	$ -
I-5	Hydrant Assembly	4	EA	$ 2,800.00	$ 11,200.00
I-6	2" Blow-Off Assembly	-	EA	$ 700.00	$ -
I-7	Connect to Existing Watermain	-	EA	$ 1,500.00	$ -
I-8	Meter/PRV Vault	1	LS	$ 35,000.00	$ 35,000.00
I-9	Creek Crossing	-	LS	$ 2,000.00	$ -
I-10	Sampling Manhole, Complete	-	LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)	-	SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	-	CY	$ 20.00	$ -
I-13	Asphalt Pavement Replacement	400	LF	$ 30.00	$ 12,000.00
I-14	Gravel/Stone Pavement Replacement	120	LF	$ 6.00	$ 720.00
I-15	Non-Traffic Restoration	1,830	LF	$ 2.00	$ 3,660.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 3,100.00	$ 3,100.00
I-17	Field Office	-	MOS.	$ 750.00	$ -
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	3	EA	$ 250.00	$ 750.00
I-19	Road Boring	1	LS	$ 20,000.00	$ 20,000.00
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
				SUBTOTAL BASE BID ITEMS	**$ 152,630.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	9	CY	$ 25.00	$ 225.00
IC-2	Rock Excavation	4	CY	$ 150.00	$ 600.00
IC-3	#2 Crusher Run Stone AOBE	7	CY	$ 20.00	$ 140.00
IC-4	1" Tapping Saddle & Corporation for Water Service	10	EA	$ 200.00	$ 2,000.00
IC-5	1" Curb Stop & Box	10	EA	$ 200.00	$ 2,000.00
IC-6	1" Copper Water Service Tubing	500	LF	$ 11.00	$ 5,500.00
IC-7	Water Service Restoration	10	EA	$ 150.00	$ 1,500.00
				SUBTOTAL CONDITIONAL BID ITEMS	**$ 11,965.00**
				VILLAGE OF LYONS IMPROVEMENTS	**$ 57,743.90**
				TOTAL BASE & CONDITIONAL BID ITEMS	**$ 222,338.90**

Area No:	**L-1 Dist.**
Located in Town of:	**Lyons**
Located On:	**Maple Street & Bastian Rd**
Located Between:	**Village and Debusse Rd**
Total Number of Units:	**21**

BASE BID ITEMS:					
Item No.	**Item Description:**	**Quantity**	**Unit**	**Unit Price**	**Total**
I-1	12" SDR-18 PVC Watermain	-	LF	$ 26.00	$ -
I-2	12" Gate Valve & Valve Box	-	EA	$ 1,700.00	$ -
I-3	8" SDR-18 PVC Watermain	12,700	LF	$ 18.00	$ 228,600.00
I-4	8" Gate Valve and Box	16	EA	$ 900.00	$ 14,400.00
I-5	Hydrant Assembly	21	EA	$ 2,800.00	$ 58,800.00
I-6	2" Blow-Off Assembly	-	EA	$ 700.00	$ -
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing	-	LS	$ 2,000.00	$ -
I-10	Sampling Manhole, Complete	-	LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)	-	SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	50	CY	$ 20.00	$ 1,000.00
I-13	Asphalt Pavement Replacement	380	LF	$ 30.00	$ 11,400.00
I-14	Gravel/Stone Pavement Replacement	380	LF	$ 6.00	$ 2,280.00
I-15	Non-Traffic Restoration	11,940	LF	$ 2.00	$ 23,880.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 9,100.00	$ 9,100.00
I-17	Field Office	3	MOS.	$ 750.00	$ 2,250.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	16	EA	$ 250.00	$ 4,000.00
I-19	Road Boring	-	LS	$ 20,000.00	$ -
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
			SUBTOTAL BASE BID ITEMS		**$ 357,210.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	51	CY	$ 25.00	$ 1,275.00
IC-2	Rock Excavation	21	CY	$ 150.00	$ 3,150.00
IC-3	#2 Crusher Run Stone AOBE	36	CY	$ 20.00	$ 720.00
IC-4	1" Tapping Saddle & Corporation for Water Service	21	EA	$ 200.00	$ 4,200.00
IC-5	1" Curb Stop & Box	21	EA	$ 200.00	$ 4,200.00
IC-6	1" Copper Water Service Tubing	1,050	LF	$ 11.00	$ 11,550.00
IC-7	Water Service Restoration	21	EA	$ 150.00	$ 3,150.00
			SUBTOTAL CONDITIONAL BID ITEMS		**$ 28,245.00**
			TOTAL BASE & CONDITIONAL BID ITEMS		**$ 385,455.00**

Area No: L-2 Dist.
Located in Town of: Lyons
Located On: Sohn Alloway Road & Rte 14
Located Between: Village to Westphal Parkway
Total Number of Units: 51

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
BASE BID ITEMS:					
I-1	12" SDR-18 PVC Watermain	-	LF	$ 26.00	$ -
I-2	12" Gate Valve & Valve Box	-	EA	$ 1,700.00	$ -
I-3	8" SDR-18 PVC Watermain	22,100	LF	$ 18.00	$ 397,800.00
I-4	8" Gate Valve and Box	28	EA	$ 900.00	$ 25,200.00
I-5	Hydrant Assembly	37	EA	$ 2,800.00	$ 103,600.00
I-6	2" Blow-Off Assembly	1	EA	$ 700.00	$ 700.00
I-7	Connect to Existing Watermain	2	EA	$ 1,500.00	$ 3,000.00
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing	2	LS	$ 2,000.00	$ 4,000.00
I-10	Sampling Manhole, Complete	2	LS	$ 5,000.00	$ 10,000.00
I-11	Shoulder Replacement (Crusher Run)	400	SF	$ 1.75	$ 700.00
I-12	Granular Backfill Within Road Limits	100	CY	$ 20.00	$ 2,000.00
I-13	Asphalt Pavement Replacement	580	LF	$ 30.00	$ 17,400.00
I-14	Gravel/Stone Pavement Replacement	600	LF	$ 6.00	$ 3,600.00
I-15	Non-Traffic Restoration	20,920	LF	$ 2.00	$ 41,840.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 13,000.00	$ 13,000.00
I-17	Field Office	4	MOS.	$ 750.00	$ 3,000.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	28	EA	$ 250.00	$ 7,000.00
I-19	Road Boring	1	LS	$ 20,000.00	$ 20,000.00
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
				SUBTOTAL BASE BID ITEMS	**$ 652,840.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	88	CY	$ 25.00	$ 2,200.00
IC-2	Rock Excavation	37	CY	$ 150.00	$ 5,550.00
IC-3	#2 Crusher Run Stone AOBE	63	CY	$ 20.00	$ 1,260.00
IC-4	1" Tapping Saddle & Corporation for Water Service	51	EA	$ 200.00	$ 10,200.00
IC-5	1" Curb Stop & Box	51	EA	$ 200.00	$ 10,200.00
IC-6	1" Copper Water Service Tubing	2,550	LF	$ 11.00	$ 28,050.00
IC-7	Water Service Restoration	51	EA	$ 150.00	$ 7,650.00
				SUBTOTAL CONDITIONAL BID ITEMS	**$ 65,110.00**
				TOTAL BASE & CONDITIONAL BID ITEMS	**$ 717,950.00**

Area No: L-3 Dist.
Located in Town of: Lyons
Located On: Pilgrimport Rd
Located Between: Travell Knapps to North
Total Number of Units: 31

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
BASE BID ITEMS:					
I-1	12" SDR-18 PVC Watermain	-	LF	$ 26.00	$ -
I-2	12" Gate Valve & Valve Box	-	EA	$ 1,700.00	$ -
I-3	8" SDR-18 PVC Watermain	6,345	LF	$ 18.00	$ 114,210.00
I-4	8" Gate Valve and Box	8	EA	$ 900.00	$ 7,200.00
I-5	Hydrant Assembly	11	EA	$ 2,800.00	$ 30,800.00
I-6	2" Blow-Off Assembly	1	EA	$ 700.00	$ 700.00
I-7	Connect to Existing Watermain	-	EA	$ 1,500.00	$ -
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing	-	LS	$ 2,000.00	$ -
I-10	Sampling Manhole, Complete	-	LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)	-	SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	25	CY	$ 20.00	$ 500.00
I-13	Asphalt Pavement Replacement	80	LF	$ 30.00	$ 2,400.00
I-14	Gravel/Stone Pavement Replacement	60	LF	$ 6.00	$ 360.00
I-15	Non-Traffic Restoration	6,205	LF	$ 2.00	$ 12,410.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 3,400.00	$ 3,400.00
I-17	Field Office	1	MOS.	$ 750.00	$ 750.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	8	EA	$ 250.00	$ 2,000.00
I-19	Road Boring	-	LS	$ 20,000.00	$ -
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
			SUBTOTAL BASE BID ITEMS		**$ 174,730.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	25	CY	$ 25.00	$ 625.00
IC-2	Rock Excavation	11	CY	$ 150.00	$ 1,650.00
IC-3	#2 Crusher Run Stone AOBE	18	CY	$ 20.00	$ 360.00
IC-4	1" Tapping Saddle & Corporation for Water Service	5	EA	$ 200.00	$ 1,000.00
IC-5	1" Curb Stop & Box	5	EA	$ 200.00	$ 1,000.00
IC-6	1" Copper Water Service Tubing	250	LF	$ 11.00	$ 2,750.00
IC-7	Water Service Restoration	31	EA	$ 150.00	$ 4,650.00
			SUBTOTAL CONDITIONAL BID ITEMS		**$ 12,035.00**
			TOTAL BASE & CONDITIONAL BID ITEMS		**$ 186,765.00**

Area No:	**L-4 dist**
Located in Town of:	**Lyons**
Located On:	**Maple Street**
Located Between:	**Debusse Rd to Lyons VL**
Total Number of Units:	**13**

BASE BID ITEMS:					
Item No.	**Item Description:**	**Quantity**	**Unit**	**Unit Price**	**Total**
I-1	12" SDR-18 PVC Watermain	2,550	LF	$ 26.00	$ 66,300.00
I-2	12" Gate Valve & Valve Box	3	EA	$ 1,700.00	$ 5,100.00
I-3	8" SDR-18 PVC Watermain		LF	$ 18.00	$ -
I-4	8" Gate Valve and Box	-	EA	$ 900.00	$ -
I-5	Hydrant Assembly	4	EA	$ 2,800.00	$ 11,200.00
I-6	2" Blow-Off Assembly	-	EA	$ 700.00	$ -
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	1	LS	$ 35,000.00	$ 35,000.00
I-9	Creek Crossing	-	LS	$ 2,000.00	$ -
I-10	Sampling Manhole, Complete	-	LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)	-	SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	50	CY	$ 20.00	$ 1,000.00
I-13	Asphalt Pavement Replacement	200	LF	$ 30.00	$ 6,000.00
I-14	Gravel/Stone Pavement Replacement	60	LF	$ 6.00	$ 360.00
I-15	Non-Traffic Restoration	2,290	LF	$ 2.00	$ 4,580.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 2,800.00	$ 2,800.00
I-17	Field Office	1	MOS.	$ 750.00	$ 750.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	3	EA	$ 250.00	$ 750.00
I-19	Road Boring	-	LS	$ 20,000.00	$ -
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
				SUBTOTAL BASE BID ITEMS	**$ 135,340.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	10	CY	$ 25.00	$ 250.00
IC-2	Rock Excavation	4	CY	$ 150.00	$ 600.00
IC-3	#2 Crusher Run Stone AOBE	7	CY	$ 20.00	$ 140.00
IC-4	1" Tapping Saddle & Corporation for Water Service	13	EA	$ 200.00	$ 2,600.00
IC-5	1" Curb Stop & Box	13	EA	$ 200.00	$ 2,600.00
IC-6	1" Copper Water Service Tubing	650	LF	$ 11.00	$ 7,150.00
IC-7	Water Service Restoration	13	EA	$ 150.00	$ 1,950.00
				SUBTOTAL CONDITIONAL BID ITEMS	**$ 15,290.00**
				TOTAL BASE & CONDITIONAL BID ITEMS	**$ 150,630.00**

APPENDIX B

GALEN CONSTRUCTION COST ESTIMATES

Area No: G-2-A2
Located in Town of: Galen
Located On: Travell Knapps Corners Rd
Located Between: Gannett Rd to High Street
Total Number of Units: 14

BASE BID ITEMS:

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
I-1	12" SDR-18 PVC Watermain	3,900	LF	$ 26.00	$ 101,400.00
I-2	12" Gate Valve & Valve Box	-	EA	$ 1,700.00	$ -
I-3	8" SDR-18 PVC Watermain		LF	$ 18.00	$ -
I-4	8" Gate Valve and Box	4	EA	$ 900.00	$ 3,600.00
I-5	Hydrant Assembly	7	EA	$ 2,800.00	$ 19,600.00
I-6	2" Blow-Off Assembly	-	EA	$ 700.00	$ -
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing	1	LS	$ 2,000.00	$ 2,000.00
I-10	Sampling Manhole, Complete	1	LS	$ 5,000.00	$ 5,000.00
I-11	Shoulder Replacement (Crusher Run)	0	SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	50	CY	$ 20.00	$ 1,000.00
I-13	Asphalt Pavement Replacement	20	TONS	$ 130.00	$ 2,600.00
I-14	Gravel/Stone Pavement Replacement	250	SF	$ 1.00	$ 250.00
I-15	Non-Traffic Restoration	4,400	LF	$ 2.00	$ 8,800.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 3,000.00	$ 3,000.00
I-17	Field Office	1.50	MOS.	$ 750.00	$ 1,125.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	5	EA	$ 250.00	$ 1,250.00
I-19	Road Boring	0	LS	$ 20,000.00	$ -
I-20	RR Boring	0	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	0	LS	$ 30,000.00	$ -
I-22	Pump Station		LS	$ -	$ -
				SUBTOTAL BASE BID ITEMS	**$ 151,125.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	15	CY	$ 25.00	$ 375.00
IC-2	Rock Excavation	5	CY	$ 150.00	$ 750.00
IC-3	#2 Crusher Run Stone AOBE	10	CY	$ 20.00	$ 200.00
IC-4	1" Tapping Saddle & Corporation for Water Service	7	EA	$ 200.00	$ 1,400.00
IC-5	1" Curb Stop & Box	7	EA	$ 200.00	$ 1,400.00
IC-6	1" Copper Water Service Tubing	350	LF	$ 11.00	$ 3,850.00
IC-7	Water Service Restoration	7	EA	$ 150.00	$ 1,050.00
				SUBTOTAL CONDITIONAL BID ITEMS	**$ 9,025.00**
				TOTAL BASE & CONDITIONAL BID ITEMS	**$ 160,150.00**

Area No: G-3-A2
Located in Town of: Galen
Located On: Travell Knapps Corners Rd
Located Between: High Street to Kelsey Rd
Total Number of Units: 14

BASE BID ITEMS:					
Item No.	**Item Description:**	**Quantity**	**Unit**	**Unit Price**	**Total**
I-1	12" SDR-18 PVC Watermain	5,000	LF	$ 26.00	$ 130,000.00
I-2	12" Gate Valve & Valve Box	-	EA	$ 1,700.00	$ -
I-3	8" SDR-18 PVC Watermain	-	LF	$ 18.00	$ -
I-4	8" Gate Valve and Box	5	EA	$ 900.00	$ 4,500.00
I-5	Hydrant Assembly	8	EA	$ 2,800.00	$ 22,400.00
I-6	2" Blow-Off Assembly		EA	$ 700.00	$ -
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing	1	LS	$ 2,000.00	$ 2,000.00
I-10	Sampling Manhole, Complete	1	LS	$ 5,000.00	$ 5,000.00
I-11	Shoulder Replacement (Crusher Run)	-	SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	50	CY	$ 20.00	$ 1,000.00
I-13	Asphalt Pavement Replacement	20	TONS	$ 130.00	$ 2,600.00
I-14	Gravel/Stone Pavement Replacement	250	SF	$ 1.00	$ 250.00
I-15	Non-Traffic Restoration	4,300	LF	$ 2.00	$ 8,600.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 3,600.00	$ 3,600.00
I-17	Field Office	1.50	MOS.	$ 750.00	$ 1,125.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	4	EA	$ 250.00	$ 1,000.00
I-19	Road Boring		LS	$ 20,000.00	$ -
I-20	RR Boring		LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring		LS	$ 30,000.00	$ -
I-22	Pump Station		LS	$ -	$ -
				SUBTOTAL BASE BID ITEMS	**$ 183,575.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	15	CY	$ 25.00	$ 375.00
IC-2	Rock Excavation	5	CY	$ 150.00	$ 750.00
IC-3	#2 Crusher Run Stone AOBE	10	CY	$ 20.00	$ 200.00
IC-4	1" Tapping Saddle & Corporation for Water Service	7	EA	$ 200.00	$ 1,400.00
IC-5	1" Curb Stop & Box	7	EA	$ 200.00	$ 1,400.00
IC-6	1" Copper Water Service Tubing	350	LF	$ 11.00	$ 3,850.00
IC-7	Water Service Restoration	7	EA	$ 150.00	$ 1,050.00
				SUBTOTAL CONDITIONAL BID ITEMS	**$ 9,025.00**
				TOTAL BASE & CONDITIONAL BID ITEMS	**$ 192,600.00**

Area No: G-4-A2
Located in Town of: Galen
Located On: Kelsy Road
Located Between: Lake Crnr-Rose Valley Rd to NYS 414
Total Number of Units: 13

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
BASE BID ITEMS:					
I-1	12" SDR-18 PVC Watermain	11,700	LF	$ 26.00	$ 304,200.00
I-2	12" Gate Valve & Valve Box	19	EA	$ 1,700.00	$ 32,300.00
I-3	8" SDR-18 PVC Watermain	-	LF	$ 18.00	$ -
I-4	8" Gate Valve and Box	-	EA	$ 900.00	$ -
I-5	Hydrant Assembly	30	EA	$ 2,800.00	$ 84,000.00
I-6	2" Blow-Off Assembly	-	EA	$ 700.00	$ -
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing	1	LS	$ 2,000.00	$ 2,000.00
I-10	Sampling Manhole, Complete	-	LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)	-	SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	100	CY	$ 20.00	$ 2,000.00
I-13	Asphalt Pavement Replacement	50	TONS	$ 130.00	$ 6,500.00
I-14	Gravel/Stone Pavement Replacement	2,000	SF	$ 1.00	$ 2,000.00
I-15	Non-Traffic Restoration	17,900	LF	$ 2.00	$ 35,800.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 9,700.00	$ 9,700.00
I-17	Field Office	3.00	MOS.	$ 750.00	$ 2,250.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	14	EA	$ 250.00	$ 3,500.00
I-19	Road Boring		LS	$ 20,000.00	$ -
I-20	RR Boring		LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring		LS	$ 30,000.00	$ -
I-22	Pump Station		LS	$ -	$ -
				SUBTOTAL BASE BID ITEMS	**$ 485,750.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	50	CY	$ 25.00	$ 1,250.00
IC-2	Rock Excavation	20	CY	$ 150.00	$ 3,000.00
IC-3	#2 Crusher Run Stone AOBE	50	CY	$ 20.00	$ 1,000.00
IC-4	1" Tapping Saddle & Corporation for Water Service	35	EA	$ 200.00	$ 7,000.00
IC-5	1" Curb Stop & Box	35	EA	$ 200.00	$ 7,000.00
IC-6	1" Copper Water Service Tubing	1,500	LF	$ 11.00	$ 16,500.00
IC-7	Water Service Restoration	35	EA	$ 150.00	$ 5,250.00
				SUBTOTAL CONDITIONAL BID ITEMS	**$ 41,000.00**
				TOTAL BASE & CONDITIONAL BID ITEMS	**$ 526,750.00**

Area No: G-5-A2
Located in Town of: Galen
Located On: Kelsey
Located Between: Rte 414 to Shepard
Total Number of Units: 25

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
BASE BID ITEMS:					
I-1	12" SDR-18 PVC Watermain	7,900	LF	$ 26.00	$ 205,400.00
I-2	12" Gate Valve & Valve Box	10	EA	$ 1,700.00	$ 17,000.00
I-3	8" SDR-18 PVC Watermain	-	LF	$ 18.00	$ -
I-4	8" Gate Valve and Box	-	EA	$ 900.00	$ -
I-5	Hydrant Assembly	13	EA	$ 2,800.00	$ 36,400.00
I-6	2" Blow-Off Assembly	1	EA	$ 700.00	$ 700.00
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing	-	LS	$ 2,000.00	$ -
I-10	Sampling Manhole, Complete	-	LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)	-	SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	25	CY	$ 20.00	$ 500.00
I-13	Asphalt Pavement Replacement	140	LF	$ 30.00	$ 4,200.00
I-14	Gravel/Stone Pavement Replacement	120	LF	$ 6.00	$ 720.00
I-15	Non-Traffic Restoration	7,640	LF	$ 2.00	$ 15,280.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 5,900.00	$ 5,900.00
I-17	Field Office	2	MOS.	$ 750.00	$ 1,500.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	10	EA	$ 250.00	$ 2,500.00
I-19	Road Boring	-	LS	$ 20,000.00	$ -
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
			SUBTOTAL BASE BID ITEMS		**$ 291,600.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	32	CY	$ 25.00	$ 800.00
IC-2	Rock Excavation	13	CY	$ 150.00	$ 1,950.00
IC-3	#2 Crusher Run Stone AOBE	23	CY	$ 20.00	$ 460.00
IC-4	1" Tapping Saddle & Corporation for Water Service	25	EA	$ 200.00	$ 5,000.00
IC-5	1" Curb Stop & Box	25	EA	$ 200.00	$ 5,000.00
IC-6	1" Copper Water Service Tubing	1,250	LF	$ 11.00	$ 13,750.00
IC-7	Water Service Restoration	25	EA	$ 150.00	$ 3,750.00
	SUBTOTAL CONDITIONAL BID ITEMS				**$ 30,710.00**
	TOTAL BASE & CONDITIONAL BID ITEMS				**$ 322,310.00**

Area No: G-7-A3
Located in Town of: Galen
Located On: Rte 414
Located Between: Clyde VL to Rose TL
Total Number of Units: 45

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
BASE BID ITEMS:					
I-1	12" SDR-18 PVC Watermain	11,250	LF	$ 26.00	$ 292,500.00
I-2	12" Gate Valve & Valve Box	14	EA	$ 1,700.00	$ 23,800.00
I-3	8" SDR-18 PVC Watermain	-	LF	$ 18.00	$ -
I-4	8" Gate Valve and Box	-	EA	$ 900.00	$ -
I-5	Hydrant Assembly	19	EA	$ 2,800.00	$ 53,200.00
I-6	2" Blow-Off Assembly	1	EA	$ 700.00	$ 700.00
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	1	LS	$ 35,000.00	$ 35,000.00
I-9	Creek Crossing	-	LS	$ 2,000.00	$ -
I-10	Sampling Manhole, Complete	-	LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)	-	SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	-	CY	$ 20.00	$ -
I-13	Asphalt Pavement Replacement	450	LF	$ 30.00	$ 13,500.00
I-14	Gravel/Stone Pavement Replacement	450	LF	$ 6.00	$ 2,700.00
I-15	Non-Traffic Restoration	10,350	LF	$ 2.00	$ 20,700.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 9,500.00	$ 9,500.00
I-17	Field Office	2	MOS.	$ 750.00	$ 1,500.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	14	EA	$ 250.00	$ 3,500.00
I-19	Road Boring	1	LS	$ 20,000.00	$ 20,000.00
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
				SUBTOTAL BASE BID ITEMS	**$ 478,100.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	45	CY	$ 25.00	$ 1,125.00
IC-2	Rock Excavation	19	CY	$ 150.00	$ 2,850.00
IC-3	#2 Crusher Run Stone AOBE	32	CY	$ 20.00	$ 640.00
IC-4	1" Tapping Saddle & Corporation for Water Service	45	EA	$ 200.00	$ 9,000.00
IC-5	1" Curb Stop & Box	45	EA	$ 200.00	$ 9,000.00
IC-6	1" Copper Water Service Tubing	2,250	LF	$ 11.00	$ 24,750.00
IC-7	Water Service Restoration	45	EA	$ 150.00	$ 6,750.00
	SUBTOTAL CONDITIONAL BID ITEMS				**$ 54,115.00**
				VILLAGE OF CLYDE IMPROVEMENTS	**$ 127,746.88**
	TOTAL BASE & CONDITIONAL BID ITEMS				**$ 659,961.88**

Area No: G-8-A1
Located in Town of: Galen
Located On: Old Rte 31 / Storms
Located Between: Sunderville to Lock Berlin
Total Number of Units: 28

BASE BID ITEMS:					
Item No.	**Item Description:**	**Quantity**	**Unit**	**Unit Price**	**Total**
I-1	12" SDR-18 PVC Watermain	8,700	LF	$ 26.00	$ 226,200.00
I-2	12" Gate Valve & Valve Box	10	EA	$ 1,700.00	$ 17,000.00
I-3	8" SDR-18 PVC Watermain		LF	$ 18.00	$ -
I-4	8" Gate Valve and Box	1	EA	$ 900.00	$ 900.00
I-5	Hydrant Assembly	16	EA	$ 2,800.00	$ 44,800.00
I-6	2" Blow-Off Assembly		EA	$ 700.00	$ -
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	1	LS	$ 35,000.00	$ 35,000.00
I-9	Creek Crossing		LS	$ 2,000.00	$ -
I-10	Sampling Manhole, Complete		LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)		SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	120	CY	$ 20.00	$ 2,400.00
I-13	Asphalt Pavement Replacement	60	TONS	$ 130.00	$ 7,800.00
I-14	Gravel/Stone Pavement Replacement	1,500	SF	$ 1.00	$ 1,500.00
I-15	Non-Traffic Restoration	9,000	LF	$ 2.00	$ 18,000.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 7,700.00	$ 7,700.00
I-17	Field Office	1.50	MOS.	$ 750.00	$ 1,125.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	8	EA	$ 250.00	$ 2,000.00
I-19	Road Boring	1	LS	$ 20,000.00	$ 20,000.00
I-20	RR Boring		LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring		LS	$ 30,000.00	$ -
I-22	Pump Station		LS		$ -
				SUBTOTAL BASE BID ITEMS	**$ 385,925.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	20	CY	$ 25.00	$ 500.00
IC-2	Rock Excavation	10	CY	$ 150.00	$ 1,500.00
IC-3	#2 Crusher Run Stone AOBE	30	CY	$ 20.00	$ 600.00
IC-4	1" Tapping Saddle & Corporation for Water Service	31	EA	$ 200.00	$ 6,200.00
IC-5	1" Curb Stop & Box	31	EA	$ 200.00	$ 6,200.00
IC-6	1" Copper Water Service Tubing	1,250	LF	$ 11.00	$ 13,750.00
IC-7	Water Service Restoration	31	EA	$ 150.00	$ 4,650.00
				SUBTOTAL CONDITIONAL BID ITEMS	**$ 33,400.00**
				VILLAGE OF LYONS IMPROVEMENTS	**$ 161,682.93**
				TOTAL BASE & CONDITIONAL BID ITEMS	**$ 581,007.93**

Area No: G-9-A1
Located in Town of: Galen
Located On: Old Rte 31
Located Between: Lock Berlin to Gannett Rd
Total Number of Units: 29

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
BASE BID ITEMS:					
I-1	12" SDR-18 PVC Watermain	2,500	LF	$ 26.00	$ 65,000.00
I-2	12" Gate Valve & Valve Box	3	EA	$ 1,700.00	$ 5,100.00
I-3	8" SDR-18 PVC Watermain	-	LF	$ 18.00	$ -
I-4	8" Gate Valve and Box	-	EA	$ 900.00	$ -
I-5	Hydrant Assembly	4	EA	$ 2,800.00	$ 11,200.00
I-6	2" Blow-Off Assembly		EA	$ 700.00	$ -
I-7	Connect to Existing Watermain		EA	$ 1,500.00	$ -
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing	-	LS	$ 2,000.00	$ -
I-10	Sampling Manhole, Complete	-	LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)	-	SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	50	CY	$ 20.00	$ 1,000.00
I-13	Asphalt Pavement Replacement	30	TONS	$ 130.00	$ 3,900.00
I-14	Gravel/Stone Pavement Replacement	1,000	SF	$ 1.00	$ 1,000.00
I-15	Non-Traffic Restoration	2,000	LF	$ 2.00	$ 4,000.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 1,800.00	$ 1,800.00
I-17	Field Office	0.75	MOS.	$ 750.00	$ 562.50
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	2	EA	$ 250.00	$ 500.00
I-19	Road Boring		LS	$ 20,000.00	$ -
I-20	RR Boring		LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring		LS	$ 30,000.00	$ -
I-22	Pump Station		LS	$ -	$ -
				SUBTOTAL BASE BID ITEMS	**$ 94,062.50**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	50	CY	$ 25.00	$ 1,250.00
IC-2	Rock Excavation	20	CY	$ 150.00	$ 3,000.00
IC-3	#2 Crusher Run Stone AOBE	50	CY	$ 20.00	$ 1,000.00
IC-4	1" Tapping Saddle & Corporation for Water Service	31	EA	$ 200.00	$ 6,200.00
IC-5	1" Curb Stop & Box	31	EA	$ 200.00	$ 6,200.00
IC-6	1" Copper Water Service Tubing	1,550	LF	$ 11.00	$ 17,050.00
IC-7	Water Service Restoration	31	EA	$ 150.00	$ 4,650.00
				SUBTOTAL CONDITIONAL BID ITEMS	**$ 39,350.00**
				VILLAGE OF LYONS IMPROVEMENTS	**$ 167,457.32**
				TOTAL BASE & CONDITIONAL BID ITEMS	**$ 300,869.82**

Area No: G-10-A1
Located in Town of: Galen
Located On: Old Rte 31
Located Between: Gannett Rd to High Street
Total Number of Units: 5

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
BASE BID ITEMS:					
I-1	12" SDR-18 PVC Watermain	4,250	LF	$ 26.00	$ 110,500.00
I-2	12" Gate Valve & Valve Box	4	EA	$ 1,700.00	$ 6,800.00
I-3	8" SDR-18 PVC Watermain	-	LF	$ 18.00	$ -
I-4	8" Gate Valve and Box	-	EA	$ 900.00	$ -
I-5	Hydrant Assembly	7	EA	$ 2,800.00	$ 19,600.00
I-6	2" Blow-Off Assembly		EA	$ 700.00	$ -
I-7	Connect to Existing Watermain		EA	$ 1,500.00	$ -
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing		LS	$ 2,000.00	$ -
I-10	Sampling Manhole, Complete		LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)		SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	10	CY	$ 20.00	$ 200.00
I-13	Asphalt Pavement Replacement	10	TONS	$ 130.00	$ 1,300.00
I-14	Gravel/Stone Pavement Replacement	500	SF	$ 1.00	$ 500.00
I-15	Non-Traffic Restoration	4,000	LF	$ 2.00	$ 8,000.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 3,000.00	$ 3,000.00
I-17	Field Office	0.50	MOS.	$ 750.00	$ 375.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	5	EA	$ 250.00	$ 1,250.00
I-19	Road Boring		LS	$ 20,000.00	$ -
I-20	RR Boring		LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring		LS	$ 30,000.00	$ -
I-22	Pump Station		LS		$ -
	SUBTOTAL BASE BID ITEMS				**$ 151,525.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	20	CY	$ 25.00	$ 500.00
IC-2	Rock Excavation	5	CY	$ 150.00	$ 750.00
IC-3	#2 Crusher Run Stone AOBE	20	CY	$ 20.00	$ 400.00
IC-4	1" Tapping Saddle & Corporation for Water Service	4	EA	$ 200.00	$ 800.00
IC-5	1" Curb Stop & Box	4	EA	$ 200.00	$ 800.00
IC-6	1" Copper Water Service Tubing	200	LF	$ 11.00	$ 2,200.00
IC-7	Water Service Restoration	4	EA	$ 150.00	$ 600.00
	SUBTOTAL CONDITIONAL BID ITEMS				**$ 6,050.00**
	VILLAGE OF LYONS IMPROVEMENTS				**$ 28,871.95**
	TOTAL BASE & CONDITIONAL BID ITEMS				**$ 186,446.95**

Area No: G-11-A1
Located in Town of: Galen
Located On: Old Rte 31
Located Between: High Street to 4100' east
Total Number of Units: 5

BASE BID ITEMS:

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
I-1	12" SDR-18 PVC Watermain	4,100	LF	$ 26.00	$ 106,600.00
I-2	12" Gate Valve & Valve Box	3	EA	$ 1,700.00	$ 5,100.00
I-3	8" SDR-18 PVC Watermain	-	LF	$ 18.00	$ -
I-4	8" Gate Valve and Box	-	EA	$ 900.00	$ -
I-5	Hydrant Assembly	7	EA	$ 2,800.00	$ 19,600.00
I-6	2" Blow-Off Assembly		EA	$ 700.00	$ -
I-7	Connect to Existing Watermain		EA	$ 1,500.00	$ -
I-8	Meter/PRV Vault	1	LS	$ 35,000.00	$ 35,000.00
I-9	Creek Crossing		LS	$ 2,000.00	$ -
I-10	Sampling Manhole, Complete		LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)		SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	10	CY	$ 20.00	$ 200.00
I-13	Asphalt Pavement Replacement	10	TONS	$ 130.00	$ 1,300.00
I-14	Gravel/Stone Pavement Replacement	500	SF	$ 1.00	$ 500.00
I-15	Non-Traffic Restoration	4,000	LF	$ 2.00	$ 8,000.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 3,600.00	$ 3,600.00
I-17	Field Office	0.50	MOS.	$ 750.00	$ 375.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	5	EA	$ 250.00	$ 1,250.00
I-19	Road Boring		LS	$ 20,000.00	$ -
I-20	RR Boring		LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring		LS	$ 30,000.00	$ -
I-22	Pump Station		LS		$ -
				SUBTOTAL BASE BID ITEMS	**$ 181,525.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	20	CY	$ 25.00	$ 500.00
IC-2	Rock Excavation	5	CY	$ 150.00	$ 750.00
IC-3	#2 Crusher Run Stone AOBE	20	CY	$ 20.00	$ 400.00
IC-4	1" Tapping Saddle & Corporation for Water Service	4	EA	$ 200.00	$ 800.00
IC-5	1" Curb Stop & Box	4	EA	$ 200.00	$ 800.00
IC-6	1" Copper Water Service Tubing	240	LF	$ 11.00	$ 2,640.00
IC-7	Water Service Restoration	4	EA	$ 150.00	$ 600.00
				SUBTOTAL CONDITIONAL BID ITEMS	**$ 6,490.00**
				VILLAGE OF LYONS IMPROVEMENTS	**$ 28,871.95**
				TOTAL BASE & CONDITIONAL BID ITEMS	**$ 216,886.95**

Area No: G-12-A1
Located in Town of: Galen
Located On: Old Rte 31
Located Between: Lake Corners - Rose Valley to 4700' west
Total Number of Units: 5

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
BASE BID ITEMS:					
I-1	12" SDR-18 PVC Watermain	4,700	LF	$ 26.00	$ 122,200.00
I-2	12" Gate Valve & Valve Box	4	EA	$ 1,700.00	$ 6,800.00
I-3	8" SDR-18 PVC Watermain	-	LF	$ 18.00	$ -
I-4	8" Gate Valve and Box	-	EA	$ 900.00	$ -
I-5	Hydrant Assembly	7	EA	$ 2,800.00	$ 19,600.00
I-6	2" Blow-Off Assembly		EA	$ 700.00	$ -
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing	-	LS	$ 2,000.00	$ -
I-10	Sampling Manhole, Complete	-	LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)	-	SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	10	CY	$ 20.00	$ 200.00
I-13	Asphalt Pavement Replacement	10	TONS	$ 130.00	$ 1,300.00
I-14	Gravel/Stone Pavement Replacement	500	SF	$ 1.00	$ 500.00
I-15	Non-Traffic Restoration	4,000	LF	$ 2.00	$ 8,000.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 3,600.00	$ 3,600.00
I-17	Field Office	0.50	MOS.	$ 750.00	$ 375.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	2	EA	$ 250.00	$ 500.00
I-19	Road Boring	1	LS	$ 20,000.00	$ 20,000.00
I-20	RR Boring		LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring		LS	$ 30,000.00	$ -
I-22	Pump Station		LS		$ -
				SUBTOTAL BASE BID ITEMS	**$ 184,575.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	20	CY	$ 25.00	$ 500.00
IC-2	Rock Excavation	5	CY	$ 150.00	$ 750.00
IC-3	#2 Crusher Run Stone AOBE	20	CY	$ 20.00	$ 400.00
IC-4	1" Tapping Saddle & Corporation for Water Service	4	EA	$ 200.00	$ 800.00
IC-5	1" Curb Stop & Box	4	EA	$ 200.00	$ 800.00
IC-6	1" Copper Water Service Tubing	200	LF	$ 11.00	$ 2,200.00
IC-7	Water Service Restoration	4	EA	$ 150.00	$ 600.00
				SUBTOTAL CONDITIONAL BID ITEMS	**$ 6,050.00**
				VILLAGE OF LYONS IMPROVEMENTS	**$ 28,871.95**
				TOTAL BASE & CONDITIONAL BID ITEMS	**$ 219,496.95**

Area No: G-13-A1
Located in Town of: Galen
Located On: NYS Rte 31
Located Between: Clyde Village Line to Savannah TL
Total Number of Units: 25

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
BASE BID ITEMS:					
I-1	12" SDR-18 PVC Watermain	14,000	LF	$ 26.00	$ 364,000.00
I-2	12" Gate Valve & Valve Box	18	EA	$ 1,700.00	$ 30,600.00
I-3	8" SDR-18 PVC Watermain	-	LF	$ 18.00	$ -
I-4	8" Gate Valve and Box	-	EA	$ 900.00	$ -
I-5	Hydrant Assembly	23	EA	$ 2,800.00	$ 64,400.00
I-6	2" Blow-Off Assembly	1	EA	$ 700.00	$ 700.00
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	1	LS	$35,000.00	$ 35,000.00
I-9	Creek Crossing	1	LS	$ 2,000.00	$ 2,000.00
I-10	Sampling Manhole, Complete	1	LS	$ 5,000.00	$ 5,000.00
I-11	Shoulder Replacement (Crusher Run)	8,000	SF	$ 1.75	$ 14,000.00
I-12	Granular Backfill Within Road Limits	100	CY	$ 20.00	$ 2,000.00
I-13	Asphalt Pavement Replacement	340	LF	$ 30.00	$ 10,200.00
I-14	Gravel/Stone Pavement Replacement	250	LF	$ 6.00	$ 1,500.00
I-15	Non-Traffic Restoration	13,410	LF	$ 2.00	$ 26,820.00
I-16	Maintenance & Protection of Traffic	1	LS	$13,000.00	$ 13,000.00
I-17	Field Office	3	MOS.	$ 750.00	$ 2,250.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	18	EA	$ 250.00	$ 4,500.00
I-19	Road Boring	1	LS	$20,000.00	$ 20,000.00
I-20	RR Boring	-	LS	$25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
			SUBTOTAL BASE BID ITEMS		**$ 597,470.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	56	CY	$ 25.00	$ 1,400.00
IC-2	Rock Excavation	23	CY	$ 150.00	$ 3,450.00
IC-3	#2 Crusher Run Stone AOBE	40	CY	$ 20.00	$ 800.00
IC-4	1" Tapping Saddle & Corporation for Water Service	25	EA	$ 200.00	$ 5,000.00
IC-5	1" Curb Stop & Box	25	EA	$ 200.00	$ 5,000.00
IC-6	1" Copper Water Service Tubing	1,250	LF	$ 11.00	$ 13,750.00
IC-7	Water Service Restoration	25	EA	$ 150.00	$ 3,750.00
			SUBTOTAL CONDITIONAL BID ITEMS		**$ 33,150.00**
			VILLAGE OF CLYDE IMPROVEMENTS		**$ 93,716.67**
			TOTAL BASE & CONDITIONAL BID ITEMS		**$ 630,620.00**

Area No: G-1 Dist.
Located in Town of: Galen
Located On: Gannett Road
Located Between: Old Rte 31 to Travell Knapps Corners Rd
Total Number of Units: 18

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
BASE BID ITEMS:					
I-1	12" SDR-18 PVC Watermain	-	LF	$ 26.00	$ -
I-2	12" Gate Valve & Valve Box	-	EA	$ 1,700.00	$ -
I-3	8" SDR-18 PVC Watermain	13,500	LF	$ 18.00	$ 243,000.00
I-4	8" Gate Valve and Box	15	EA	$ 900.00	$ 13,500.00
I-5	Hydrant Assembly	23	EA	$ 2,800.00	$ 64,400.00
I-6	2" Blow-Off Assembly		EA	$ 700.00	$ -
I-7	Connect to Existing Watermain		EA	$ 1,500.00	$ -
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing	-	LS	$ 2,000.00	$ -
I-10	Sampling Manhole, Complete	-	LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)	-	SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	100	CY	$ 20.00	$ 2,000.00
I-13	Asphalt Pavement Replacement	40	TONS	$ 130.00	$ 5,200.00
I-14	Gravel/Stone Pavement Replacement	1,500	SF	$ 1.00	$ 1,500.00
I-15	Non-Traffic Restoration	13,500	LF	$ 2.00	$ 27,000.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 7,700.00	$ 7,700.00
I-17	Field Office	2.25	MOS.	$ 750.00	$ 1,687.50
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	7	EA	$ 250.00	$ 1,750.00
I-19	Road Boring	1	LS	$ 20,000.00	$ 20,000.00
I-20	RR Boring		LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring		LS	$ 30,000.00	$ -
I-22	Pump Station		LS	$ -	$ -
				SUBTOTAL BASE BID ITEMS	**$ 387,737.50**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	40	CY	$ 25.00	$ 1,000.00
IC-2	Rock Excavation	15	CY	$ 150.00	$ 2,250.00
IC-3	#2 Crusher Run Stone AOBE	40	CY	$ 20.00	$ 800.00
IC-4	1" Tapping Saddle & Corporation for Water Service	22	EA	$ 200.00	$ 4,400.00
IC-5	1" Curb Stop & Box	22	EA	$ 200.00	$ 4,400.00
IC-6	1" Copper Water Service Tubing	1,100	LF	$ 11.00	$ 12,100.00
IC-7	Water Service Restoration	22	EA	$ 150.00	$ 3,300.00
				SUBTOTAL CONDITIONAL BID ITEMS	**$ 28,250.00**
				TOTAL BASE & CONDITIONAL BID ITEMS	**$ 415,987.50**

Area No: G-2 Dist.
Located in Town of: Galen
Located On: Marengo
Located Between: V/Clyde to River Rd
Total Number of Units: 13

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
BASE BID ITEMS:					
I-1	12" SDR-18 PVC Watermain	-	LF	$ 26.00	$ -
I-2	12" Gate Valve & Valve Box	-	EA	$ 1,700.00	$ -
I-3	8" SDR-18 PVC Watermain	3,600	LF	$ 18.00	$ 64,800.00
I-4	8" Gate Valve and Box	4	EA	$ 900.00	$ 3,600.00
I-5	Hydrant Assembly	7	EA	$ 2,800.00	$ 19,600.00
I-6	2" Blow-Off Assembly		EA	$ 700.00	$ -
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	1	LS	$ 35,000.00	$ 35,000.00
I-9	Creek Crossing	1	LS	$ 2,000.00	$ 2,000.00
I-10	Sampling Manhole, Complete	1	LS	$ 5,000.00	$ 5,000.00
I-11	Shoulder Replacement (Crusher Run)		SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	30	CY	$ 20.00	$ 600.00
I-13	Asphalt Pavement Replacement	15	TONS	$ 130.00	$ 1,950.00
I-14	Gravel/Stone Pavement Replacement	500	SF	$ 1.00	$ 500.00
I-15	Non-Traffic Restoration	3,500	LF	$ 2.00	$ 7,000.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 2,900.00	$ 2,900.00
I-17	Field Office	0.70	MOS.	$ 750.00	$ 525.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	4	EA	$ 250.00	$ 1,000.00
I-19	Road Boring		LS	$ 20,000.00	$ -
I-20	RR Boring		LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring		LS	$ 30,000.00	$ -
I-22	Pump Station		LS	$ -	$ -
			SUBTOTAL BASE BID ITEMS		**$ 145,975.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	10	CY	$ 25.00	$ 250.00
IC-2	Rock Excavation	5	CY	$ 150.00	$ 750.00
IC-3	#2 Crusher Run Stone AOBE	10	CY	$ 20.00	$ 200.00
IC-4	1" Tapping Saddle & Corporation for Water Service	15	EA	$ 200.00	$ 3,000.00
IC-5	1" Curb Stop & Box	15	EA	$ 200.00	$ 3,000.00
IC-6	1" Copper Water Service Tubing	900	LF	$ 11.00	$ 9,900.00
IC-7	Water Service Restoration	15	EA	$ 150.00	$ 2,250.00
	SUBTOTAL CONDITIONAL BID ITEMS				**$ 19,350.00**
	TOTAL BASE & CONDITIONAL BID ITEMS				**$ 165,325.00**

Area No: G-3 Dist.
Located in Town of: Galen
Located On: Jenkins
Located Between: V/Clyde to Watson Rd
Total Number of Units: 19

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
BASE BID ITEMS:					
I-1	12" SDR-18 PVC Watermain	-	LF	$ 26.00	$ -
I-2	12" Gate Valve & Valve Box	-	EA	$ 1,700.00	$ -
I-3	8" SDR-18 PVC Watermain	12,600	LF	$ 18.00	$ 226,800.00
I-4	8" Gate Valve and Box	12	EA	$ 900.00	$ 10,800.00
I-5	Hydrant Assembly	21	EA	$ 2,800.00	$ 58,800.00
I-6	2" Blow-Off Assembly		EA	$ 700.00	$ -
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	1	LS	$ 35,000.00	$ 35,000.00
I-9	Creek Crossing		LS	$ 2,000.00	$ -
I-10	Sampling Manhole, Complete		LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)		SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	50	CY	$ 20.00	$ 1,000.00
I-13	Asphalt Pavement Replacement	25	TONS	$ 130.00	$ 3,250.00
I-14	Gravel/Stone Pavement Replacement	1,000	SF	$ 1.00	$ 1,000.00
I-15	Non-Traffic Restoration	12,400	LF	$ 2.00	$ 24,800.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 7,500.00	$ 7,500.00
I-17	Field Office	2.50	MOS.	$ 750.00	$ 1,875.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	12	EA	$ 250.00	$ 3,000.00
I-19	Road Boring		LS	$ 20,000.00	$ -
I-20	RR Boring		LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring		LS	$ 30,000.00	$ -
I-22	Pump Station		LS	$ -	$ -
			SUBTOTAL BASE BID ITEMS		**$ 375,325.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	50	CY	$ 25.00	$ 1,250.00
IC-2	Rock Excavation	10	CY	$ 150.00	$ 1,500.00
IC-3	#2 Crusher Run Stone AOBE	50	CY	$ 20.00	$ 1,000.00
IC-4	1" Tapping Saddle & Corporation for Water Service	22	EA	$ 200.00	$ 4,400.00
IC-5	1" Curb Stop & Box	2	EA	$ 200.00	$ 400.00
IC-6	1" Copper Water Service Tubing	800	LF	$ 11.00	$ 8,800.00
IC-7	Water Service Restoration	22	EA	$ 150.00	$ 3,300.00
	SUBTOTAL CONDITIONAL BID ITEMS				**$ 20,650.00**
	TOTAL BASE & CONDITIONAL BID ITEMS				**$ 395,975.00**

Area No: G-4 Dist.
Located in Town of: Galen
Located On: Welch
Located Between: V/Clyde to Daboll Road
Total Number of Units: 7

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
BASE BID ITEMS:					
I-1	12" SDR-18 PVC Watermain	-	LF	$ 26.00	$ -
I-2	12" Gate Valve & Valve Box	-	EA	$ 1,700.00	$ -
I-3	8" SDR-18 PVC Watermain	8,300	LF	$ 18.00	$ 149,400.00
I-4	8" Gate Valve and Box	10	EA	$ 900.00	$ 9,000.00
I-5	Hydrant Assembly	14	EA	$ 2,800.00	$ 39,200.00
I-6	2" Blow-Off Assembly		EA	$ 700.00	$ -
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	1	LS	$ 35,000.00	$ 35,000.00
I-9	Creek Crossing		LS	$ 2,000.00	$ -
I-10	Sampling Manhole, Complete		LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)		SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	75	CY	$ 20.00	$ 1,500.00
I-13	Asphalt Pavement Replacement	30	TONS	$ 130.00	$ 3,900.00
I-14	Gravel/Stone Pavement Replacement	1,000	SF	$ 1.00	$ 1,000.00
I-15	Non-Traffic Restoration	8,100	LF	$ 2.00	$ 16,200.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 9,300.00	$ 9,300.00
I-17	Field Office	1.50	MOS.	$ 750.00	$ 1,125.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	9	EA	$ 250.00	$ 2,250.00
I-19	Road Boring		LS	$ 20,000.00	$ -
I-20	RR Boring		LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring		LS	$ 30,000.00	$ -
I-22	Pump Station	1	LS	$ 200,000	$ 200,000.00
			SUBTOTAL BASE BID ITEMS		**$ 469,375.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	20	CY	$ 25.00	$ 500.00
IC-2	Rock Excavation	10	CY	$ 150.00	$ 1,500.00
IC-3	#2 Crusher Run Stone AOBE	20	CY	$ 20.00	$ 400.00
IC-4	1" Tapping Saddle & Corporation for Water Service	10	EA	$ 200.00	$ 2,000.00
IC-5	1" Curb Stop & Box	10	EA	$ 200.00	$ 2,000.00
IC-6	1" Copper Water Service Tubing	600	LF	$ 11.00	$ 6,600.00
IC-7	Water Service Restoration	10	EA	$ 150.00	$ 1,500.00
	SUBTOTAL CONDITIONAL BID ITEMS				**$ 14,500.00**
	TOTAL BASE & CONDITIONAL BID ITEMS				**$ 483,875.00**

Area No: G-5 Dist.
Located in Town of: Galen
Located On: High
Located Between: Travell Knapps Corners Rd to Rte 31
Total Number of Units: 19

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
BASE BID ITEMS:					
I-1	12" SDR-18 PVC Watermain	-	LF	$ 26.00	$ -
I-2	12" Gate Valve & Valve Box	-	EA	$ 1,700.00	$ -
I-3	8" SDR-18 PVC Watermain	13,200	LF	$ 18.00	$ 237,600.00
I-4	8" Gate Valve and Box	13	EA	$ 900.00	$ 11,700.00
I-5	Hydrant Assembly	22	EA	$ 2,800.00	$ 61,600.00
I-6	2" Blow-Off Assembly		EA	$ 700.00	$ -
I-7	Connect to Existing Watermain		EA	$ 1,500.00	$ -
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing		LS	$ 2,000.00	$ -
I-10	Sampling Manhole, Complete		LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)		SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	75	CY	$ 20.00	$ 1,500.00
I-13	Asphalt Pavement Replacement	30	TONS	$ 130.00	$ 3,900.00
I-14	Gravel/Stone Pavement Replacement	1,000	SF	$ 1.00	$ 1,000.00
I-15	Non-Traffic Restoration	12,900	LF	$ 2.00	$ 25,800.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 7,500.00	$ 7,500.00
I-17	Field Office	2.50	MOS.	$ 750.00	$ 1,875.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	13	EA	$ 250.00	$ 3,250.00
I-19	Road Boring	1	LS	$ 20,000.00	$ 20,000.00
I-20	RR Boring		LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring		LS	$ 30,000.00	$ -
I-22	Pump Station		LS	$ -	$ -
			SUBTOTAL BASE BID ITEMS		**$ 375,725.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	70	CY	$ 25.00	$ 1,750.00
IC-2	Rock Excavation	20	CY	$ 150.00	$ 3,000.00
IC-3	#2 Crusher Run Stone AOBE	50	CY	$ 20.00	$ 1,000.00
IC-4	1" Tapping Saddle & Corporation for Water Service	22	EA	$ 200.00	$ 4,400.00
IC-5	1" Curb Stop & Box	22	EA	$ 200.00	$ 4,400.00
IC-6	1" Copper Water Service Tubing	880	LF	$ 11.00	$ 9,680.00
IC-7	Water Service Restoration	22	EA	$ 150.00	$ 3,300.00
	SUBTOTAL CONDITIONAL BID ITEMS				**$ 27,530.00**
	TOTAL BASE & CONDITIONAL BID ITEMS				**$ 403,255.00**

Area No: G-6 Dist.
Located in Town of: Galen
Located On: Stokes
Located Between: Gannett to Rte 31
Total Number of Units: 11

BASE BID ITEMS:					
Item No.	**Item Description:**	**Quantity**	**Unit**	**Unit Price**	**Total**
I-1	12" SDR-18 PVC Watermain	-	LF	$ 26.00	$ -
I-2	12" Gate Valve & Valve Box	-	EA	$ 1,700.00	$ -
I-3	8" SDR-18 PVC Watermain	5,300	LF	$ 18.00	$ 95,400.00
I-4	8" Gate Valve and Box	6	EA	$ 900.00	$ 5,400.00
I-5	Hydrant Assembly	10	EA	$ 2,800.00	$ 28,000.00
I-6	2" Blow-Off Assembly		EA	$ 700.00	$ -
I-7	Connect to Existing Watermain		EA	$ 1,500.00	$ -
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing		LS	$ 2,000.00	$ -
I-10	Sampling Manhole, Complete		LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)		SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	20	CY	$ 20.00	$ 400.00
I-13	Asphalt Pavement Replacement	15	TONS	$ 130.00	$ 1,950.00
I-14	Gravel/Stone Pavement Replacement	1,000	SF	$ 1.00	$ 1,000.00
I-15	Non-Traffic Restoration	5,200	LF	$ 2.00	$ 10,400.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 3,300.00	$ 3,300.00
I-17	Field Office	1.00	MOS.	$ 750.00	$ 750.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	5	EA	$ 250.00	$ 1,250.00
I-19	Road Boring	1	LS	$ 20,000.00	$ 20,000.00
I-20	RR Boring		LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring		LS	$ 30,000.00	$ -
I-22	Pump Station		LS	$ -	$ -
			SUBTOTAL BASE BID ITEMS		**$ 167,850.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	10	CY	$ 25.00	$ 250.00
IC-2	Rock Excavation	5	CY	$ 150.00	$ 750.00
IC-3	#2 Crusher Run Stone AOBE	10	CY	$ 20.00	$ 200.00
IC-4	1" Tapping Saddle & Corporation for Water Service	14	EA	$ 200.00	$ 2,800.00
IC-5	1" Curb Stop & Box	14	EA	$ 200.00	$ 2,800.00
IC-6	1" Copper Water Service Tubing	560	LF	$ 11.00	$ 6,160.00
IC-7	Water Service Restoration	14	EA	$ 150.00	$ 2,100.00
	SUBTOTAL CONDITIONAL BID ITEMS				**$ 15,060.00**
	TOTAL BASE & CONDITIONAL BID ITEMS				**$ 182,910.00**

Area No: G-7 Dist.
Located in Town of: Galen
Located On: Powers
Located Between: Elm to Kelsey
Total Number of Units: 11

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
BASE BID ITEMS:					
I-1	12" SDR-18 PVC Watermain	-	LF	$ 26.00	$ -
I-2	12" Gate Valve & Valve Box	-	EA	$ 1,700.00	$ -
I-3	8" SDR-18 PVC Watermain	6,700	LF	$ 18.00	$ 120,600.00
I-4	8" Gate Valve and Box	8	EA	$ 900.00	$ 7,200.00
I-5	Hydrant Assembly	11	EA	$ 2,800.00	$ 30,800.00
I-6	2" Blow-Off Assembly	-	EA	$ 700.00	$ -
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	1	LS	$ 35,000.00	$ 35,000.00
I-9	Creek Crossing	-	LS	$ 2,000.00	$ -
I-10	Sampling Manhole, Complete	-	LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)	-	SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	25	CY	$ 20.00	$ 500.00
I-13	Asphalt Pavement Replacement	120	LF	$ 30.00	$ 3,600.00
I-14	Gravel/Stone Pavement Replacement	120	LF	$ 6.00	$ 720.00
I-15	Non-Traffic Restoration	6,460	LF	$ 2.00	$ 12,920.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 4,300.00	$ 4,300.00
I-17	Field Office	1	MOS.	$ 750.00	$ 750.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	8	EA	$ 250.00	$ 2,000.00
I-19	Road Boring	-	LS	$ 20,000.00	$ -
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
			SUBTOTAL BASE BID ITEMS		**$ 219,890.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	27	CY	$ 25.00	$ 675.00
IC-2	Rock Excavation	11	CY	$ 150.00	$ 1,650.00
IC-3	#2 Crusher Run Stone AOBE	19	CY	$ 20.00	$ 380.00
IC-4	1" Tapping Saddle & Corporation for Water Service	11	EA	$ 200.00	$ 2,200.00
IC-5	1" Curb Stop & Box	11	EA	$ 200.00	$ 2,200.00
IC-6	1" Copper Water Service Tubing	550	LF	$ 11.00	$ 6,050.00
IC-7	Water Service Restoration	11	EA	$ 150.00	$ 1,650.00
	SUBTOTAL CONDITIONAL BID ITEMS				**$ 14,805.00**
	TOTAL BASE & CONDITIONAL BID ITEMS				**$ 234,695.00**

Area No: G-8 Dist.
Located in Town of: Galen
Located On: Highland Fruit Farm Rd
Located Between: Lock Berlin to Lyons TL
Total Number of Units: 14

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
BASE BID ITEMS:					
I-1	12" SDR-18 PVC Watermain	10,000	LF	$ 26.00	$ 260,000.00
I-2	12" Gate Valve & Valve Box	10	EA	$ 1,700.00	$ 17,000.00
I-3	8" SDR-18 PVC Watermain	-	LF	$ 18.00	$ -
I-4	8" Gate Valve and Box	-	EA	$ 900.00	$ -
I-5	Hydrant Assembly	17	EA	$ 2,800.00	$ 47,600.00
I-6	2" Blow-Off Assembly		EA	$ 700.00	$ -
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing		LS	$ 2,000.00	$ -
I-10	Sampling Manhole, Complete		LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)		SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	70	CY	$ 20.00	$ 1,400.00
I-13	Asphalt Pavement Replacement	30	TONS	$ 130.00	$ 3,900.00
I-14	Gravel/Stone Pavement Replacement	1,200	SF	$ 1.00	$ 1,200.00
I-15	Non-Traffic Restoration	9,800	LF	$ 2.00	$ 19,600.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 7,600.00	$ 7,600.00
I-17	Field Office	2.00	MOS.	$ 750.00	$ 1,500.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	9	EA	$ 250.00	$ 2,250.00
I-19	Road Boring	1	LS	$ 20,000.00	$ 20,000.00
I-20	RR Boring		LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring		LS	$ 30,000.00	$ -
I-22	Pump Station		LS	$ -	$ -
				SUBTOTAL BASE BID ITEMS	**$ 383,550.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	20	CY	$ 25.00	$ 500.00
IC-2	Rock Excavation	10	CY	$ 150.00	$ 1,500.00
IC-3	#2 Crusher Run Stone AOBE	20	CY	$ 20.00	$ 400.00
IC-4	1" Tapping Saddle & Corporation for Water Service	19	EA	$ 200.00	$ 3,800.00
IC-5	1" Curb Stop & Box	19	EA	$ 200.00	$ 3,800.00
IC-6	1" Copper Water Service Tubing	720	LF	$ 11.00	$ 7,920.00
IC-7	Water Service Restoration	19	EA	$ 150.00	$ 2,850.00
				SUBTOTAL CONDITIONAL BID ITEMS	**$ 20,770.00**
				TOTAL BASE & CONDITIONAL BID ITEMS	**$ 404,320.00**

APPENDIX C

SAVANNAH CONSTRUCTION COST ESTIMATES

Area No: S-1-A1
Located in Town of: Savannah
Located On: NYS Rte 31
Located Between: Savannah TL to Messner Rd
Total Number of Units: 16

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
BASE BID ITEMS:					
I-1	12" SDR-18 PVC Watermain	8,800	LF	$ 26.00	$ 228,800.00
I-2	12" Gate Valve & Valve Box	11	EA	$ 1,700.00	$ 18,700.00
I-3	8" SDR-18 PVC Watermain	-	LF	$ 18.00	$ -
I-4	8" Gate Valve and Box	-	EA	$ 900.00	$ -
I-5	Hydrant Assembly	15	EA	$ 2,800.00	$ 42,000.00
I-6	2" Blow-Off Assembly	-	EA	$ 700.00	$ -
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	1	LS	$ 35,000.00	$ 35,000.00
I-9	Creek Crossing	1	LS	$ 2,000.00	$ 2,000.00
I-10	Sampling Manhole, Complete	2	LS	$ 5,000.00	$ 10,000.00
I-11	Shoulder Replacement (Crusher Run)	4,400	SF	$ 1.75	$ 7,700.00
I-12	Granular Backfill Within Road Limits	75	CY	$ 20.00	$ 1,500.00
I-13	Asphalt Pavement Replacement	190	LF	$ 30.00	$ 5,700.00
I-14	Gravel/Stone Pavement Replacement	100	LF	$ 6.00	$ 600.00
I-15	Non-Traffic Restoration	8,510	LF	$ 2.00	$ 17,020.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 8,200.00	$ 8,200.00
I-17	Field Office	2	MOS.	$ 750.00	$ 1,500.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	11	EA	$ 250.00	$ 2,750.00
I-19	Road Boring	-	LS	$ 20,000.00	$ -
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	1	LS	$ 30,000.00	$ 30,000.00
I-22	Pump Station	-	LS	$ -	$ -
			SUBTOTAL BASE BID ITEMS		**$ 412,970.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	35	CY	$ 25.00	$ 875.00
IC-2	Rock Excavation	15	CY	$ 150.00	$ 2,250.00
IC-3	#2 Crusher Run Stone AOBE	25	CY	$ 20.00	$ 500.00
IC-4	1" Tapping Saddle & Corporation for Water Service	16	EA	$ 200.00	$ 3,200.00
IC-5	1" Curb Stop & Box	16	EA	$ 200.00	$ 3,200.00
IC-6	1" Copper Water Service Tubing	800	LF	$ 11.00	$ 8,800.00
IC-7	Water Service Restoration	16	EA	$ 150.00	$ 2,400.00
			SUBTOTAL CONDITIONAL BID ITEMS		**$ 21,225.00**
			VILLAGE OF CLYDE IMPROVEMENTS		**$ 59,978.67**
			TOTAL BASE & CONDITIONAL BID ITEMS		**$ 494,173.67**

Area No: S-2-A1
Located in Town of: Savannah
Located On: Messner
Located Between: Grand Ave to NYS 31
Total Number of Units: 3

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
BASE BID ITEMS:					
I-1	12" SDR-18 PVC Watermain	3,750	LF	$ 26.00	$ 97,500.00
I-2	12" Gate Valve & Valve Box	5	EA	$ 1,700.00	$ 8,500.00
I-3	8" SDR-18 PVC Watermain	-	LF	$ 18.00	$ -
I-4	8" Gate Valve and Box	-	EA	$ 900.00	$ -
I-5	Hydrant Assembly	6	EA	$ 2,800.00	$ 16,800.00
I-6	2" Blow-Off Assembly	-	EA	$ 700.00	$ -
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing	-	LS	$ 2,000.00	$ -
I-10	Sampling Manhole, Complete	-	LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)	-	SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	-	CY	$ 20.00	$ -
I-13	Asphalt Pavement Replacement	50	LF	$ 30.00	$ 1,500.00
I-14	Gravel/Stone Pavement Replacement	20	LF	$ 6.00	$ 120.00
I-15	Non-Traffic Restoration	3,680	LF	$ 2.00	$ 7,360.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 2,700.00	$ 2,700.00
I-17	Field Office	1	MOS.	$ 750.00	$ 750.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	5	EA	$ 250.00	$ 1,250.00
I-19	Road Boring	-	LS	$ 20,000.00	$ -
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
				SUBTOTAL BASE BID ITEMS	**$ 137,980.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	15	CY	$ 25.00	$ 375.00
IC-2	Rock Excavation	6	CY	$ 150.00	$ 900.00
IC-3	#2 Crusher Run Stone AOBE	11	CY	$ 20.00	$ 220.00
IC-4	1" Tapping Saddle & Corporation for Water Service	3	EA	$ 200.00	$ 600.00
IC-5	1" Curb Stop & Box	3	EA	$ 200.00	$ 600.00
IC-6	1" Copper Water Service Tubing	150	LF	$ 11.00	$ 1,650.00
IC-7	Water Service Restoration	3	EA	$ 150.00	$ 450.00
				SUBTOTAL CONDITIONAL BID ITEMS	**$ 4,795.00**
				VILLAGE OF CLYDE IMPROVEMENTS	**$ 11,246.00**
				TOTAL BASE & CONDITIONAL BID ITEMS	**$ 154,021.00**

Area No: S-3-A1
Located in Town of: Savannah
Located On: NYS Rte 31
Located Between: Messner to 4000' east
Total Number of Units: 1

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
BASE BID ITEMS:					
I-1	12" SDR-18 PVC Watermain	-	LF	$ 26.00	$ -
I-2	12" Gate Valve & Valve Box	-	EA	$ 1,700.00	$ -
I-3	8" SDR-18 PVC Watermain	4,000	LF	$ 18.00	$ 72,000.00
I-4	8" Gate Valve and Box	5	EA	$ 900.00	$ 4,500.00
I-5	Hydrant Assembly	7	EA	$ 2,800.00	$ 19,600.00
I-6	2" Blow-Off Assembly	-	EA	$ 700.00	$ -
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing	-	LS	$ 2,000.00	$ -
I-10	Sampling Manhole, Complete	-	LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)	-	SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	-	CY	$ 20.00	$ -
I-13	Asphalt Pavement Replacement	40	LF	$ 30.00	$ 1,200.00
I-14	Gravel/Stone Pavement Replacement	20	LF	$ 6.00	$ 120.00
I-15	Non-Traffic Restoration	3,940	LF	$ 2.00	$ 7,880.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 2,200.00	$ 2,200.00
I-17	Field Office	1	MOS.	$ 750.00	$ 750.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	5	EA	$ 250.00	$ 1,250.00
I-19	Road Boring	-	LS	$ 20,000.00	$ -
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
				SUBTOTAL BASE BID ITEMS	**$ 111,000.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	16	CY	$ 25.00	$ 400.00
IC-2	Rock Excavation	7	CY	$ 150.00	$ 1,050.00
IC-3	#2 Crusher Run Stone AOBE	11	CY	$ 20.00	$ 220.00
IC-4	1" Tapping Saddle & Corporation for Water Service	1	EA	$ 200.00	$ 200.00
IC-5	1" Curb Stop & Box	1	EA	$ 200.00	$ 200.00
IC-6	1" Copper Water Service Tubing	50	LF	$ 11.00	$ 550.00
IC-7	Water Service Restoration	1	EA	$ 150.00	$ 150.00
				SUBTOTAL CONDITIONAL BID ITEMS	**$ 2,770.00**
				VILLAGE OF CLYDE IMPROVEMENTS	**$ 3,748.67**
				TOTAL BASE & CONDITIONAL BID ITEMS	**$ 117,518.67**

Area No: S-3-A4
Located in Town of: Savannah
Located On: NYS Rte 31
Located Between: Severence Rd to Armitage Rd.
Total Number of Units: 23

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
BASE BID ITEMS:					
I-1	12" SDR-18 PVC Watermain		LF	$ 26.00	$ -
I-2	12" Gate Valve & Valve Box	-	EA	$ 1,700.00	$ -
I-3	8" SDR-18 PVC Watermain	8,100	LF	$ 18.00	$ 145,800.00
I-4	8" Gate Valve and Box	10	EA	$ 900.00	$ 9,000.00
I-5	Hydrant Assembly	14	EA	$ 2,800.00	$ 39,200.00
I-6	2" Blow-Off Assembly	1	EA	$ 700.00	$ 700.00
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing	1	LS	$ 2,000.00	$ 2,000.00
I-10	Sampling Manhole, Complete	1	LS	$ 5,000.00	$ 5,000.00
I-11	Shoulder Replacement (Crusher Run)	5,100	SF	$ 1.75	$ 8,925.00
I-12	Granular Backfill Within Road Limits	75	CY	$ 20.00	$ 1,500.00
I-13	Asphalt Pavement Replacement	400	LF	$ 30.00	$ 12,000.00
I-14	Gravel/Stone Pavement Replacement	400	LF	$ 6.00	$ 2,400.00
I-15	Non-Traffic Restoration	7,300	LF	$ 2.00	$ 14,600.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 9,100.00	$ 9,100.00
I-17	Field Office	2	MOS.	$ 750.00	$ 1,500.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	10	EA	$ 250.00	$ 2,500.00
I-19	Road Boring	1	LS	$ 20,000.00	$ 20,000.00
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	1	LS	$ 200,000.00	$ 200,000.00
			SUBTOTAL BASE BID ITEMS		**$ 475,725.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	32	CY	$ 25.00	$ 800.00
IC-2	Rock Excavation	14	CY	$ 150.00	$ 2,100.00
IC-3	#2 Crusher Run Stone AOBE	23	CY	$ 20.00	$ 460.00
IC-4	1" Tapping Saddle & Corporation for Water Service	23	EA	$ 200.00	$ 4,600.00
IC-5	1" Curb Stop & Box	23	EA	$ 200.00	$ 4,600.00
IC-6	1" Copper Water Service Tubing	1,150	LF	$ 11.00	$ 12,650.00
IC-7	Water Service Restoration	23	EA	$ 150.00	$ 3,450.00
			SUBTOTAL CONDITIONAL BID ITEMS		**$ 28,660.00**
			TOTAL BASE & CONDITIONAL BID ITEMS		**$ 504,385.00**

Area No: S-4-A4
Located in Town of: Savannah
Located On: NYS 89 and Cotton
Located Between: Bixby Wood Rd to Intersection of Cotton/Rte 89
Total Number of Units: 15

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
BASE BID ITEMS:					
I-1	12" SDR-18 PVC Watermain	11,500	LF	$ 26.00	$ 299,000.00
I-2	12" Gate Valve & Valve Box	14	EA	$ 1,700.00	$ 23,800.00
I-3	8" SDR-18 PVC Watermain	-	LF	$ 18.00	$ -
I-4	8" Gate Valve and Box	-	EA	$ 900.00	$ -
I-5	Hydrant Assembly	19	EA	$ 2,800.00	$ 53,200.00
I-6	2" Blow-Off Assembly	-	EA	$ 700.00	$ -
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing	1	LS	$ 2,000.00	$ 2,000.00
I-10	Sampling Manhole, Complete	1	LS	$ 5,000.00	$ 5,000.00
I-11	Shoulder Replacement (Crusher Run)	5,100	SF	$ 1.75	$ 8,925.00
I-12	Granular Backfill Within Road Limits	-	CY	$ 20.00	$ -
I-13	Asphalt Pavement Replacement	200	LF	$ 30.00	$ 6,000.00
I-14	Gravel/Stone Pavement Replacement	160	LF	$ 6.00	$ 960.00
I-15	Non-Traffic Restoration	11,140	LF	$ 2.00	$ 22,280.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 9,100.00	$ 9,100.00
I-17	Field Office	2	MOS.	$ 750.00	$ 1,500.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	14	EA	$ 250.00	$ 3,500.00
I-19	Road Boring	1	LS	$ 20,000.00	$ 20,000.00
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
			SUBTOTAL BASE BID ITEMS		**$ 456,765.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	46	CY	$ 25.00	$ 1,150.00
IC-2	Rock Excavation	19	CY	$ 150.00	$ 2,850.00
IC-3	#2 Crusher Run Stone AOBE	33	CY	$ 20.00	$ 660.00
IC-4	1" Tapping Saddle & Corporation for Water Service	15	EA	$ 200.00	$ 3,000.00
IC-5	1" Curb Stop & Box	15	EA	$ 200.00	$ 3,000.00
IC-6	1" Copper Water Service Tubing	750	LF	$ 11.00	$ 8,250.00
IC-7	Water Service Restoration	15	EA	$ 150.00	$ 2,250.00
			SUBTOTAL CONDITIONAL BID ITEMS		**$ 21,160.00**
			TOTAL BASE & CONDITIONAL BID ITEMS		**$ 477,925.00**

Area No: S-5-A4
Located in Town of: Savannah
Located On: Rte 89
Located Between: Cotton Rd to Butler TL
Total Number of Units: 30

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
BASE BID ITEMS:					
I-1	12" SDR-18 PVC Watermain	5,547	LF	$ 26.00	$ 144,222.00
I-2	12" Gate Valve & Valve Box	7	EA	$ 1,700.00	$ 11,900.00
I-3	8" SDR-18 PVC Watermain	-	LF	$ 18.00	$ -
I-4	8" Gate Valve and Box	-	EA	$ 900.00	$ -
I-5	Hydrant Assembly	9	EA	$ 2,800.00	$ 25,200.00
I-6	2" Blow-Off Assembly	1	EA	$ 700.00	$ 700.00
I-7	Connect to Existing Watermain	-	EA	$ 1,500.00	$ -
I-8	Meter/PRV Vault	1	LS	$ 35,000.00	$ 35,000.00
I-9	Creek Crossing	1	LS	$ 2,000.00	$ 2,000.00
I-10	Sampling Manhole, Complete	1	LS	$ 5,000.00	$ 5,000.00
I-11	Shoulder Replacement (Crusher Run)	100	SF	$ 1.75	$ 175.00
I-12	Granular Backfill Within Road Limits	-	CY	$ 20.00	$ -
I-13	Asphalt Pavement Replacement	200	LF	$ 30.00	$ 6,000.00
I-14	Gravel/Stone Pavement Replacement	220	LF	$ 6.00	$ 1,320.00
I-15	Non-Traffic Restoration	5,127	LF	$ 2.00	$ 10,254.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 4,900.00	$ 4,900.00
I-17	Field Office	1	MOS.	$ 750.00	$ 750.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	7	EA	$ 250.00	$ 1,750.00
I-19	Road Boring	-	LS	$ 20,000.00	$ -
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
			SUBTOTAL BASE BID ITEMS		**$ 249,171.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	22	CY	$ 25.00	$ 550.00
IC-2	Rock Excavation	9	CY	$ 150.00	$ 1,350.00
IC-3	#2 Crusher Run Stone AOBE	16	CY	$ 20.00	$ 320.00
IC-4	1" Tapping Saddle & Corporation for Water Service	30	EA	$ 200.00	$ 6,000.00
IC-5	1" Curb Stop & Box	30	EA	$ 200.00	$ 6,000.00
IC-6	1" Copper Water Service Tubing	1,500	LF	$ 11.00	$ 16,500.00
IC-7	Water Service Restoration	30	EA	$ 150.00	$ 4,500.00
			SUBTOTAL CONDITIONAL BID ITEMS		**$ 35,220.00**
			TOTAL BASE & CONDITIONAL BID ITEMS		**$ 284,391.00**

APPENDIX D

BUTLER CONSTRUCTION COST ESTIMATES

Area No: B-2-A2
Located in Town of: Butler
Located On: S Butler and Rural
Located Between: In Hamlet of S. Butler
Total Number of Units: 30

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
BASE BID ITEMS:					
I-1	12" SDR-18 PVC Watermain	1,150	LF	$ 26.00	$ 29,900.00
I-2	12" Gate Valve & Valve Box	1	EA	$ 1,700.00	$ 1,700.00
I-3	8" SDR-18 PVC Watermain	1,450	LF	$ 18.00	$ 26,100.00
I-4	8" Gate Valve and Box	2	EA	$ 900.00	$ 1,800.00
I-5	Hydrant Assembly	4	EA	$ 2,800.00	$ 11,200.00
I-6	2" Blow-Off Assembly	1	EA	$ 700.00	$ 700.00
I-7	Connect to Existing Watermain	-	EA	$ 1,500.00	$ -
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing	-	LS	$ 2,000.00	$ -
I-10	Sampling Manhole, Complete	-	LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)	4,000	SF	$ 1.75	$ 7,000.00
I-12	Granular Backfill Within Road Limits	75	CY	$ 20.00	$ 1,500.00
I-13	Asphalt Pavement Replacement	500	LF	$ 30.00	$ 15,000.00
I-14	Gravel/Stone Pavement Replacement	160	LF	$ 6.00	$ 960.00
I-15	Non-Traffic Restoration	1,940	LF	$ 2.00	$ 3,880.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 2,000.00	$ 2,000.00
I-17	Field Office	1	MOS.	$ 750.00	$ 750.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	3	EA	$ 250.00	$ 750.00
I-19	Road Boring	-	LS	$ 20,000.00	$ -
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
				SUBTOTAL BASE BID ITEMS	**$ 103,240.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	10	CY	$ 25.00	$ 250.00
IC-2	Rock Excavation	4	CY	$ 150.00	$ 600.00
IC-3	#2 Crusher Run Stone AOBE	7	CY	$ 20.00	$ 140.00
IC-4	1" Tapping Saddle & Corporation for Water Service	30	EA	$ 200.00	$ 6,000.00
IC-5	1" Curb Stop & Box	30	EA	$ 200.00	$ 6,000.00
IC-6	1" Copper Water Service Tubing	1,500	LF	$ 11.00	$ 16,500.00
IC-7	Water Service Restoration	30	EA	$ 150.00	$ 4,500.00
				SUBTOTAL CONDITIONAL BID ITEMS	**$ 33,990.00**
				TOTAL BASE & CONDITIONAL BID ITEMS	**$ 137,230.00**

Area No: B-3-A4
Located in Town of: Butler
Located On: NYS Rte 89
Located Between: Savannah TL to Foster Mead Rd
Total Number of Units: 22

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
BASE BID ITEMS:					
I-1	12" SDR-18 PVC Watermain	2,786	LF	$ 26.00	$ 72,436.00
I-2	12" Gate Valve & Valve Box	3	EA	$ 1,700.00	$ 5,100.00
I-3	8" SDR-18 PVC Watermain	-	LF	$ 18.00	$ -
I-4	8" Gate Valve and Box	-	EA	$ 900.00	$ -
I-5	Hydrant Assembly	5	EA	$ 2,800.00	$ 14,000.00
I-6	2" Blow-Off Assembly	1	EA	$ 700.00	$ 700.00
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	1	LS	$ 35,000.00	$ 35,000.00
I-9	Creek Crossing	-	LS	$ 2,000.00	$ -
I-10	Sampling Manhole, Complete	-	LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)	300	SF	$ 1.75	$ 525.00
I-12	Granular Backfill Within Road Limits	100	CY	$ 20.00	$ 2,000.00
I-13	Asphalt Pavement Replacement	200	LF	$ 30.00	$ 6,000.00
I-14	Gravel/Stone Pavement Replacement	100	LF	$ 6.00	$ 600.00
I-15	Non-Traffic Restoration	2,486	LF	$ 2.00	$ 4,972.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 3,300.00	$ 3,300.00
I-17	Field Office	1	MOS.	$ 750.00	$ 750.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	3	EA	$ 250.00	$ 750.00
I-19	Road Boring	1	LS	$ 20,000.00	$ 20,000.00
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
				SUBTOTAL BASE BID ITEMS	**$ 167,633.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	11	CY	$ 25.00	$ 275.00
IC-2	Rock Excavation	5	CY	$ 150.00	$ 750.00
IC-3	#2 Crusher Run Stone AOBE	8	CY	$ 20.00	$ 160.00
IC-4	1" Tapping Saddle & Corporation for Water Service	22	EA	$ 200.00	$ 4,400.00
IC-5	1" Curb Stop & Box	22	EA	$ 200.00	$ 4,400.00
IC-6	1" Copper Water Service Tubing	1,100	LF	$ 11.00	$ 12,100.00
IC-7	Water Service Restoration	22	EA	$ 150.00	$ 3,300.00
				SUBTOTAL CONDITIONAL BID ITEMS	**$ 25,385.00**
				TOTAL BASE & CONDITIONAL BID ITEMS	**$ 193,018.00**

Area No: B-4-A4
Located in Town of: Butler
Located On: NYS Rte 89
Located Between: Foster Mead Rd to Butler Center
Total Number of Units: 21

BASE BID ITEMS:					
Item No.	**Item Description:**	**Quantity**	**Unit**	**Unit Price**	**Total**
I-1	12" SDR-18 PVC Watermain	8,795	LF	$ 26.00	$ 228,670.00
I-2	12" Gate Valve & Valve Box	11	EA	$ 1,700.00	$ 18,700.00
I-3	8" SDR-18 PVC Watermain	-	LF	$ 18.00	$ -
I-4	8" Gate Valve and Box	-	EA	$ 900.00	$ -
I-5	Hydrant Assembly	15	EA	$ 2,800.00	$ 42,000.00
I-6	2" Blow-Off Assembly	1	EA	$ 700.00	$ 700.00
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing	-	LS	$ 2,000.00	$ -
I-10	Sampling Manhole, Complete	-	LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)	-	SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	25	CY	$ 20.00	$ 500.00
I-13	Asphalt Pavement Replacement	230	LF	$ 30.00	$ 6,900.00
I-14	Gravel/Stone Pavement Replacement	300	LF	$ 6.00	$ 1,800.00
I-15	Non-Traffic Restoration	8,265	LF	$ 2.00	$ 16,530.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 6,500.00	$ 6,500.00
I-17	Field Office	2	MOS.	$ 750.00	$ 1,500.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	11	EA	$ 250.00	$ 2,750.00
I-19	Road Boring	-	LS	$ 20,000.00	$ -
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
				SUBTOTAL BASE BID ITEMS	**$ 328,050.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	35	CY	$ 25.00	$ 875.00
IC-2	Rock Excavation	15	CY	$ 150.00	$ 2,250.00
IC-3	#2 Crusher Run Stone AOBE	25	CY	$ 20.00	$ 500.00
IC-4	1" Tapping Saddle & Corporation for Water Service	21	EA	$ 200.00	$ 4,200.00
IC-5	1" Curb Stop & Box	21	EA	$ 200.00	$ 4,200.00
IC-6	1" Copper Water Service Tubing	1,050	LF	$ 11.00	$ 11,550.00
IC-7	Water Service Restoration	21	EA	$ 150.00	$ 3,150.00
				SUBTOTAL CONDITIONAL BID ITEMS	**$ 26,725.00**
				TOTAL BASE & CONDITIONAL BID ITEMS	**$ 354,775.00**

Area No: B-5-A4
Located in Town of: Butler
Located On: NYS Rte 89/Everhart
Located Between: Butler Center to Livingston rd
Total Number of Units: 2

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
BASE BID ITEMS:					
I-1	12" SDR-18 PVC Watermain	5,920	LF	$ 26.00	$ 153,920.00
I-2	12" Gate Valve & Valve Box	7	EA	$ 1,700.00	$ 11,900.00
I-3	8" SDR-18 PVC Watermain	-	LF	$ 18.00	$ -
I-4	8" Gate Valve and Box	-	EA	$ 900.00	$ -
I-5	Hydrant Assembly	10	EA	$ 2,800.00	$ 28,000.00
I-6	2" Blow-Off Assembly	1	EA	$ 700.00	$ 700.00
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault		LS	$ 35,000.00	$ -
I-9	Creek Crossing	2	LS	$ 2,000.00	$ 4,000.00
I-10	Sampling Manhole, Complete	2	LS	$ 5,000.00	$ 10,000.00
I-11	Shoulder Replacement (Crusher Run)	-	SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	-	CY	$ 20.00	$ -
I-13	Asphalt Pavement Replacement	-	LF	$ 30.00	$ -
I-14	Gravel/Stone Pavement Replacement	60	LF	$ 6.00	$ 360.00
I-15	Non-Traffic Restoration	5,860	LF	$ 2.00	$ 11,720.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 4,900.00	$ 4,900.00
I-17	Field Office	1	MOS.	$ 750.00	$ 750.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	7	EA	$ 250.00	$ 1,750.00
I-19	Road Boring	1	LS	$ 20,000.00	$ 20,000.00
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
				SUBTOTAL BASE BID ITEMS	**$ 249,500.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	24	CY	$ 25.00	$ 600.00
IC-2	Rock Excavation	10	CY	$ 150.00	$ 1,500.00
IC-3	#2 Crusher Run Stone AOBE	17	CY	$ 20.00	$ 340.00
IC-4	1" Tapping Saddle & Corporation for Water Service	2	EA	$ 200.00	$ 400.00
IC-5	1" Curb Stop & Box	2	EA	$ 200.00	$ 400.00
IC-6	1" Copper Water Service Tubing	100	LF	$ 11.00	$ 1,100.00
IC-7	Water Service Restoration	2	EA	$ 150.00	$ 300.00
				SUBTOTAL CONDITIONAL BID ITEMS	**$ 4,640.00**
				TOTAL BASE & CONDITIONAL BID ITEMS	**$ 254,140.00**

Area No: B-6-A4
Located in Town of: Butler
Located On: Livingston Road
Located Between: Everhart to Whiskey Hill
Total Number of Units: 10

BASE BID ITEMS:					
Item No.	**Item Description:**	**Quantity**	**Unit**	**Unit Price**	**Total**
I-1	12" SDR-18 PVC Watermain	6,694	LF	$ 26.00	$ 174,044.00
I-2	12" Gate Valve & Valve Box	8	EA	$ 1,700.00	$ 13,600.00
I-3	8" SDR-18 PVC Watermain	-	LF	$ 18.00	$ -
I-4	8" Gate Valve and Box	-	EA	$ 900.00	$ -
I-5	Hydrant Assembly	11	EA	$ 2,800.00	$ 30,800.00
I-6	2" Blow-Off Assembly	1	EA	$ 700.00	$ 700.00
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing	-	LS	$ 2,000.00	$ -
I-10	Sampling Manhole, Complete	-	LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)	200	SF	$ 1.75	$ 350.00
I-12	Granular Backfill Within Road Limits	-	CY	$ 20.00	$ -
I-13	Asphalt Pavement Replacement	100	LF	$ 30.00	$ 3,000.00
I-14	Gravel/Stone Pavement Replacement	100	LF	$ 6.00	$ 600.00
I-15	Non-Traffic Restoration	6,494	LF	$ 2.00	$ 12,988.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 4,900.00	$ 4,900.00
I-17	Field Office	1	MOS.	$ 750.00	$ 750.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	8	EA	$ 250.00	$ 2,000.00
I-19	Road Boring	-	LS	$ 20,000.00	$ -
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
				SUBTOTAL BASE BID ITEMS	**$ 245,232.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	27	CY	$ 25.00	$ 675.00
IC-2	Rock Excavation	11	CY	$ 150.00	$ 1,650.00
IC-3	#2 Crusher Run Stone AOBE	19	CY	$ 20.00	$ 380.00
IC-4	1" Tapping Saddle & Corporation for Water Service	10	EA	$ 200.00	$ 2,000.00
IC-5	1" Curb Stop & Box	10	EA	$ 200.00	$ 2,000.00
IC-6	1" Copper Water Service Tubing	500	LF	$ 11.00	$ 5,500.00
IC-7	Water Service Restoration	10	EA	$ 150.00	$ 1,500.00
				SUBTOTAL CONDITIONAL BID ITEMS	**$ 13,705.00**
				TOTAL BASE & CONDITIONAL BID ITEMS	**$ 258,937.00**

Area No: B-7-A4
Located in Town of: Butler
Located On: Whiskey Hill Rd
Located Between: Livingston Rd to Smith Rd
Total Number of Units: 16

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
BASE BID ITEMS:					
I-1	12" SDR-18 PVC Watermain	4,160	LF	$ 26.00	$ 108,160.00
I-2	12" Gate Valve & Valve Box	5	EA	$ 1,700.00	$ 8,500.00
I-3	8" SDR-18 PVC Watermain		LF	$ 18.00	$ -
I-4	8" Gate Valve and Box	-	EA	$ 900.00	$ -
I-5	Hydrant Assembly	7	EA	$ 2,800.00	$ 19,600.00
I-6	2" Blow-Off Assembly	1	EA	$ 700.00	$ 700.00
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing	-	LS	$ 2,000.00	$ -
I-10	Sampling Manhole, Complete	-	LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)	-	SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	25	CY	$ 20.00	$ 500.00
I-13	Asphalt Pavement Replacement	160	LF	$ 30.00	$ 4,800.00
I-14	Gravel/Stone Pavement Replacement	120	LF	$ 6.00	$ 720.00
I-15	Non-Traffic Restoration	3,880	LF	$ 2.00	$ 7,760.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 3,500.00	$ 3,500.00
I-17	Field Office	1	MOS.	$ 750.00	$ 750.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	5	EA	$ 250.00	$ 1,250.00
I-19	Road Boring	1	LS	$ 20,000.00	$ 20,000.00
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
				SUBTOTAL BASE BID ITEMS	**$ 177,740.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	17	CY	$ 25.00	$ 425.00
IC-2	Rock Excavation	7	CY	$ 150.00	$ 1,050.00
IC-3	#2 Crusher Run Stone AOBE	12	CY	$ 20.00	$ 240.00
IC-4	1" Tapping Saddle & Corporation for Water Service	16	EA	$ 200.00	$ 3,200.00
IC-5	1" Curb Stop & Box	16	EA	$ 200.00	$ 3,200.00
IC-6	1" Copper Water Service Tubing	800	LF	$ 11.00	$ 8,800.00
IC-7	Water Service Restoration	16	EA	$ 150.00	$ 2,400.00
				SUBTOTAL CONDITIONAL BID ITEMS	**$ 19,315.00**
				TOTAL BASE & CONDITIONAL BID ITEMS	**$ 197,055.00**

Area No: B-8-A4
Located in Town of: Butler
Located On: Whiskey Hill Rd
Located Between: Smith Road to NYS Rte 104
Total Number of Units: 22

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
BASE BID ITEMS:					
I-1	12" SDR-18 PVC Watermain	6,532	LF	$ 26.00	$ 169,832.00
I-2	12" Gate Valve & Valve Box	8	EA	$ 1,700.00	$ 13,600.00
I-3	8" SDR-18 PVC Watermain	-	LF	$ 18.00	$ -
I-4	8" Gate Valve and Box	-	EA	$ 900.00	$ -
I-5	Hydrant Assembly	11	EA	$ 2,800.00	$ 30,800.00
I-6	2" Blow-Off Assembly	1	EA	$ 700.00	$ 700.00
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing	1	LS	$ 2,000.00	$ 2,000.00
I-10	Sampling Manhole, Complete	1	LS	$ 5,000.00	$ 5,000.00
I-11	Shoulder Replacement (Crusher Run)	-	SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	25	CY	$ 20.00	$ 500.00
I-13	Asphalt Pavement Replacement	280	LF	$ 30.00	$ 8,400.00
I-14	Gravel/Stone Pavement Replacement	240	LF	$ 6.00	$ 1,440.00
I-15	Non-Traffic Restoration	6,012	LF	$ 2.00	$ 12,024.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 5,000.00	$ 5,000.00
I-17	Field Office	1	MOS.	$ 750.00	$ 750.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	8	EA	$ 250.00	$ 2,000.00
I-19	Road Boring	-	LS	$ 20,000.00	$ -
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
				SUBTOTAL BASE BID ITEMS	**$ 253,546.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	26	CY	$ 25.00	$ 650.00
IC-2	Rock Excavation	11	CY	$ 150.00	$ 1,650.00
IC-3	#2 Crusher Run Stone AOBE	19	CY	$ 20.00	$ 380.00
IC-4	1" Tapping Saddle & Corporation for Water Service	22	EA	$ 200.00	$ 4,400.00
IC-5	1" Curb Stop & Box	22	EA	$ 200.00	$ 4,400.00
IC-6	1" Copper Water Service Tubing	1,100	LF	$ 11.00	$ 12,100.00
IC-7	Water Service Restoration	22	EA	$ 150.00	$ 3,300.00
				SUBTOTAL CONDITIONAL BID ITEMS	**$ 26,880.00**
				TOTAL BASE & CONDITIONAL BID ITEMS	**$ 280,426.00**

Area No: B-9-A4
Located in Town of: Butler
Located On: Rte 104
Located Between: Ridge Rd to Whiskey Hill
Total Number of Units: 0

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
BASE BID ITEMS:					
I-1	12" SDR-18 PVC Watermain	11,500	LF	$ 26.00	$ 299,000.00
I-2	12" Gate Valve & Valve Box	14	EA	$ 1,700.00	$ 23,800.00
I-3	8" SDR-18 PVC Watermain		LF	$ 18.00	$ -
I-4	8" Gate Valve and Box	-	EA	$ 900.00	$ -
I-5	Hydrant Assembly	19	EA	$ 2,800.00	$ 53,200.00
I-6	2" Blow-Off Assembly	1	EA	$ 700.00	$ 700.00
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	1	LS	$ 35,000.00	$ 35,000.00
I-9	Creek Crossing	-	LS	$ 2,000.00	$ -
I-10	Sampling Manhole, Complete	-	LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)	-	SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	50	CY	$ 20.00	$ 1,000.00
I-13	Asphalt Pavement Replacement	100	LF	$ 30.00	$ 3,000.00
I-14	Gravel/Stone Pavement Replacement	100	LF	$ 6.00	$ 600.00
I-15	Non-Traffic Restoration	11,300	LF	$ 2.00	$ 22,600.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 9,400.00	$ 9,400.00
I-17	Field Office	2	MOS.	$ 750.00	$ 1,500.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	14	EA	$ 250.00	$ 3,500.00
I-19	Road Boring	1	LS	$ 20,000.00	$ 20,000.00
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
			SUBTOTAL BASE BID ITEMS		**$ 474,800.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	46	CY	$ 25.00	$ 1,150.00
IC-2	Rock Excavation	19	CY	$ 150.00	$ 2,850.00
IC-3	#2 Crusher Run Stone AOBE	33	CY	$ 20.00	$ 660.00
IC-4	1" Tapping Saddle & Corporation for Water Service	-	EA	$ 200.00	$ -
IC-5	1" Curb Stop & Box	-	EA	$ 200.00	$ -
IC-6	1" Copper Water Service Tubing	-	LF	$ 11.00	$ -
IC-7	Water Service Restoration	-	EA	$ 150.00	$ -
			SUBTOTAL CONDITIONAL BID ITEMS		**$ 4,660.00**
			TOTAL BASE & CONDITIONAL BID ITEMS		**$ 479,460.00**

Area No: B-10-A4
Located in Town of: Butler
Located On: Rte 104
Located Between: Whiskey to Butler Town Line
Total Number of Units: 2

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
BASE BID ITEMS:					
I-1	12" SDR-18 PVC Watermain	4,550	LF	$ 26.00	$ 118,300.00
I-2	12" Gate Valve & Valve Box	6	EA	$ 1,700.00	$ 10,200.00
I-3	8" SDR-18 PVC Watermain	-	LF	$ 18.00	$ -
I-4	8" Gate Valve and Box	-	EA	$ 900.00	$ -
I-5	Hydrant Assembly	8	EA	$ 2,800.00	$ 22,400.00
I-6	2" Blow-Off Assembly	1	EA	$ 700.00	$ 700.00
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing	-	LS	$ 2,000.00	$ -
I-10	Sampling Manhole, Complete	-	LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)	-	SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	100	CY	$ 20.00	$ 2,000.00
I-13	Asphalt Pavement Replacement	100	LF	$ 30.00	$ 3,000.00
I-14	Gravel/Stone Pavement Replacement	100	LF	$ 6.00	$ 600.00
I-15	Non-Traffic Restoration	4,350	LF	$ 2.00	$ 8,700.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 3,850.00	$ 3,850.00
I-17	Field Office	1	MOS.	$ 750.00	$ 750.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	6	EA	$ 250.00	$ 1,500.00
I-19	Road Boring	1	LS	$ 20,000.00	$ 20,000.00
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
			SUBTOTAL BASE BID ITEMS		**$ 193,500.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	18	CY	$ 25.00	$ 450.00
IC-2	Rock Excavation	8	CY	$ 150.00	$ 1,200.00
IC-3	#2 Crusher Run Stone AOBE	13	CY	$ 20.00	$ 260.00
IC-4	1" Tapping Saddle & Corporation for Water Service	2	EA	$ 200.00	$ 400.00
IC-5	1" Curb Stop & Box	2	EA	$ 200.00	$ 400.00
IC-6	1" Copper Water Service Tubing	100	LF	$ 11.00	$ 1,100.00
IC-7	Water Service Restoration	2	EA	$ 150.00	$ 300.00
			SUBTOTAL CONDITIONAL BID ITEMS		**$ 4,110.00**
			TOTAL BASE & CONDITIONAL BID ITEMS		**$ 197,610.00**

Area No: B-1 Dist.
Located in Town of: Butler
Located On: S Butler - Conquest
Located Between: In Hamlet of S. Butler
Total Number of Units: 24

BASE BID ITEMS:					
Item No.	**Item Description:**	**Quantity**	**Unit**	**Unit Price**	**Total**
I-1	12" SDR-18 PVC Watermain		LF	$ 26.00	$ -
I-2	12" Gate Valve & Valve Box	-	EA	$ 1,700.00	$ -
I-3	8" SDR-18 PVC Watermain	1,250	LF	$ 18.00	$ 22,500.00
I-4	8" Gate Valve and Box	2	EA	$ 900.00	$ 1,800.00
I-5	Hydrant Assembly	2	EA	$ 2,800.00	$ 5,600.00
I-6	2" Blow-Off Assembly	1	EA	$ 700.00	$ 700.00
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing	-	LS	$ 2,000.00	$ -
I-10	Sampling Manhole, Complete	-	LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)	300	SF	$ 1.75	$ 525.00
I-12	Granular Backfill Within Road Limits	100	CY	$ 20.00	$ 2,000.00
I-13	Asphalt Pavement Replacement	500	LF	$ 30.00	$ 15,000.00
I-14	Gravel/Stone Pavement Replacement	120	LF	$ 6.00	$ 720.00
I-15	Non-Traffic Restoration	630	LF	$ 2.00	$ 1,260.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 1,400.00	$ 1,400.00
I-17	Field Office	-	MOS.	$ 750.00	$ -
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	2	EA	$ 250.00	$ 500.00
I-19	Road Boring	1	LS	$ 20,000.00	$ 20,000.00
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
				SUBTOTAL BASE BID ITEMS	**$ 73,505.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	5	CY	$ 25.00	$ 125.00
IC-2	Rock Excavation	2	CY	$ 150.00	$ 300.00
IC-3	#2 Crusher Run Stone AOBE	4	CY	$ 20.00	$ 80.00
IC-4	1" Tapping Saddle & Corporation for Water Service	24	EA	$ 200.00	$ 4,800.00
IC-5	1" Curb Stop & Box	24	EA	$ 200.00	$ 4,800.00
IC-6	1" Copper Water Service Tubing	1,200	LF	$ 11.00	$ 13,200.00
IC-7	Water Service Restoration	24	EA	$ 150.00	$ 3,600.00
				SUBTOTAL CONDITIONAL BID ITEMS	**$ 26,905.00**
				TOTAL BASE & CONDITIONAL BID ITEMS	**$ 100,410.00**

Area No: B-2 Dist
Located in Town of: Butler
Located On: Whiskey Hill Rd
Located Between: Paylor Rd to Livingstston
Total Number of Units: 16

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
BASE BID ITEMS:					
I-1	12" SDR-18 PVC Watermain	-	LF	$ 26.00	$ -
I-2	12" Gate Valve & Valve Box	-	EA	$ 1,700.00	$ -
I-3	8" SDR-18 PVC Watermain	6,074	LF	$ 18.00	$ 109,332.00
I-4	8" Gate Valve and Box	8	EA	$ 900.00	$ 7,200.00
I-5	Hydrant Assembly	10	EA	$ 2,800.00	$ 28,000.00
I-6	2" Blow-Off Assembly	1	EA	$ 700.00	$ 700.00
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing	-	LS	$ 2,000.00	$ -
I-10	Sampling Manhole, Complete	-	LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)	-	SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	50	CY	$ 20.00	$ 1,000.00
I-13	Asphalt Pavement Replacement	270	LF	$ 30.00	$ 8,100.00
I-14	Gravel/Stone Pavement Replacement	170	LF	$ 6.00	$ 1,020.00
I-15	Non-Traffic Restoration	5,634	LF	$ 2.00	$ 11,268.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 3,800.00	$ 3,800.00
I-17	Field Office	1	MOS.	$ 750.00	$ 750.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	8	EA	$ 250.00	$ 2,000.00
I-19	Road Boring	1	LS	$ 20,000.00	$ 20,000.00
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
				SUBTOTAL BASE BID ITEMS	**$ 194,670.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	24	CY	$ 25.00	$ 600.00
IC-2	Rock Excavation	10	CY	$ 150.00	$ 1,500.00
IC-3	#2 Crusher Run Stone AOBE	17	CY	$ 20.00	$ 340.00
IC-4	1" Tapping Saddle & Corporation for Water Service	16	EA	$ 200.00	$ 3,200.00
IC-5	1" Curb Stop & Box	16	EA	$ 200.00	$ 3,200.00
IC-6	1" Copper Water Service Tubing	800	LF	$ 11.00	$ 8,800.00
IC-7	Water Service Restoration	16	EA	$ 150.00	$ 2,400.00
				SUBTOTAL CONDITIONAL BID ITEMS	**$ 20,040.00**
				TOTAL BASE & CONDITIONAL BID ITEMS	**$ 214,710.00**

Area No: B-3 Dist
Located in Town of: Butler
Located On: Spring Green
Located Between: Ridge Rd to Wolcott Rd
Total Number of Units: 22

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
BASE BID ITEMS:					
I-1	12" SDR-18 PVC Watermain		LF	$ 26.00	$ -
I-2	12" Gate Valve & Valve Box	-	EA	$ 1,700.00	$ -
I-3	8" SDR-18 PVC Watermain	12,500	LF	$ 18.00	$ 225,000.00
I-4	8" Gate Valve and Box	16	EA	$ 900.00	$ 14,400.00
I-5	Hydrant Assembly	21	EA	$ 2,800.00	$ 58,800.00
I-6	2" Blow-Off Assembly	1	EA	$ 700.00	$ 700.00
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	1	LS	$ 35,000.00	$ 35,000.00
I-9	Creek Crossing	1	LS	$ 2,000.00	$ 2,000.00
I-10	Sampling Manhole, Complete	1	LS	$ 5,000.00	$ 5,000.00
I-11	Shoulder Replacement (Crusher Run)	-	SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	-	CY	$ 20.00	$ -
I-13	Asphalt Pavement Replacement	250	LF	$ 30.00	$ 7,500.00
I-14	Gravel/Stone Pavement Replacement	270	LF	$ 6.00	$ 1,620.00
I-15	Non-Traffic Restoration	11,980	LF	$ 2.00	$ 23,960.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 8,100.00	$ 8,100.00
I-17	Field Office	3	MOS.	$ 750.00	$ 2,250.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	16	EA	$ 250.00	$ 4,000.00
I-19	Road Boring	1	LS	$ 20,000.00	$ 20,000.00
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
				SUBTOTAL BASE BID ITEMS	**$ 409,830.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	50	CY	$ 25.00	$ 1,250.00
IC-2	Rock Excavation	21	CY	$ 150.00	$ 3,150.00
IC-3	#2 Crusher Run Stone AOBE	36	CY	$ 20.00	$ 720.00
IC-4	1" Tapping Saddle & Corporation for Water Service	22	EA	$ 200.00	$ 4,400.00
IC-5	1" Curb Stop & Box	22	EA	$ 200.00	$ 4,400.00
IC-6	1" Copper Water Service Tubing	1,100	LF	$ 11.00	$ 12,100.00
IC-7	Water Service Restoration	22	EA	$ 150.00	$ 3,300.00
				SUBTOTAL CONDITIONAL BID ITEMS	**$ 29,320.00**
				TOTAL BASE & CONDITIONAL BID ITEMS	**$ 439,150.00**

Area No: B-4 Dist
Located in Town of: Butler
Located On: Wolcott Springs
Located Between: Rte 104 to Spring Green
Total Number of Units: 6

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
BASE BID ITEMS:					
I-1	12" SDR-18 PVC Watermain	-	LF	$ 26.00	$ -
I-2	12" Gate Valve & Valve Box	-	EA	$ 1,700.00	$ -
I-3	8" SDR-18 PVC Watermain	13,000	LF	$ 18.00	$ 234,000.00
I-4	8" Gate Valve and Box	16	EA	$ 900.00	$ 14,400.00
I-5	Hydrant Assembly	22	EA	$ 2,800.00	$ 61,600.00
I-6	2" Blow-Off Assembly	1	EA	$ 700.00	$ 700.00
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing	-	LS	$ 2,000.00	$ -
I-10	Sampling Manhole, Complete	-	LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)	-	SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	-	CY	$ 20.00	$ -
I-13	Asphalt Pavement Replacement	120	LF	$ 30.00	$ 3,600.00
I-14	Gravel/Stone Pavement Replacement	60	LF	$ 6.00	$ 360.00
I-15	Non-Traffic Restoration	12,820	LF	$ 2.00	$ 25,640.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 7,500.00	$ 7,500.00
I-17	Field Office	3	MOS.	$ 750.00	$ 2,250.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	16	EA	$ 250.00	$ 4,000.00
I-19	Road Boring	1	LS	$ 20,000.00	$ 20,000.00
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
				SUBTOTAL BASE BID ITEMS	**$ 375,550.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	52	CY	$ 25.00	$ 1,300.00
IC-2	Rock Excavation	22	CY	$ 150.00	$ 3,300.00
IC-3	#2 Crusher Run Stone AOBE	37	CY	$ 20.00	$ 740.00
IC-4	1" Tapping Saddle & Corporation for Water Service	6	EA	$ 200.00	$ 1,200.00
IC-5	1" Curb Stop & Box	6	EA	$ 200.00	$ 1,200.00
IC-6	1" Copper Water Service Tubing	300	LF	$ 11.00	$ 3,300.00
IC-7	Water Service Restoration	6	EA	$ 150.00	$ 900.00
				SUBTOTAL CONDITIONAL BID ITEMS	**$ 11,940.00**
				TOTAL BASE & CONDITIONAL BID ITEMS	**$ 387,490.00**

Area No: B-6 Dist
Located in Town of: Butler
Located On: Limekiln
Located Between: Limekiln to Rose TL
Total Number of Units: 7

BASE BID ITEMS:

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
I-1	12" SDR-18 PVC Watermain	-	LF	$ 26.00	$ -
I-2	12" Gate Valve & Valve Box	-	EA	$ 1,700.00	$ -
I-3	8" SDR-18 PVC Watermain	7,000	LF	$ 18.00	$ 126,000.00
I-4	8" Gate Valve and Box	9	EA	$ 900.00	$ 8,100.00
I-5	Hydrant Assembly	12	EA	$ 2,800.00	$ 33,600.00
I-6	2" Blow-Off Assembly	1	EA	$ 700.00	$ 700.00
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing	1	LS	$ 2,000.00	$ 2,000.00
I-10	Sampling Manhole, Complete	1	LS	$ 5,000.00	$ 5,000.00
I-11	Shoulder Replacement (Crusher Run)	-	SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	50	CY	$ 20.00	$ 1,000.00
I-13	Asphalt Pavement Replacement	120	LF	$ 30.00	$ 3,600.00
I-14	Gravel/Stone Pavement Replacement	170	LF	$ 6.00	$ 1,020.00
I-15	Non-Traffic Restoration	6,710	LF	$ 2.00	$ 13,420.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 4,400.00	$ 4,400.00
I-17	Field Office	1	MOS.	$ 750.00	$ 750.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	9	EA	$ 250.00	$ 2,250.00
I-19	Road Boring	1	LS	$ 20,000.00	$ 20,000.00
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
				SUBTOTAL BASE BID ITEMS	**$ 223,340.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	28	CY	$ 25.00	$ 700.00
IC-2	Rock Excavation	12	CY	$ 150.00	$ 1,800.00
IC-3	#2 Crusher Run Stone AOBE	20	CY	$ 20.00	$ 400.00
IC-4	1" Tapping Saddle & Corporation for Water Service	7	EA	$ 200.00	$ 1,400.00
IC-5	1" Curb Stop & Box	7	EA	$ 200.00	$ 1,400.00
IC-6	1" Copper Water Service Tubing	350	LF	$ 11.00	$ 3,850.00
IC-7	Water Service Restoration	7	EA	$ 150.00	$ 1,050.00
				SUBTOTAL CONDITIONAL BID ITEMS	**$ 10,600.00**
				TOTAL BASE & CONDITIONAL BID ITEMS	**$ 233,940.00**

APPENDIX E

ROSE CONSTRUCTION COST ESTIMATES

Area No: R-1-A3
Located in Town of: Rose
Located On: NYS Rte 414
Located Between: Galen TL to Rose Hamlet
Total Number of Units: 27

BASE BID ITEMS:					
Item No.	**Item Description:**	**Quantity**	**Unit**	**Unit Price**	**Total**
I-1	12" SDR-18 PVC Watermain	8,850	LF	$ 26.00	$ 230,100.00
I-2	12" Gate Valve & Valve Box	11	EA	$ 1,700.00	$ 18,700.00
I-3	8" SDR-18 PVC Watermain	-	LF	$ 18.00	$ -
I-4	8" Gate Valve and Box	-	EA	$ 900.00	$ -
I-5	Hydrant Assembly	15	EA	$ 2,800.00	$ 42,000.00
I-6	2" Blow-Off Assembly	-	EA	$ 700.00	$ -
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	1	LS	$ 35,000.00	$ 35,000.00
I-9	Creek Crossing	1	LS	$ 2,000.00	$ 2,000.00
I-10	Sampling Manhole, Complete	1	LS	$ 5,000.00	$ 5,000.00
I-11	Shoulder Replacement (Crusher Run)		SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	50	CY	$ 20.00	$ 1,000.00
I-13	Asphalt Pavement Replacement	300	LF	$ 30.00	$ 9,000.00
I-14	Gravel/Stone Pavement Replacement	240	LF	$ 6.00	$ 1,440.00
I-15	Non-Traffic Restoration	8,310	LF	$ 2.00	$ 16,620.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 7,400.00	$ 7,400.00
I-17	Field Office	2	MOS.	$ 750.00	$ 1,500.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	11	EA	$ 250.00	$ 2,750.00
I-19	Road Boring	-	LS	$ 20,000.00	$ -
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
				SUBTOTAL BASE BID ITEMS	**$ 374,010.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	35	CY	$ 25.00	$ 875.00
IC-2	Rock Excavation	15	CY	$ 150.00	$ 2,250.00
IC-3	#2 Crusher Run Stone AOBE	25	CY	$ 20.00	$ 500.00
IC-4	1" Tapping Saddle & Corporation for Water Service	27	EA	$ 200.00	$ 5,400.00
IC-5	1" Curb Stop & Box	27	EA	$ 200.00	$ 5,400.00
IC-6	1" Copper Water Service Tubing	1,350	LF	$ 11.00	$ 14,850.00
IC-7	Water Service Restoration	27	EA	$ 150.00	$ 4,050.00
				SUBTOTAL CONDITIONAL BID ITEMS	**$ 33,325.00**
				VILLAGE OF CLYDE IMPROVEMENTS	**$ 76,648.13**
				TOTAL BASE & CONDITIONAL BID ITEMS	**$ 483,983.13**

Area No:	**R-1 Dist.**
Located in Town of:	**Rose**
Located On:	**Wayne Center Road**
Located Between:	**Ackerman Rd to Hamlet**
Total Number of Units:	**36**

BASE BID ITEMS:					
Item No.	**Item Description:**	**Quantity**	**Unit**	**Unit Price**	**Total**
I-1	12" SDR-18 PVC Watermain	-	LF	$ 26.00	$ -
I-2	12" Gate Valve & Valve Box	-	EA	$ 1,700.00	$ -
I-3	8" SDR-18 PVC Watermain	19,000	LF	$ 18.00	$ 342,000.00
I-4	8" Gate Valve and Box	24	EA	$ 900.00	$ 21,600.00
I-5	Hydrant Assembly	32	EA	$ 2,800.00	$ 89,600.00
I-6	2" Blow-Off Assembly	1	EA	$ 700.00	$ 700.00
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing	1	LS	$ 2,000.00	$ 2,000.00
I-10	Sampling Manhole, Complete	1	LS	$ 5,000.00	$ 5,000.00
I-11	Shoulder Replacement (Crusher Run)	-	SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	50	CY	$ 20.00	$ 1,000.00
I-13	Asphalt Pavement Replacement	400	LF	$ 30.00	$ 12,000.00
I-14	Gravel/Stone Pavement Replacement	360	LF	$ 6.00	$ 2,160.00
I-15	Non-Traffic Restoration	18,240	LF	$ 2.00	$ 36,480.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 10,500.00	$ 10,500.00
I-17	Field Office	4	MOS.	$ 750.00	$ 3,000.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	24	EA	$ 250.00	$ 6,000.00
I-19	Road Boring	-	LS	$ 20,000.00	$ -
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
				SUBTOTAL BASE BID ITEMS	**$ 533,540.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	76	CY	$ 25.00	$ 1,900.00
IC-2	Rock Excavation	32	CY	$ 150.00	$ 4,800.00
IC-3	#2 Crusher Run Stone AOBE	54	CY	$ 20.00	$ 1,080.00
IC-4	1" Tapping Saddle & Corporation for Water Service	36	EA	$ 200.00	$ 7,200.00
IC-5	1" Curb Stop & Box	36	EA	$ 200.00	$ 7,200.00
IC-6	1" Copper Water Service Tubing	1,800	LF	$ 11.00	$ 19,800.00
IC-7	Water Service Restoration	36	EA	$ 150.00	$ 5,400.00
				SUBTOTAL CONDITIONAL BID ITEMS	**$ 47,380.00**
				TOTAL BASE & CONDITIONAL BID ITEMS	**$ 580,920.00**

Area No: R-2 Dist.
Located in Town of: Rose
Located On: Covell Rd
Located Between: Wayne Center to Miner
Total Number of Units: 14

BASE BID ITEMS:					
Item No.	**Item Description:**	**Quantity**	**Unit**	**Unit Price**	**Total**
I-1	12" SDR-18 PVC Watermain	-	LF	$ 26.00	$ -
I-2	12" Gate Valve & Valve Box	-	EA	$ 1,700.00	$ -
I-3	8" SDR-18 PVC Watermain	5,930	LF	$ 18.00	$ 106,740.00
I-4	8" Gate Valve and Box	7	EA	$ 900.00	$ 6,300.00
I-5	Hydrant Assembly	10	EA	$ 2,800.00	$ 28,000.00
I-6	2" Blow-Off Assembly	-	EA	$ 700.00	$ -
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing	-	LS	$ 2,000.00	$ -
I-10	Sampling Manhole, Complete	-	LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)	-	SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	25	CY	$ 20.00	$ 500.00
I-13	Asphalt Pavement Replacement	90	LF	$ 30.00	$ 2,700.00
I-14	Gravel/Stone Pavement Replacement	160	LF	$ 6.00	$ 960.00
I-15	Non-Traffic Restoration	5,680	LF	$ 2.00	$ 11,360.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 3,200.00	$ 3,200.00
I-17	Field Office	1	MOS.	$ 750.00	$ 750.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	7	EA	$ 250.00	$ 1,750.00
I-19	Road Boring	-	LS	$ 20,000.00	$ -
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
				SUBTOTAL BASE BID ITEMS	**$ 163,760.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	24	CY	$ 25.00	$ 600.00
IC-2	Rock Excavation	10	CY	$ 150.00	$ 1,500.00
IC-3	#2 Crusher Run Stone AOBE	17	CY	$ 20.00	$ 340.00
IC-4	1" Tapping Saddle & Corporation for Water Service	14	EA	$ 200.00	$ 2,800.00
IC-5	1" Curb Stop & Box	14	EA	$ 200.00	$ 2,800.00
IC-6	1" Copper Water Service Tubing	700	LF	$ 11.00	$ 7,700.00
IC-7	Water Service Restoration	14	EA	$ 150.00	$ 2,100.00
				SUBTOTAL CONDITIONAL BID ITEMS	**$ 17,840.00**
				TOTAL BASE & CONDITIONAL BID ITEMS	**$ 181,600.00**

Area No: R-3 Dist.
Located in Town of: Rose
Located On: High St
Located Between: Wayne Center to Catchpole
Total Number of Units: 19

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
BASE BID ITEMS:					
I-1	12" SDR-18 PVC Watermain	-	LF	$ 26.00	$ -
I-2	12" Gate Valve & Valve Box	-	EA	$ 1,700.00	$ -
I-3	8" SDR-18 PVC Watermain	7,500	LF	$ 18.00	$ 135,000.00
I-4	8" Gate Valve and Box	9	EA	$ 900.00	$ 8,100.00
I-5	Hydrant Assembly	13	EA	$ 2,800.00	$ 36,400.00
I-6	2" Blow-Off Assembly	-	EA	$ 700.00	$ -
I-7	Connect to Existing Watermain	-	EA	$ 1,500.00	$ -
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing	-	LS	$ 2,000.00	$ -
I-10	Sampling Manhole, Complete	-	LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)	200	SF	$ 1.75	$ 350.00
I-12	Granular Backfill Within Road Limits	25	CY	$ 20.00	$ 500.00
I-13	Asphalt Pavement Replacement	40	LF	$ 30.00	$ 1,200.00
I-14	Gravel/Stone Pavement Replacement	400	LF	$ 6.00	$ 2,400.00
I-15	Non-Traffic Restoration	7,060	LF	$ 2.00	$ 14,120.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 4,100.00	$ 4,100.00
I-17	Field Office	2	MOS.	$ 750.00	$ 1,500.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	9	EA	$ 250.00	$ 2,250.00
I-19	Road Boring	-	LS	$ 20,000.00	$ -
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
			SUBTOTAL BASE BID ITEMS		**$ 205,920.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	30	CY	$ 25.00	$ 750.00
IC-2	Rock Excavation	13	CY	$ 150.00	$ 1,950.00
IC-3	#2 Crusher Run Stone AOBE	21	CY	$ 20.00	$ 420.00
IC-4	1" Tapping Saddle & Corporation for Water Service	19	EA	$ 200.00	$ 3,800.00
IC-5	1" Curb Stop & Box	19	EA	$ 200.00	$ 3,800.00
IC-6	1" Copper Water Service Tubing	950	LF	$ 11.00	$ 10,450.00
IC-7	Water Service Restoration	19	EA	$ 150.00	$ 2,850.00
	SUBTOTAL CONDITIONAL BID ITEMS				**$ 24,020.00**
	TOTAL BASE & CONDITIONAL BID ITEMS				**$ 229,940.00**

Area No: R-4 Dist.
Located in Town of: Rose
Located On: Wayne Center and Catch Pole
Located Between: Ackerman to Garlic
Total Number of Units: 17

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
BASE BID ITEMS:					
I-1	12" SDR-18 PVC Watermain	-	LF	$ 26.00	$ -
I-2	12" Gate Valve & Valve Box	-	EA	$ 1,700.00	$ -
I-3	8" SDR-18 PVC Watermain	9,567	LF	$ 18.00	$ 172,206.00
I-4	8" Gate Valve and Box	12	EA	$ 900.00	$ 10,800.00
I-5	Hydrant Assembly	16	EA	$ 2,800.00	$ 44,800.00
I-6	2" Blow-Off Assembly	-	EA	$ 700.00	$ -
I-7	Connect to Existing Watermain	-	EA	$ 1,500.00	$ -
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing	-	LS	$ 2,000.00	$ -
I-10	Sampling Manhole, Complete	-	LS	$ 5,000.00	$ -
I-11	Shoulder Replacement (Crusher Run)	-	SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	25	CY	$ 20.00	$ 500.00
I-13	Asphalt Pavement Replacement	160	LF	$ 30.00	$ 4,800.00
I-14	Gravel/Stone Pavement Replacement	140	LF	$ 6.00	$ 840.00
I-15	Non-Traffic Restoration	9,267	LF	$ 2.00	$ 18,534.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 5,200.00	$ 5,200.00
I-17	Field Office	2	MOS.	$ 750.00	$ 1,500.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	12	EA	$ 250.00	$ 3,000.00
I-19	Road Boring	-	LS	$ 20,000.00	$ -
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
			SUBTOTAL BASE BID ITEMS		**$ 262,180.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	38	CY	$ 25.00	$ 950.00
IC-2	Rock Excavation	16	CY	$ 150.00	$ 2,400.00
IC-3	#2 Crusher Run Stone AOBE	27	CY	$ 20.00	$ 540.00
IC-4	1" Tapping Saddle & Corporation for Water Service	17	EA	$ 200.00	$ 3,400.00
IC-5	1" Curb Stop & Box	17	EA	$ 200.00	$ 3,400.00
IC-6	1" Copper Water Service Tubing	850	LF	$ 11.00	$ 9,350.00
IC-7	Water Service Restoration	17	EA	$ 150.00	$ 2,550.00
	SUBTOTAL CONDITIONAL BID ITEMS				**$ 22,590.00**
	TOTAL BASE & CONDITIONAL BID ITEMS				**$ 284,770.00**

Area No: R-5 Dist.
Located in Town of: Rose
Located On: Catchpole
Located Between: Covell to Garlic
Total Number of Units: 27

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
BASE BID ITEMS:					
I-1	12" SDR-18 PVC Watermain	-	LF	$ 26.00	$ -
I-2	12" Gate Valve & Valve Box	-	EA	$ 1,700.00	$ -
I-3	8" SDR-18 PVC Watermain	10,300	LF	$ 18.00	$ 185,400.00
I-4	8" Gate Valve and Box	13	EA	$ 900.00	$ 11,700.00
I-5	Hydrant Assembly	17	EA	$ 2,800.00	$ 47,600.00
I-6	2" Blow-Off Assembly	-	EA	$ 700.00	$ -
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing	1	LS	$ 2,000.00	$ 2,000.00
I-10	Sampling Manhole, Complete	1	LS	$ 5,000.00	$ 5,000.00
I-11	Shoulder Replacement (Crusher Run)	200	SF	$ 1.75	$ 350.00
I-12	Granular Backfill Within Road Limits	25	CY	$ 20.00	$ 500.00
I-13	Asphalt Pavement Replacement	80	LF	$ 30.00	$ 2,400.00
I-14	Gravel/Stone Pavement Replacement	280	LF	$ 6.00	$ 1,680.00
I-15	Non-Traffic Restoration	9,940	LF	$ 2.00	$ 19,880.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 5,700.00	$ 5,700.00
I-17	Field Office	2	MOS.	$ 750.00	$ 1,500.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	13	EA	$ 250.00	$ 3,250.00
I-19	Road Boring	-	LS	$ 20,000.00	$ -
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
				SUBTOTAL BASE BID ITEMS	**$ 288,460.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	41	CY	$ 25.00	$ 1,025.00
IC-2	Rock Excavation	17	CY	$ 150.00	$ 2,550.00
IC-3	#2 Crusher Run Stone AOBE	29	CY	$ 20.00	$ 580.00
IC-4	1" Tapping Saddle & Corporation for Water Service	27	EA	$ 200.00	$ 5,400.00
IC-5	1" Curb Stop & Box	27	EA	$ 200.00	$ 5,400.00
IC-6	1" Copper Water Service Tubing	1,350	LF	$ 11.00	$ 14,850.00
IC-7	Water Service Restoration	27	EA	$ 150.00	$ 4,050.00
				SUBTOTAL CONDITIONAL BID ITEMS	**$ 33,855.00**
				TOTAL BASE & CONDITIONAL BID ITEMS	**$ 322,315.00**

Area No: R-6 Dist.
Located in Town of: Rose
Located On: Brick School House
Located Between: Catchpole and Glenmark
Total Number of Units: 19

BASE BID ITEMS:					
Item No.	**Item Description:**	**Quantity**	**Unit**	**Unit Price**	**Total**
I-1	12" SDR-18 PVC Watermain	-	LF	$ 26.00	$ -
I-2	12" Gate Valve & Valve Box	-	EA	$ 1,700.00	$ -
I-3	8" SDR-18 PVC Watermain	5,135	LF	$ 18.00	$ 92,430.00
I-4	8" Gate Valve and Box	6	EA	$ 900.00	$ 5,400.00
I-5	Hydrant Assembly	9	EA	$ 2,800.00	$ 25,200.00
I-6	2" Blow-Off Assembly	-	EA	$ 700.00	$ -
I-7	Connect to Existing Watermain	-	EA	$ 1,500.00	$ -
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing	1	LS	$ 2,000.00	$ 2,000.00
I-10	Sampling Manhole, Complete	1	LS	$ 5,000.00	$ 5,000.00
I-11	Shoulder Replacement (Crusher Run)	-	SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	-	CY	$ 20.00	$ -
I-13	Asphalt Pavement Replacement	40	LF	$ 30.00	$ 1,200.00
I-14	Gravel/Stone Pavement Replacement	120	LF	$ 6.00	$ 720.00
I-15	Non-Traffic Restoration	4,975	LF	$ 2.00	$ 9,950.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 3,400.00	$ 3,400.00
I-17	Field Office	1	MOS.	$ 750.00	$ 750.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	6	EA	$ 250.00	$ 1,500.00
I-19	Road Boring	-	LS	$ 20,000.00	$ -
I-20	RR Boring	1	LS	$ 25,000.00	$ 25,000.00
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
				SUBTOTAL BASE BID ITEMS	**$ 172,550.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	21	CY	$ 25.00	$ 525.00
IC-2	Rock Excavation	9	CY	$ 150.00	$ 1,350.00
IC-3	#2 Crusher Run Stone AOBE	15	CY	$ 20.00	$ 300.00
IC-4	1" Tapping Saddle & Corporation for Water Service	19	EA	$ 200.00	$ 3,800.00
IC-5	1" Curb Stop & Box	19	EA	$ 200.00	$ 3,800.00
IC-6	1" Copper Water Service Tubing	950	LF	$ 11.00	$ 10,450.00
IC-7	Water Service Restoration	19	EA	$ 150.00	$ 2,850.00
				SUBTOTAL CONDITIONAL BID ITEMS	**$ 23,075.00**
				TOTAL BASE & CONDITIONAL BID ITEMS	**$ 195,625.00**

Area No: R-7 Dist.
Located in Town of: Rose
Located On: Glenmark
Located Between: Brick School House and Covell
Total Number of Units: 24

Item No.	Item Description:	Quantity	Unit	Unit Price	Total
BASE BID ITEMS:					
I-1	12" SDR-18 PVC Watermain	-	LF	$ 26.00	$ -
I-2	12" Gate Valve & Valve Box	-	EA	$ 1,700.00	$ -
I-3	8" SDR-18 PVC Watermain	10,735	LF	$ 18.00	$ 193,230.00
I-4	8" Gate Valve and Box	13	EA	$ 900.00	$ 11,700.00
I-5	Hydrant Assembly	18	EA	$ 2,800.00	$ 50,400.00
I-6	2" Blow-Off Assembly	-	EA	$ 700.00	$ -
I-7	Connect to Existing Watermain	1	EA	$ 1,500.00	$ 1,500.00
I-8	Meter/PRV Vault	-	LS	$ 35,000.00	$ -
I-9	Creek Crossing	1	LS	$ 2,000.00	$ 2,000.00
I-10	Sampling Manhole, Complete	1	LS	$ 5,000.00	$ 5,000.00
I-11	Shoulder Replacement (Crusher Run)	-	SF	$ 1.75	$ -
I-12	Granular Backfill Within Road Limits	-	CY	$ 20.00	$ -
I-13	Asphalt Pavement Replacement	120	LF	$ 30.00	$ 3,600.00
I-14	Gravel/Stone Pavement Replacement	120	LF	$ 6.00	$ 720.00
I-15	Non-Traffic Restoration	10,495	LF	$ 2.00	$ 20,990.00
I-16	Maintenance & Protection of Traffic	1	LS	$ 5,900.00	$ 5,900.00
I-17	Field Office	2	MOS.	$ 750.00	$ 1,500.00
I-18	1" Tapping Saddle & Corporation for Testing/Disinfection	13	EA	$ 250.00	$ 3,250.00
I-19	Road Boring	-	LS	$ 20,000.00	$ -
I-20	RR Boring	-	LS	$ 25,000.00	$ -
I-21	Canal Boring/River Boring	-	LS	$ 30,000.00	$ -
I-22	Pump Station	-	LS	$ -	$ -
				SUBTOTAL BASE BID ITEMS	**$ 299,790.00**
CONDITIONAL BID ITEMS:					
IC-1	#1 & #2 Stone for Unstable Trench Bottom	43	CY	$ 25.00	$ 1,075.00
IC-2	Rock Excavation	18	CY	$ 150.00	$ 2,700.00
IC-3	#2 Crusher Run Stone AOBE	31	CY	$ 20.00	$ 620.00
IC-4	1" Tapping Saddle & Corporation for Water Service	24	EA	$ 200.00	$ 4,800.00
IC-5	1" Curb Stop & Box	24	EA	$ 200.00	$ 4,800.00
IC-6	1" Copper Water Service Tubing	1,200	LF	$ 11.00	$ 13,200.00
IC-7	Water Service Restoration	24	EA	$ 150.00	$ 3,600.00
				SUBTOTAL CONDITIONAL BID ITEMS	**$ 30,795.00**
				TOTAL BASE & CONDITIONAL BID ITEMS	**$ 330,585.00**

APPENDIX F

TRANSMISSION CORRIDOR PROJECT COST ESTIMATES

Water main Location	From Road to Road	Estimate Tab Location	Located in Town	Homes Served (EDUs)	Estimated Construction Cost	10% Project Contingency	25% Legal, Admin, Survey, Engineering, Bidding and Observation	Total estimated Project Cost
Debusse, Emmel, Lembke, & Fairville	Maple Street Road to Fairville Station Rd	L-1-A2	Lyons	26	$ 733,085.00	$ 73,308.50	$ 183,271.25	**$ 989,664.75**
Cross Country	Maple to Canal	L-3-A2	Lyons	0	$ 38,260.00	$ 3,826.00	$ 9,565.00	**$ 51,651.00**
Pilgrimport Rd	Warncke to N. Canal St Extension	L-6-A2	Lyons	5	$ 140,470.00	$ 14,047.00	$ 35,117.50	**$ 189,634.50**
Pilgrimport and Bishop Rd	Travell Knapps to Warncke Rd	L-7-A2	Lyons	12	$ 132,325.00	$ 13,232.50	$ 33,081.25	**$ 178,638.75**
Travell Knapps Corner Rd	Pilgrimport Rd to Galen TL	L-8-A2	Lyons	4	$ 74,650.00	$ 7,465.00	$ 18,662.50	**$ 100,777.50**
Rte 31	Clyde VL to Galen TL	L-10-A1	Lyons	10	$ 222,338.90	$ 22,233.89	$ 55,584.73	**$ 300,157.52**
Travell Knapps Corners Rd	Gannett Rd to High Street	G-2-A2	Galen	14	$ 160,150.00	$ 16,015.00	$ 40,037.50	**$ 216,202.50**
Travell Knapps Corners Rd	High Street to Kelsey Rd	G-3-A2	Galen	14	$ 192,600.00	$ 19,260.00	$ 48,150.00	**$ 260,010.00**
Kelsy Road	Lake Crnr-Rose Valley Rd to NYS 414	G-4-A2	Galen	13	$ 526,750.00	$ 52,675.00	$ 131,687.50	**$ 711,112.50**
Kelsey	Rte 414 to Shepard	G-5-A2	Galen	25	$ 322,310.00	$ 32,231.00	$ 80,577.50	**$ 435,118.50**
Rte 414	Clyde VL to Rose TL	G-7-A3	Galen	45	$ 659,961.88	$ 65,996.19	$ 164,990.47	**$ 890,948.53**
Old Rte 31 / Storms	Sunderville to Lock Berlin	G-8-A1	Galen	28	$ 581,007.93	$ 58,100.79	$ 145,251.98	**$ 784,360.70**
Old Rte 31	Lock Berlin to Gannett Rd	G-9-A1	Galen	29	$ 300,869.82	$ 30,086.98	$ 75,217.45	**$ 406,174.25**
Old Rte 31	Gannett Rd to High Street	G-10-A1	Galen	5	$ 186,446.95	$ 18,644.70	$ 46,611.74	**$ 251,703.38**
Old Rte 31	High Street to 4100' east	G-11-A1	Galen	5	$ 216,886.95	$ 21,688.70	$ 54,221.74	**$ 292,797.38**
Old Rte 31	Lake Corners - Rose Valley to 4700' west	G-12-A1	Galen	5	$ 219,496.95	$ 21,949.70	$ 54,874.24	**$ 296,320.88**
NYS Rte 31	Clyde Village Line to Savannah TL	G-13-A1	Galen	25	$ 630,620.00	$ 63,062.00	$ 157,655.00	**$ 851,337.00**
NYS Rte 31	Savannah TL to Messner Rd	S-1-A1	Savannah	16	$ 494,173.67	$ 49,417.37	$ 123,543.42	**$ 667,134.45**

Water main Location	From Road to Road	Estimate Tab Location	Located in Town	Homes Served (EDUs)	Estimated Construction Cost	10% Project Contingency	25% Legal, Admin, Survey, Engineering, Bidding and Observation	Total estimated Project Cost
Messner	Grand Ave to NYS 31	S-2-A1	Savannah	3	$ 154,021.00	$ 15,402.10	$ 38,505.25	**$ 207,928.35**
NYS Rte 31	Messner to 4000' east	S-3-A1	Savannah	1	$ 117,518.67	$ 11,751.87	$ 29,379.67	**$ 158,650.20**
NYS Rte 31	Severence Rd to Armitage Rd.	S-3-A4	Savannah	23	$ 504,385.00	$ 50,438.50	$ 126,096.25	**$ 680,919.75**
NYS 89 and Cotton	Bixby Wood Rd to Intersection of Cotton/Rte 89	S-4-A4	Savannah	15	$ 477,925.00	$ 47,792.50	$ 119,481.25	**$ 645,198.75**
Rte 89	Cotton Rd to Butler TL	S-5-A4	Savannah	30	$ 284,391.00	$ 28,439.10	$ 71,097.75	**$ 383,927.85**
S Butler and Rural	In Hamlet of S. Butler	B-2-A2	Butler	30	$ 137,230.00	$ 13,723.00	$ 34,307.50	**$ 185,260.50**
NYS Rte 89	Savannah TL to Foster Mead Rd	B-3-A4	Butler	22	$ 193,018.00	$ 19,301.80	$ 48,254.50	**$ 260,574.30**
NYS Rte 89	Foster Mead Rd to Butler Center	B-4-A4	Butler	21	$ 354,775.00	$ 35,477.50	$ 88,693.75	**$ 478,946.25**
NYS Rte 89/Everhart	Butler Center to Livingston rd	B-5-A4	Butler	2	$ 254,140.00	$ 25,414.00	$ 63,535.00	**$ 343,089.00**
Livingston Road	Everhart to Whiskey Hill	B-6-A4	Butler	10	$ 258,937.00	$ 25,893.70	$ 64,734.25	**$ 349,564.95**
Whiskey Hill Rd	Livingston Rd to Smith Rd	B-7-A4	Butler	16	$ 197,055.00	$ 19,705.50	$ 49,263.75	**$ 266,024.25**
Whiskey Hill Rd	Smith Road to NYS Rte 104	B-8-A4	Butler	22	$ 280,426.00	$ 28,042.60	$ 70,106.50	**$ 378,575.10**
Rte 104	Ridge Rd to Whiskey Hill	B-9-A4	Butler	0	$ 479,460.00	$ 47,946.00	$ 119,865.00	**$ 647,271.00**
Rte 104	Whiskey to Butler Town Line	B-10-A4	Butler	2	$ 197,610.00	$ 19,761.00	$ 49,402.50	**$ 266,773.50**
NYS Rte 414	Galen TL to Rose Hamlet	R-1-A3	Rose	27	$ 483,983.13	$ 48,398.31	$ 120,995.78	**$ 653,377.22**

57		Town of Lyons	$ 1,810,524.02
208		Town of Galen	$ 5,396,085.64
88		Town of Savannah	$ 2,743,759.35
125		Town of Butler	$ 3,176,078.85
27		Town of Rose	$ 653,377.22
Total EDU's along distribution corridors 505		**Total Estimated Project Cost for**	**$ 13,779,825.08**

APPENDIX G

DISTRIBUTION CORRIDOR PROJECT COST ESTIMATES

Water main Location	From Road to Road	Estimate Tab Location	Located in Town	Homes Served (EDUs)	Estimated Construction Cost	10% Project Contingency	25% Legal, Admin, Survey, Engineering, Bidding and Observation	Total estimated Project Cost
Maple Street & Bastian Rd	Village and Debusse Rd	L-1 Dist.	Lyons	21	$ 385,455.00	$ 38,545.50	$ 96,363.75	**$ 520,364.25**
Sohn Alloway Road & Rte 14	Village to Westphal Parkway	L-2 Dist.	Lyons	51	$ 717,950.00	$ 71,795.00	$ 179,487.50	**$ 969,232.50**
Pilgrimport Rd	Travell Knapps to North	L-3 Dist.	Lyons	31	$ 186,765.00	$ 18,676.50	$ 46,691.25	**$ 252,132.75**
Maple Street	Debusse Rd to Lyons VL	L-4 dist	Lyons	13	$ 150,630.00	$ 15,063.00	$ 37,657.50	**$ 203,350.50**
Gannett Road	Old Rte 31 to Travell Knapps Corners Rd	G-1 Dist.	Galen	18	$ 415,987.50	$ 41,598.75	$ 103,996.88	**$ 561,583.13**
Marengo	V/Clyde to River Rd	G-2 Dist.	Galen	13	$ 165,325.00	$ 16,532.50	$ 41,331.25	**$ 223,188.75**
Jenkins	V/Clyde to Watson Rd	G-3 Dist.	Galen	19	$ 395,975.00	$ 39,597.50	$ 98,993.75	**$ 534,566.25**
Welch	V/Clyde to Daboll Road	G-4 Dist.	Galen	7	$ 483,875.00	$ 48,387.50	$ 120,968.75	**$ 653,231.25**
High	Travell Knapps Corners Rd to Rte 31	G-5 Dist.	Galen	19	$ 403,255.00	$ 40,325.50	$ 100,813.75	**$ 544,394.25**
Stokes	Gannett to Rte 31	G-6 Dist.	Galen	11	$ 182,910.00	$ 18,291.00	$ 45,727.50	**$ 246,928.50**
Powers	Elm to Kelsey	G-7 Dist.	Galen	11	$ 234,695.00	$ 23,469.50	$ 58,673.75	**$ 316,838.25**
Highland Fruit Farm Rd	Lock Berlin to Lyons TL	G-8 Dist.	Galen	14	$ 404,320.00	$ 40,432.00	$ 101,080.00	**$ 545,832.00**
S Butler - Conquest	In Hamlet of S. Butler	B-1 Dist.	Butler	24	$ 100,410.00	$ 10,041.00	$ 25,102.50	**$ 135,553.50**
Whiskey Hill Rd	Paylor Rd to Livingstston	B-2 Dist	Butler	16	$ 214,710.00	$ 21,471.00	$ 53,677.50	**$ 289,858.50**
Spring Green	Ridge Rd to Wolcott Rd	B-3 Dist	Butler	22	$ 439,150.00	$ 43,915.00	$ 109,787.50	**$ 592,852.50**
Wolcott Springs	Rte 104 to Spring Green	B-4 Dist	Butler	6	$ 387,490.00	$ 38,749.00	$ 96,872.50	**$ 523,111.50**
Limekiln	Limekiln to Rose TL	B-6 Dist	Butler	7	$ 233,940.00	$ 23,394.00	$ 58,485.00	**$ 315,819.00**

Water main Location	From Road to Road	Estimate Tab Location	Located in Town	Homes Served (EDUs)	Estimated Construction Cost	10% Project Contingency	25% Legal, Admin, Survey, Engineering, Bidding and Observation	Total estimated Project Cost
Wayne Center Road	Ackerman Rd to Hamlet	R-1 Dist.	Rose	36	$ 580,920.00	$ 58,092.00	$ 145,230.00	**$ 784,242.00**
Covell Rd	Wayne Center to Miner	R-2 Dist.	Rose	14	$ 181,600.00	$ 18,160.00	$ 45,400.00	**$ 245,160.00**
High St	Wayne Center to Catchpole	R-3 Dist.	Rose	19	$ 229,940.00	$ 22,994.00	$ 57,485.00	**$ 310,419.00**
Wayne Center and Catch Pole	Ackerman to Garlic	R-4 Dist.	Rose	17	$ 284,770.00	$ 28,477.00	$ 71,192.50	**$ 384,439.50**
Catchpole	Covell to Garlic	R-5 Dist.	Rose	27	$ 322,315.00	$ 32,231.50	$ 80,578.75	**$ 435,125.25**
Brick School House	Catchpole and Glenmark	R-6 Dist.	Rose	19	$ 195,625.00	$ 19,562.50	$ 48,906.25	**$ 264,093.75**
Glenmark	Brick School House and Covell	R-7 Dist.	Rose	24	$ 330,585.00	$ 33,058.50	$ 82,646.25	**$ 446,289.75**

116 EDUs	Town of Lyons	$	1,945,080.00
112 EDUs	Town of Galen	$	3,626,562.38
00 EDUs	Town ofSavannah	$	-
75 EDUs	Town of Butler	$	1,857,195.00
156 EDUs	Town of Rose	$	2,869,769.25
Total EDU's along distribution corridors 459 EDUs	**Total Estimated Project Cost for**	**$**	**10,298,606.63**

APPENDIX H

EXAMPLE INTER-MUNICIPAL AGREEMENT

AGREEMENT REGARDING THE CONSTRUCTION OF WATER IMPROVEMENTS

This Agreement is made and entered into effective the 1ST day of May, 2006, by and among the **Town of Huron**, a municipal corporation with its principal offices located at 10880 Lummisville Road, Wolcott, New York 14590, on its own behalf and on behalf of the Water District No. 4 of the Town of Huron (hereinafter referred to as "Huron"); the **Town of Rose**, a municipal corporation with its principal offices located at 5074 North Main Street, North Rose, New York 14516, on its own behalf and on behalf of the Town of Rose Water District Extension No. 7 (hereinafter referred to as "Rose"); and the **Wayne County Water and Sewer Authority**, a public benefit corporation with offices located at 3377 Daansen Road, Walworth, New York 14568 (hereinafter referred to as the "Authority").

Recitals

WHEREAS, Huron, Rose and the Authority are participating in the proposed regional water improvement project along Ridge Road and Route 414 in the Towns of Huron and Rose; and

WHEREAS, the project consists of the installation of approximately 15,500 linear feet of 12-inch water main along Ridge Road and Route 414 and approximately 4,400 linear feet of 8-inch water main along Bay Shore Road in the Town of Huron (the "Huron Improvements"), and approximately 2,500 linear feet of 12-inch water main along Route 414 in the Town of Rose (the "Rose Improvements") (the Huron Improvements and Rose Improvements are collectively referred to as the "Project"), as set forth on the map attached as Exhibit A;

WHEREAS, the Authority has the statutory authority, pursuant to Section 1199-ee (24) of the New York Public Authorities Law, to enter into contracts with municipalities within Wayne County, to provide for the construction, maintenance and operation of water supply and distribution systems and facilities; and

WHEREAS, Huron and Rose each have the statutory authority, pursuant to Section 197-a of the New York Town Law, to enter into an agreement with a public water authority for the construction, development, extension and improvement of a water supply or distribution system for or on behalf of a town water district; and

WHEREAS, the parties desire to set forth certain of their responsibilities and obligations to each other with respect to the construction and financing of the Project, as set forth in this Agreement;

NOW THEREFORE, it is hereby mutually agreed as follows:

1. **Project Funding.** The parties agree and acknowledge that the funding for the Project will come from numerous sources. The total anticipated cost for the Project is $1,255,500 (attached as Exhibit B is a breakdown of the anticipated costs for the Project) ("Project Costs"), and the parties agree as follows with respect to the Project Costs:

1.1. ***EPA Grant.*** The Authority shall make available for the Project Costs the grant (the "EPA Grant") it received from the United States Environmental Protection Agency ("EPA") in the amount of $578,600 to fund the Authority's share of the Project. The Authority shall be responsible for submitting necessary documentation to EPA to draw down the EPA Grant.

1.2. ***Rural Development Loan.*** Huron shall make available for the Project Costs the proceeds of a loan from the United States Department of Agriculture (the "USDA Loan") in the amount of up to $427,300 to fund Huron's share of the Project. Huron shall issue, before the commencement of construction of the Project, a Bond Anticipation Note or Notes ("BAN") up to the full amount of the USDA loan, so that sufficient funds will be available to pay the Project Costs. The BAN proceeds shall be used first by Huron to reimburse Huron's General Fund for expenses previously incurred to create Water District No. 4, including but not limited to fees to file application documents with USDA as well as fees for professional services. Huron shall be responsible for submitting necessary documentation to USDA for the USDA loan. Huron shall be responsible for any and all costs associated with the USDA loan and its BAN, and shall be responsible for payment of the debt service thereon.

1.3. ***Rose Contribution.*** Rose shall contribute the amount of $49,600 for its share of the Project Cost so that its contribution is available before the commencement of construction of the Project.

1.4. ***Marshall Farms Group, Ltd. Contribution.*** Marshall Farms Group, Ltd., has agreed to contribute $100,000 to the Authority toward the Project Costs. Rose agrees to be responsible for insuring that the Authority has received the full contribution from Marshall Farms Group, Ltd. before the commencement of construction.

1.5. ***Wayne County Contribution.*** Wayne County, through its Industrial Development/Economic Development Fund, has agreed to contribute $100,000 to Huron toward the Project Costs, and Huron agrees that it will make such amount available to the Authority for Project Costs. Huron agrees to be responsible for insuring that the Authority has received the full contribution from Wayne County before the commencement of construction.

1.6. ***Authority as Holder and Disburser of Funds to Pay Project Costs.*** The parties acknowledge and agree that to the funds for Project Costs from the EPA Grant, Rose, Huron, Marshall Farms Group, Ltd., and Wayne County, shall be paid to the Authority, and the Authority shall be responsible for disbursing the funds to pay the Project Costs. The Authority agrees that it shall use the funds received only for the Project Costs.

1.7. ***Sodus Bay Bridge Crossing.*** The parties acknowledge that the Authority owns a water line that crosses Sodus Bay on and adjacent to the Sodus Bay Bridge, which the Authority had constructed as part of the rebuilding of the bridge (the "Bridge Line"). The parties acknowledge that the Bridge Line is part of the Project and the cost of the Bridge Line is included in the Project Costs. The Authority shall be reimbursed to cover the costs of construction of the Bridge Line as funds are available, but in no event later than completion of the construction of the Project. The Authority shall transfer ownership of the Bridge Line to Huron at completion of the construction of the Project, so long as the Authority has been reimbursed in full for the costs of construction of the Bridge Line.

1.8. ***Changes in Project Costs.*** In the event that the Project Costs are estimated to exceed the originally estimated amount of $1,255,500, whether as a result of an updated estimate or as a result of the bids for the construction of the Project, the Authority, Huron and Rose agree to use their best efforts to find funding for the excess costs in order to complete the Project.

2. **Engineering, Construction and Ownership.**

2.1. ***Engineering Contracts and Plans and Specifications.*** The Authority shall be primarily responsible for engaging the services of an engineering firm to design and oversee the construction of the Project (other than the Bridge Line), for the benefit of the Authority, Huron and Rose. The Authority shall comply with the requirements of the EPA Grant and USDA Loan, as well as applicable laws, in engaging the services of the engineering firm. The plans and specifications will be designed and constructed in accordance with the Authority's standard design and materials specifications for water line improvements. The Authority shall provide the plans and specifications for the Rose Improvements to the Rose Town Engineer for review and approval. If Rose desires to make any changes in the plans and specifications of the Rose Improvements to meet Rose's standards for design and materials, the Authority will use its best efforts to include the changes in the plans and specifications so long as Rose commits to pay any expenses or increased construction costs incurred as a result of Rose's changes, to the extent that the changes increase the costs of the Rose Improvements over the costs using the

Authority's standards. The Rose Town Engineer shall be deemed to have consented to the plans and specifications, or contract documents, as applicable, submitted to him if he does not respond within five (5) business days of receipt of the items for review.

2.2. ***Construction Contracts***. The Authority shall be responsible for obtaining necessary approvals and permits for the plans and specifications for construction of the Project. The Authority shall be responsible for contracting for the construction of the Project in accordance with applicable laws, including but not limited to competitive bidding requirements, and requirements of the EPA grant and USDA loan. The Authority will use its best efforts to have all warranties and guaranties given in connection with the construction of the Rose Improvements assignable to Rose at the time of transfer of the Rose Improvements, and to have all warranties and guaranties given in connection with the construction of the Huron Improvements assignable to Huron at the time of transfer of the Huron Improvements. The Authority shall be responsible for the administration of the construction contracts and paying the contractors from the funds available for the Project.

2.3. ***Ownership***. The parties agree that while the Authority shall administer the process of design and construction of the Project, based upon the contributions to Project Costs set forth herein, upon completion of the Project, the parties intend that ownership of the components of the Project will be as follows: Rose shall have title to the Rose Improvements, and Huron shall have title to the Huron Improvements, including the Bridge Line.

3. **Other Responsibilities of the Authority**. The Authority shall have the following additional responsibilities with respect to the Project:

3.1. Serve as the overall Project administrator and carry out the Project in accord with the program requirements established by the funding agencies.

3.2. Collect Project funds and disburse the funds to pay Project Costs.

3.3. Reimburse itself from the Project funds for other Project Costs previously incurred.

3.4. Serve as lead agency for NEPA review.

3.5. Coordinate project activities among the participants.

3.6. By separate agreement, enter into a lease for the Huron Improvements with Huron to provide the operation and maintenance of the Huron Improvements.

Laurie Crane

Laurie Crane, Town Board Member

Dated: 5/15/06, 2006

David ~~Smith~~ Busch, Town Board Member

Dated: 5/15/06, 2006

TOWN OF ROSE

By: Lucinda M. Collier
Lucinda Collier, Supervisor

Dated: 10/28, 2006

Scott J. Converse
Scott J. Converse, Town Board Member

Dated: 10-28, 2006

Tilton A. Sears
Tilton A. Sears, Town Board Member

Dated: 10-31, 2006

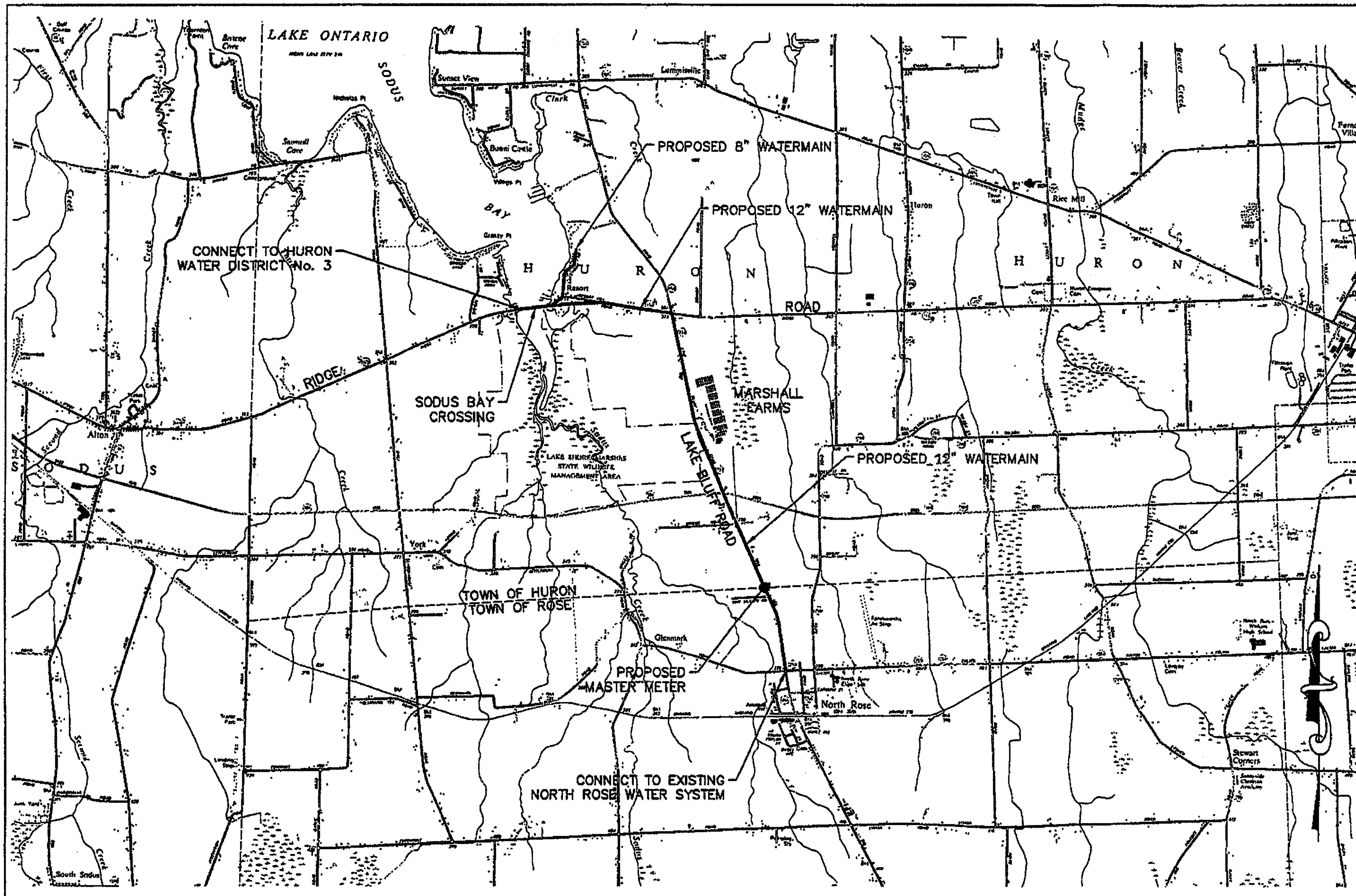
Edward F. Thiemann
Edward F. Thiemann Town Board Member

Dated: _____, 2006

_____
Charles H. Wilson, Town Board Member

Dated: _____, 2006

"Exhibit A"



MRB | group

Drawn By: JBB
Checked By: OMD
Scale: 1" = 3000'
Date: 11/2004

Project Title: TOWN OF HURON - TOWN OF ROSE WATER SUPPLY IMPROVEMENTS WAYNE COUNTY, NEW YORK

Drawing Title: FIGURE 1 - LOCATION MAP

No.	Revisions and Descriptions	By	Date

Sheet No. ___ of ___

Project No.

Exhibit B					
Project Costs					
BASE BID ITEMS:					**Total**
Item No.	**Item Description:**	**Qty**	**Unit**	**Unit Price**	**(Numerals)**
I-1	12" SDR-18 PVC Watermain	18,700	LF	$ 21.00	$ 392,700.00
I-2	12" Gate Valve & Valve Box	22	EA	$ 950.00	$ 20,900.00
I-3	8" SDR-18 PVC Watermain	4,400	LF	$ 15.00	$ 66,000.00
I-4	8" Gate Valve and Box	8	EA	$ 650.00	$ 5,200.00
I-5	Hydrant Unit, Including Anchor Tee,	39	EA	$ 2,000.00	$ 78,000.00
	6" Anchor Pipe, Valve & Valve Box				
I-6	Rte. 104 Boring	1	LS	$ 24,000.00	$ 24,000.00
I-7	Connect to Existing Watermain	2	EA	$ 1,000.00	$ 2,000.00
I-8	Meter Vault	1	LS	$ 30,000.00	$ 30,000.00
I-10	Bridge Crossing	1	LS	$ 200,000.00	$ 200,000.00
		(NEC)			
I-12	Shoulder Replacement	1,500	SF	$ 1.75	$ 2,625.00
	(24" No. Crusher Run)				
I-13	Granular Backfill Within Road Limits/Drwys.	1,400	CY	$ 18.00	$ 25,200.00
I-15	Asphalt Pavement Replacement	265	TONS	$ 100.00	$ 26,500.00
I-16	Gravel/Stone Pavement Replacement	1,900	SF	$ 1.00	$ 1,900.00
I-17	Non-Traffic Restoration	18,800	LF	$ 2.00	$ 37,600.00
I-18	Maintenance & Protection of Traffic	1	LS	$ 15,700.00	$ 15,700.00
		(NEC)			
I-19	Field Office	3.5	MOS.	$ 750.00	$ 2,625.00
I-20	1" Tapping Saddle & Corporation for	18	EA	$ 150.00	$ 2,700.00
	Testing/Disinfection				
	TOTAL				$ 933,650.00

Contigency	$ 83,374.95
Legal, Administration and Engineering	$ 238,412.50
PROJECT TOTAL	$ 1,255,500.00

**This construction cost estimate was prepared without the benefit of test holes or borings. Accordingly, no allowance has been made for bedrock removal/disposal, or unstable soil condtions.

Individual water service costs are not included as a capital cost, but would be paid for as a one time connection charge by the affected property owners.

3.7. By separate agreement, enter into supply agreements with Rose and the Town and Village of Sodus to provide sufficient water to serve the customers of the area served by the Huron Improvements.

4. **Other Responsibilities of Huron.** Huron shall have the following responsibilities with respect to the Project:

4.1. By separate agreement, enter into the lease for the Huron Improvements with the Authority.

4.2. Serve as lead agency for the SEQRA review of the project.

4.3 Accept ownership of the Huron Improvements upon completion of construction of the Project.

5. **Other Responsibilities of Rose.** Rose shall have the following responsibilities with respect to the Project:

5.1. Accept ownership of the Rose Improvements upon completion of construction of the Project and be responsible for operating and maintaining the Rose Improvements and providing service to customers served by such improvements at rates and/or fees set by Rose..

5.2. By separate agreement, enter into a water supply agreement with the Authority sufficient to supply Marshall Farms and the other incidental users along Route 414 between the Rose town line and Marshall Farms.

6. **Cooperation.** The parties agree to fully cooperate with each other to successfully complete the Project, and shall execute and deliver all other documents required, provide all necessary information, and take, or forebear from all actions as may be necessary or appropriate to achieve the purposes of this Agreement.

7. **Approvals.** Except as otherwise specifically provided herein, each party shall be responsible for securing any state or federal approvals necessary for the performance of its obligations under this Agreement.

8. **Miscellaneous.**

8.1. ***Assignment.*** This Agreement is assignable in whole or in part only with the prior written consent of the other parties, which shall not be unreasonably withheld.

8.2. ***Amendments.*** This Agreement may be amended or modified only by a subsequent written document executed by all parties hereto.

8.3. ***Counterparts.*** This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

8.4. ***Construction.*** No rule of construction shall be applied to construe any ambiguities in this Agreement against the drafter.

8.5. ***Authorization.*** Each party hereby represents and warrants to the other that its respective signatures set forth below have been and are on the date of this Agreement duly authorized by all necessary and appropriate corporate action to execute this Agreement.

IN WITNESS WHEREOF, the parties hereto have caused their corporate seals to be affixed hereto and this Agreement to be executed by its duly authorized officers as of the date first above written.

WAYNE COUNTY WATER
AND SEWER AUTHORITY

By: _____
Martin J. Anen, Executive Director

TOWN OF HURON

By: _____
John Young, Supervisor
Dated: 5/15/06, 2006

_____
David Smith, Town Board Member

Dated: 5/15/06, 2006

_____
Clay Bishop, Town Board Member

Dated: 5/15/06, 2006