

LAMSON ROAD WATER DISTRICT

Map, Plan and Report

Town of Lysander, Onondaga County, New York

5/7/2015

Final Revision Date of May 27, 2015

Lamson Road Water District

Town of Lysander, Onondaga County, New York

Map, Plan and Report

May 7, 2015

Prepared By:

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Town of Lysander Engineer

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1.0 Background and Authorization

The Lamson Road area is located in the northeastern section of the Town of Lysander. Currently, there are no public water facilities within the proposed service area. The residents obtain water using private groundwater wells. Many of the wells are reportedly unable to provide sufficient quantity and/or quality water. The Town conducted a well sampling program in September and October 2007. Numerous homes tested positive for iron-sulfur bacteria, total coliform and E. Coli.

Property owners in this area have expressed an interest in obtaining municipal water service. There have been attempts in the past to bring public water into the area, but they failed due to high user costs.

The Town Board on January 5, 2015 authorized the preparation of this map plan and report by resolution.

2.0 Proposed District Boundary

A map of the proposed district is included as figure 1, and a written description of the proposed district boundary is included as Appendix A. The proposed water district generally includes the parcels fronting Lamson Road from Pendergast Road to Dinglehole Road, the Northern end of Sixty Road and Smokey Hollow Road, Oswego Road from Church Road to County Line Road, Church Road from Oswego Road to Dinglehole Road and Runnymede Road from Lamson Road to Sourwood Drive.

3.0 Existing Facilities

3.1 Public Water

Currently, there are no public water facilities within the project area. The residents and businesses obtain water using private groundwater supplies.

According to residents, many of the individual wells are of unsatisfactory quality and yield insufficient volumes of water.

There are three (3) public water systems adjacent to the project area that could be extended. They are as follows:

- Onondaga County Water Authority (OCWA) facilities along Lamson Road (West Phoenix Water District)
- OCWA facilities along Route 48 at Hencle Boulevard (Route 48 Water District)
- OCWA facilities along Oswego Road at County Line Road (Granby Water District)

3.2 History

There have been attempts in the past to bring public water into the area, but they failed due to high user costs. The Town conducted a well sampling program along Lamson Road and Oswego Road in September and October of 2007. A total of 28 homes were sampled. Nine (9) homes (32%) tested positive for iron-sulfur bacteria, ten (10) homes (36%) tested positive for total coliform and two (2) homes (7%) tested positive for E. Coli.

4.0 Need for Project

The existing property owners currently obtain their water from privately owned wells on each property. The water table elevation in the area is generally shallow with many of the older homes in the proposed district relying on traditional shallow dug wells rather than modern drilled

wells for water supply. The shallow dug wells are susceptible to runoff contamination and little to no yield during periods of prolonged drought. In addition to the previously mentioned problems many of the newer drilled wells in the project area contain sulfur and iron sulfide bacteria. Residents have expressed an interest in receiving public water to alleviate these concerns and provide fire protection.

5.0 Alternative Considered

5.1 No Action Alternative

If public water supply does not become available in the proposed district area the existing homes and businesses will continue to depend on the existing private inadequate and possibly contaminated groundwater wells. Over time the existing wells will continue to deteriorate and ultimately require replacement or rehabilitation. When new wells are constructed on the properties there will be no guarantees of quality or yield and property owners may be required to drill in multiple locations on the property to find adequate water supply and water quality. This alternative continues to place the population of the proposed district area in jeopardy of the health and safety risks associated with inadequate contaminated wells similar to what is faced in third world countries.

5.2 Proposed Layout of Distribution System

The initial service area included in the petition, carried by the residents in the summer of 2014, was based on a proposed district boundary established by a map, plan and report prepared by Barton & Loguidice, P.C. in 2008. From there the results of the petition indicated several areas did not have public support for district formation and were eliminated from the proposed district boundary when the Town Board passed a resolution ordering preparation of this map, plan and report in February of 2015. These areas include Rabbit Lane, the Southern portion of Smokey Hollow Road, Kellogg Road and the Northern portion of the Chatam Woods Subdivision.

6.0 Proposed Project

6.1 Proposed Source

The Onondaga County Water Authority (OCWA) currently serves the majority of Town residents adjacent to the project area with water from Lake Ontario. OCWA purchases water from the Metropolitan Water Board (MWB). The water is filtered, chlorinated and treated with fluoride at the MWB treatment plant in the Town of Oswego. The water is then pumped to the South through a 54" transmission main to two (2) 30 million gallon terminal reservoir tanks in the Town of Clay in Onondaga County NY.

Three (3) locations were considered for connection to the existing OCWA water supply system including the Eastern end of the Lamson Road, Route 48 & Hencle Boulevard and Route 48 at County Line Road. All three (3) connection points will need to be utilized to meet the 750 gpm fire flow required by NFPA standards.

6.2 Proposed Water Distribution System

The proposed water distribution system as shown by Figure 1 would consist of approximately 63,500 feet of 8" Ductile Iron Water Main. Hydrants would be installed at intervals of 600', valves would be installed at a maximum interval of 800' and at all connections between mains.

Services will be provided for each existing developed parcel within the proposed district. Each service will be terminated with a curb box and curb stop at the property line. It will be the responsibility of the property owner to connect a lateral service line from the curb box to the residence. Properties which require a lateral service length of greater than 150' will be required to install a meter pit at the property line at the owner's expense. All property owners who connect to the water supply system will be required under county health code, to disconnect their private well supply from their plumbing system prior to connecting to the public water system.

6.3 Estimated Water Usage

The following table summarizes the properties within the proposed Lamson Road Water District.

Property Summary	
Type of Property	Number of Properties
Residential	277
Light Commercial	14
Developable Vacant Parcels (Not in Agricultural District)	78

The Average Daily Demand (ADD) of the proposed Lamson Road Water District has been estimated at 58,200 gallons per day (gpd). This estimate is based upon initial service connections of 277 residential properties and 14 light commercial users multiplied by 200 gpd per single family or light commercial user. Using a Maximum Daily Demand factor of 1.75 multiplied by the ADD, it is estimated that the MDD of the proposed Lamson Road Water District would be approximately 101,850 gpd.

Currently there are 78 vacant parcels (not in Agricultural District) along the proposed water mains within the proposed Lamson Road Water District that could be developed in the future. Assuming these parcels are developed as single family residences, and are connected to the proposed water service, the ADD would increase by approximately 15,600 gpd to a future ADD and an estimated MDD of 117450 gpd.

6.4 Hydraulic Analysis

A hydraulic computer model of the proposed Lamson Road Water District was developed using a computer software program entitled “Water CAD” by Bentley Inc. The

model includes connection points to the existing system modeled using the metropolitan water board reservoir average operating elevation of 602 feet. The computer model was used to project the system performance under an anticipated peak daily demand and fire flows available at a residual system pressure of 20psi.

The model results can be found in Appendix B of this report. These results indicate the system pressures with anticipated peak daily demand will be between 74 psi and 98 psi and that the available fire flows within the system will be between 1051 gpm and 3500 gpm while maintaining the minimum 20 psi pressure through the entire system. Note the available fire flow at minimum pressures exceed the NFPA standard for minimum fire flow of structures 30' to 100' apart by 301 gpm.

6.5 Construction Cost Estimate

The estimated probable cost of construction in 2016 is \$3,551,243 (see Appendix C). This capital cost would be bonded by the Town of Lysander on behalf of the proposed water district. The debt service on the bond would be covered by an annual charge against parcels fronting the water mains.

6.6 Project Financing

It is proposed that a special assessment system be utilized to charge each parcel fronting the water main on an equivalent dwelling unit (EDU) basis. A single family residence (i.e. one (1) EDU) in the proposed water district will be charged for 1.0 unit. A small commercial user consuming less than 73,000 gallons of water annually would also be charged for one (1) EDU. Larger commercial users would be assigned an additional unit for each 73,000 gallons consumed or part thereof. Developable vacant parcels, not in an agricultural district, would be charged ½ of an EDU. Using this method of assessment there are an estimated 330 EDU within the proposed water district.

All financing options will be considered by the Town, but at this time it is assumed that private financing will likely fund the project. An estimated interest rate of 4.25% for a 30 year financing period is projected for the project. The annuity factor for this term and rate is 0.0596. The estimated annual unit charge (first year debt service) would be \$642.

6.7 Estimated Water Purchase Cost

Each connected household would pay a quarterly water bill based on the current OCWA Residential Rate Schedule. For a typical EDU, usage of approximately 73,000 gallons per year, the annual cost of water is estimated at \$349.

6.8 Estimated Hydrant Maintenance Cost

OCWA currently charges the district an annual Hydrant Maintenance fee of \$61.61 per hydrant. It is estimated that 106 hydrants will be installed in the proposed district. This results in an estimated hydrant maintenance charge of \$20 per EDU.

6.9 Estimated Total Annual Cost per Single Family Residential User

The estimated first year total annual cost per single family residence will include the estimated debt service charge, hydrant maintenance charge and water purchase cost would be \$1011, see Appendix D. This is above the NYS Comptroller cost threshold for 2015 which would result in the project being subject to review and approval of the NYS Comptroller. It is estimated that this review would take an additional three (3) to six (6) months.

7.0 Recommendations to Proceed

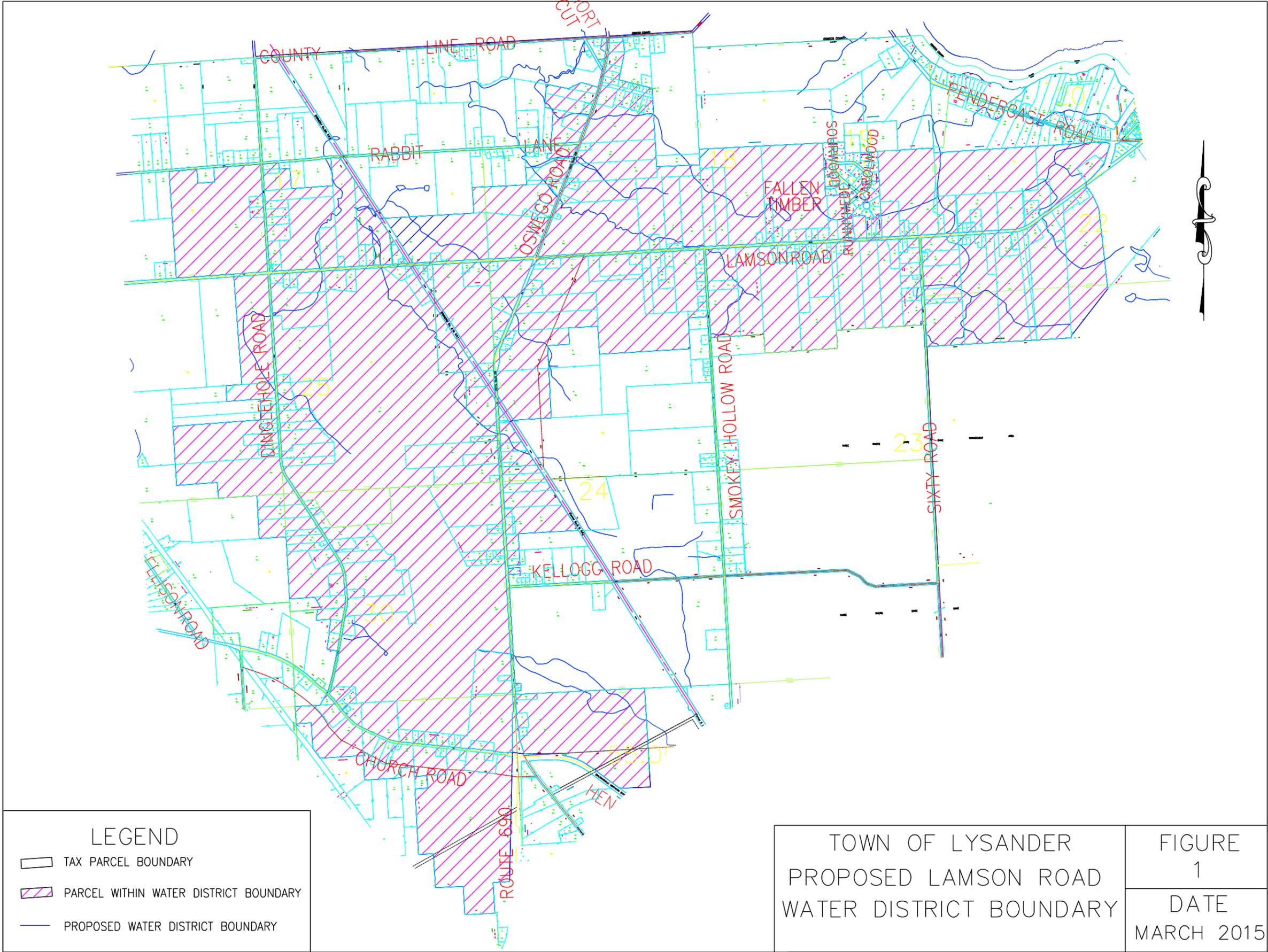
After acceptance of this draft map plan and report by the Lysander Town Board the Town Attorney will prepare a formal petition based on the adopted draft map plan and report to be carried by the residents in accordance with Article 12 of NYS Town Law. Once the petition is returned to the Town Board the board will need to schedule a public hearing and determine if all of the requirements for district formation under Article 12 of NYS Town Law have been met at that time the board could pass a resolution authorizing district formation which would not be subject to permissive referendum. The following steps will need to be completed prior to construction under Article 12 of New York State Town Law:

1. The Town Board will need to pass a resolution accepting the draft map plan and report for the proposed water district.
2. The Town attorney will need to prepare the petitions for the residents to carry.
3. The Residents will need to submit the petitions to the Board for review.
4. The Board will need to set a date for a public hearing.
5. Complete an environmental review to satisfy SEQR requirements.
6. The Board will need to pass a resolution authorizing the formation of the district subject to Audit and Control Review.
7. Submit map plan and report to NYS Comptroller for review.
8. Finalize district formation.
9. Prepare design plans and specifications.
10. Bid project.
11. Complete project bonding.
12. Award construction contract.
13. Start construction spring of 2016.

Figures

Figure 1

Proposed District Boundary



LEGEND	
	TAX PARCEL BOUNDARY
	PARCEL WITHIN WATER DISTRICT BOUNDARY
	PROPOSED WATER DISTRICT BOUNDARY

TOWN OF LYSANDER
 PROPOSED LAMSON ROAD
 WATER DISTRICT BOUNDARY

FIGURE
 1
 DATE
 MARCH 2015

Appendices

Appendix A

Written Boundary Description

Aldo Bonacchi, Casey A. and Rebecca L. Stock, Stephan Miklajcyk, Jack and Lana Herrman, Jeffrey S. and Stephenie R. Pyle, David E. and Rodney E. Thomas, Margaret T. Brzostek, Jefferie K. and Michelle Wilson, Michele K. Mills, Andrew D. and Josephine LeMay, Howard and Cindy Downing, Francis P., Jr. and Margaret A. Santulli, Robert W. and Orlene M. and Terry Lee Bettis and Kathryn L. Kulba, Michael A. Edick, William C. Shallcross

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LAMSON ROAD WATER DISTRICT

APRIL 9, 2015

598.8

SS

All that tract or parcel of land situate in the Town of Lysander, County of Onondaga and State of New York and being part of Lots 38, 39, 40, 41, 42,47, 48, 49, 50, 51, 56, 57, 58, 67 and 68 in said Town and being more particularly bounded and described as follows:

Beginning in the centerline of Rabbit Lane at the northwest corner of a parcel of land described in a deed to Aldo Bonacchi as recorded in the Onondaga County Clerk's Office in Book of Deeds 2432 at page 883 (herein after the grantee's name the book and page will be given Book/Page all of which are recorded in said Clerk's Office); thence easterly along said centerline to the northwest corner of a parcel of land described in a deed to Casey A. and Rebecca L. Stock at 5240/641; thence southerly along the west line of said Stock parcel to the southwest corner thereof; thence easterly along the south line of said parcel to the southeast corner thereof; thence northerly along the east line of said parcel to the northeast corner of said parcel and said centerline; thence easterly along said centerline to the northwest corner of a parcel of land described in a deed to Stephan Miklajcyk at 4727/53; thence southerly along the west line of said parcel to the southwest corner of said parcel; thence easterly along the south line of said parcel to the southeast corner of said parcel and the northeast corner of a parcel of land described in a deed to Jack and Lana Herrman at 2694/3; thence southerly along the east line of said parcel to the southeast corner of said parcel and the north line of a parcel of land described in a deed to Jeffrey S. and Stephenie R. Pyle at 4653/290; thence easterly along said north line to the northeast corner of said parcel and the west line of a parcel of land described in a deed to David E. and Rodney E. Thomas and the AE & EL Thomas Trust at 4130/226; thence northerly along said west line to the northwest corner of said parcel and the centerline of said road; thence easterly along said road to the westerly line of the CSX Railroad; thence southeasterly along said westerly line to its intersection with the westerly extension of the northerly line of lands described in a deed to Margaret T. Brzostek at 2124/23; thence easterly along said line to the southwest corner of a parcel of land described in a deed to Jefferie K. and Michelle Wilson at 4376/151; thence northerly along the west line of said parcel to the northwest corner of said parcel; thence easterly along said line to the southwest corner of a parcel of land described in a deed to Michele K. Mills at 3214/298; thence northerly along the west line of said parcel and the west line of a parcel land described in a deed to said Mills at 4096/77 to the northwest corner of said parcel; thence easterly and northeasterly along the north line of said parcel to the south line of a parcel described in a deed to Andrew D. and Josephine LeMay at 4969/830; thence westerly along said line to the southwest corner of said parcel; thence northerly, easterly, and northerly along the west, north and west lines of said parcel to the northwest corner of said parcel and the center of said road; thence along said road to the southwest corner of a parcel of land described in a deed to Howard and Cindy Downing at 4730/140; thence northerly along the west line of said parcel to the northwest corner of said parcel and the south line of a parcel of land described in a deed to Francis P., Jr. and Margaret A. Santulli at 3524/261; thence westerly along said south line to the southwest corner of said parcel; thence northerly along the west line of said parcel and the west line of a parcel of land described in a deed to Robert W. and Orlene M. and Terry Lee Bettis and Kathryn L. Kulba at 4387/265 to the northwest corner of said Bettis parcel; thence easterly along the north line of said parcel to the southwest corner of a second parcel of land described in a deed to Bettis at 4387/262; thence northeasterly along the northwesterly line of said parcel to the northwest corner of said parcel; thence easterly along the north line of said parcel to the northeast corner of said parcel and the centerline of NYS Route No. 48; thence northerly along said centerline to the centerline of Shortcut Road; thence northwesterly along said centerline to the northwest corner of a parcel of land described in a deed to Michael A. Edick at 4710/6; thence easterly along the north line of said parcel to the northeast corner of said parcel and the centerline of Route No. 48; thence northerly along said centerline to the southeast corner of a parcel of land described in a deed to William C. Shallcross at 4059/57; thence westerly along the south line of said parcel to the southwest corner of said parcel; thence northerly along the west line of said parcel to

William C. Shallcross

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the northwest corner of said parcel and the centerline of County Line Road and the north line of said Town; thence easterly along said centerline and Town line to the northeast corner of a parcel of land described in a deed to Jake M. Mills at 3709/349; thence southerly along the east line of said parcel and the east line of a parcel of land described in a deed to Ronald Marcus at 4966/110 and the east line of lands described in deeds to William, Jr. and Deborah A. Walberger at 3597/323; Brian and Ansel Walberger at 5216/479 and John A. Menzies and Loraine Sutcliffe at 3184/109 to the southeast corner of said Menzies/Sutcliffe parcel and the north line of the September Tract according to a map of said tract by Stephen Sehnert, Land Surveyor filed in the Onondaga County Clerk's Office as Map No. 5295; thence easterly along the north line of said tract to the northeast corner of said tract; thence southerly along the east line of said tract and the east line of parcels of land described in deeds to Peter D. and Mary E. Callard at 3254/320; Galvin Farms Gourmet, Mushroom Co., LLC at 4199/15 and David E. Hayes at 4155/266 to the most northerly northwest corner of a parcel of land described in a deed to Paul E. and Denise Lenowicz at 3642/37; thence easterly along the north line of said parcel to the northeast corner of said parcel and the west line of a parcel of land described in a deed to Frederick B. and Christine B. Leifheit at 2384/614; thence northerly along said west line to the northwest corner of said parcel; thence easterly along the north line of said parcel and the north line of a parcel of land described in a deed to Scott G. and Lisa L. Dunn at 5161/639 to northeast corner of said Dunn parcel; thence southerly along the east line of said Dunn parcel to a corner in said east line; thence easterly along a north line of said parcel and the north line of a parcel of land described in a deed to Corey and Jenna Baker at 5238/746 to the northeast corner of said parcel and the west line of Runnymede, Section A, according to a map filed in said Clerk's Office as Map No. 5731; thence to the northwest corner of Lot 34 of said tract; thence easterly along the northerly line of Lot 34 to the northeast corner of said lot; thence easterly to the northwest corner of Lot 35, Section B, Runnymede according to a map of said tract filed in said Clerk's Office as Map No. 5813; thence easterly along the north line of said Lot to the northeast corner of said Lot; thence easterly to the northwest corner of Lot 14, Runnymede, Section D according to a map of said tract filed in said Clerk's Office as Map No. 6743; thence easterly along the north line of said Lot to the northeast corner of said Lot and the west line of a parcel of land described in a deed to Patrick G. and Betty Murphy at 2153/644; thence northerly along said west line to the northwest corner of said parcel; thence easterly along the north line of said parcel to the northeast corner of said parcel and the west line of the Pendergast Road Water District; thence southerly along said west line to the southwest corner of said water district; thence easterly along the south line of said water district to its intersection with the northeast extension of the northwesterly boundary of Lamson Road (the relocated portion); thence westerly along said highway boundary to its intersection with the northerly extension of the east line of a parcel of land described in a deed to Corey J. Figueiredo at 4239/175; thence southerly along said extension and east line to the southeast corner of said parcel; thence southwesterly along the southeasterly line of said parcel to the southwest corner of said parcel and the east line of a parcel of land described in a deed to William R. and Jacob M. Considine at 5087/630; thence southerly along said east line to the southeast corner of said parcel and the north line of lands of the People of the State of New York, known as the Three Rivers Game Management Area; thence westerly, northerly, westerly, southerly and westerly along the north, east, north, west and north line of said lands to the southwest corner of a parcel of land described in a deed to Deanne R. Clary at 5222/188; thence northerly along the west line of said parcel to the southeast corner of a parcel of land described in a deed to Steven K. C. Alguire at 5306/319; thence westerly along the south line of said parcel and the south line of a parcel of land described in a deed to Mary Jane Storrings at 5204/195 to the centerline of Smokey Hollow Road; thence northerly along said centerline to the southeast corner of a parcel of land described in a deed to Timothy R. Raichin at 4968/161; thence westerly along the south line of said parcel to the southwest corner of said parcel and the east line of a parcel of land described in a deed to Mark Casales at 3439/201;

W.H. F.N. F.X.P. F.R.Q. F.N.E. F.M.A. J.J. F.R.S.

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thence southerly along said east line to the southeast corner of said parcel; thence westerly along the south line of said parcel to the southwest corner of said parcel thence northerly along the west line of said parcel to the southeast corner of a parcel of land described in a deed to Linda A. and Gary Newcombe at 4199/140; thence westerly along the south line of said parcel to the northeast corner of a parcel of land described in a deed to John A. and Georgia E Mosier at 3376/10x; thence southerly, westerly and southerly along the east, south and east line of said parcel and the east line of a parcel of land described in a deed to Henry S., Jr. and Mary Zaborowski at 5094/381 to the southeast corner of said Zaborowski parcel; thence westerly along the south line of said parcel and its westerly extension to the west line of said railroad; thence southerly along said railroad to the southeast corner of a parcel of land described in a deed to Mark and Angela Scalise at 5017/728; thence westerly along the south line of said parcel to the northeast corner of a parcel of land described in a deed to Tom N. and Bethany M. Warner at 4899/776; thence southerly along the east line of said parcel and lands described in deeds to Carole S. and Ronald K. Sollars at 2035/412 and Bryan and Carla Fleury at 3875/316 respectively to the southeast corner of said Fleury parcel; thence westerly along the south line of said parcel to the centerline of NYS Route No. 48; thence southerly along said centerline to the northwest corner of a parcel of land described in a deed to James W. and Donna M. Thompson at 4969/441; thence easterly, southerly and westerly along the north, east and south lines of said parcel to the centerline of said Route No. 48; thence southerly along said centerline to the northwest corner of a parcel of land described in a deed to Raymond D. Gilbert and Eileen Trina at 2960/35; thence easterly along the north line of said parcel to the northeast corner of said parcel; thence southerly along the east line of said parcel and the east line of a parcel of land described in a deed to Matthew J. Gilbert at 5227/924 to the southeast corner of said Gilbert parcel; thence westerly along the south line of said parcel to the southwest corner of said parcel and said centerline; thence southerly along said centerline to the north line of Lot 68; thence easterly along said north line to the northeast corner of a parcel of land described in a deed to Merle D. and Crandall Melvin and May Legg at 4182/275; thence southerly along the east line of said parcel and the east line of a parcel of land described in a deed to Kenneth C. and Kenneth I. Williams at 2627/686 to the southeast corner of said Williams parcel; thence westerly along the south line of said parcel to the northeasterly boundary of Hencle Boulevard; thence northwesterly along said line and across Route No. 690 to the west line of said highway; thence southerly along said west line to the southeast corner of a parcel of land described in a deed to Timber Tree, LLC at 4976/384; thence westerly, southerly, westerly, northerly, westerly, northerly, westerly, northerly along the south, east, south, west, south, west, south and west line of said parcel to the southwest corner of a parcel of land described in a deed to Unisite, LLC at 5116/321; thence easterly, northerly and westerly along the south, east and north lines of said parcel to northwest corner of said parcel and the east line of a parcel of land described in a deed to Alan R. Castle at 3700/224; thence northerly, westerly and southerly along the east, north and west lines of said parcel to the southeast corner of a parcel of land described in a deed to Alan Castle at 4875/831; thence westerly and northerly along the south and west line of said parcel to the southeast corner of a parcel of land described in a deed to Robert E., Sr. and Patricia E. Clarke at 4172/239; thence westerly, northwesterly, northerly, westerly, northerly and easterly along the south, southwesterly, west, south, west and north line of said parcel to the southwest corner of a parcel of land described in a deed to Jon E. and Theresa Parry Bick at 3490/112; thence northerly along the west line of said parcel to the centerline of Church Road; thence along said centerline to the centerline of Dinglehole Road; thence northerly along said centerline to the southeast corner of a parcel of land described in a deed to Gordon and Norma J. Rode at 3453/3; thence westerly and northerly along the south and west line of said parcel to the south line of a parcel of land described in a deed to Mark Windhausen and Strache Lydeen at 4112/263; thence westerly and northerly along the south and west line of said parcel to the south line of a parcel of land described in a deed to Roselea A. George at 5044/517; thence westerly and northerly along the south and west line of said parcel to the south line of a parcel of land described in a deed to Erich and Jean Tlaker at 5050/427; thence easterly along said south line to the southeast corner of said parcel; thence northerly along the east line of said parcel to the northeast corner of said parcel and the south line

WATER DISTRICT

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of a parcel of land described in a deed to Eva B. Maxam, Ralph A. and Jeanette M. Phelps at 5190/306; thence westerly along the said south line to the southwest corner of said parcel; thence northerly along the west line of said parcel and the west line of a parcel of land described in a deed to Danny and Mary Parrish at 3731/15 and the west line of a parcel of land described in a deed to Joanne and DRobert Neff at 4697/185 to the southeast corner of a parcel of land described in a deed to Robert and Patricia Geraci at 3085/315; thence westerly along the south line of said parcel to the southwest corner of said parcel; thence northerly along the west line of said parcel and the west line of a parcel of land described in a deed to Richard and Anna Enos at 3164/295 and along the west line of a parcel of land described in a deed to Lauren M. Rector and Brett A. Maring at 5309/788 to the northwest corner of said Rector/Maring parcel and the south line of a parcel of land described in a deed to James Stirushnik at 4871/874; thence westerly along said south line to the southwest corner of said parcel; thence northerly and westerly along the west and south lines of said parcel to a southwest corner of said parcel; thence northerly along a west line of said parcel and the west line a parcel of land described in a deed to Jon M. and Elizabeth A. Mosher at 3669/278 to the northwest corner of said Mosher parcel; thence easterly along the north line of said parcel and its easterly extension to a point on said south line south as measured at a right angle to said south line from the southwest corner of a parcel of land described in a deed to Carol E. Fitzpatrick at 4891/386; thence northerly along said line to said southwest corner and along the west line of said parcel and the west line of a parcel of land described in a deed to Stanley and Lauralee Farrar at 4118/249 to the northwest corner of said parcel and the south line of a parcel of land described in a deed to Anthony J. and Karen E. Grosso at 5141/221; thence westerly, northerly and easterly along the south, west and north line of said parcel to the southwest corner of a parcel of land described in a deed to the Estate of Douglas and Mary Blake at 2014/519; thence northerly along the west line of said parcel to the northwest corner of said parcel and the centerline of Lamson Road; thence westerly along said centerline to the southwest corner of said Bonacchi parcel; thence northerly along the west line of said parcel to the point of beginning.

Excepting from the above Lots 5, 6, 8 and 9, Section B, Runnymede, File Map No. 5813

W.H. F.N. F.X.P. F.R.Q. F.N.E. F.M.A.J.J. F.R.S.

Appendix B

Hydraulic Modeling



LEGEND

- PROPOSED WATER MAIN
- PROPOSED WATER DISTRICT BOUNDARY

TOWN OF LYSANDER

LAMSON ROAD WATER DISTRICT
WATER CAD MAP

ONONDAGA COUNTY

DATE
APRIL 2015
SCALE
1" = 2500'
SHEET
A-1

REVISIONS:

NO ALTERATION PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

Water CAD Pipe Report

ID	Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Has Check Valve?	Minor Loss C	Flow (gpm)	Velocity (ft/s)
37	P-2	453	J-3	J-4	8	Ductile Iron	120	FALSE	0	167	1.06
39	P-3	1725	J-4	J-5	8	Ductile Iron	120	FALSE	0	167	1.06
41	P-4	1116	J-5	J-6	8	Ductile Iron	120	FALSE	0	162	1.04
43	P-5	1511	J-6	J-7	8	Ductile Iron	120	FALSE	0	151	0.97
45	P-6	596	J-7	J-8	8	Ductile Iron	120	FALSE	0	123	0.78
47	P-7	1727	J-8	J-9	8	Ductile Iron	120	FALSE	0	83	0.53
49	P-8	3388	J-9	J-10	8	Ductile Iron	120	FALSE	0	26	0.17
51	P-9	1913	J-10	J-11	8	Ductile Iron	120	FALSE	0	-33	0.21
53	P-10	2080	J-11	J-12	8	Ductile Iron	120	FALSE	0	-53	0.34
55	P-11	2920	J-12	J-13	8	Ductile Iron	120	FALSE	0	95	0.61
57	P-12	2159	J-14	J-13	8	Ductile Iron	120	FALSE	0	-73	0.47
59	P-13	1289	J-14	J-15	8	Ductile Iron	120	FALSE	0	49	0.31
61	P-14	1041	J-15	J-16	8	Ductile Iron	120	FALSE	0	11	0.07
63	P-15	1571	J-17	J-16	8	Ductile Iron	120	FALSE	0	2	0.01
65	P-16	2002	J-17	J-18	8	Ductile Iron	120	FALSE	0	-8	0.05
67	P-17	2695	J-18	J-19	8	Ductile Iron	120	FALSE	0	-35	0.22
69	P-18	1642	J-19	J-20	8	Ductile Iron	120	FALSE	0	-63	0.4
71	P-19	1512	J-20	J-21	8	Ductile Iron	120	FALSE	0	-83	0.53
73	P-20	1033	J-21	J-22	8	Ductile Iron	120	FALSE	0	-101	0.64
75	P-21	1030	J-22	J-23	8	Ductile Iron	120	FALSE	0	-121	0.77
77	P-22	2748	J-23	J-24	8	Ductile Iron	120	FALSE	0	-136	0.87
83	P-25	1019	J-8	J-26	8	Ductile Iron	120	FALSE	0	22	0.14
85	P-26	1093	J-26	J-27	8	Ductile Iron	120	FALSE	0	9	0.06
87	P-27	2864	J-12	J-28	8	Ductile Iron	120	FALSE	0	-143	0.91
89	P-28	1524	J-28	J-29	8	Ductile Iron	120	FALSE	0	-167	1.07
93	P-30	2572	J-15	J-30	8	Ductile Iron	120	FALSE	0	18	0.11
95	P-31	1559	J-10	J-31	8	Ductile Iron	120	FALSE	0	11	0.07
97	P-32	2011	J-24	J-32	8	Ductile Iron	120	FALSE	0	91	0.58
99	P-33	1927	J-32	J-33	8	Ductile Iron	120	FALSE	0	82	0.52
101	P-34	932	J-33	J-34	8	Ductile Iron	120	FALSE	0	75	0.48
103	P-35	3542	J-34	J-35	8	Ductile Iron	120	FALSE	0	62	0.4
105	P-36	1138	J-35	J-36	8	Ductile Iron	120	FALSE	0	36	0.23
106	P-37	2403	J-36	J-12	8	Ductile Iron	120	FALSE	0	20	0.13
117	P-42	794	J-9	J-38	8	Ductile Iron	120	FALSE	0	33	0.21
119	P-43	640	J-38	J-39	8	Ductile Iron	120	FALSE	0	9	0.06
132	P-49	1115	J-29	J-46	8	Ductile Iron	120	FALSE	0	-192	1.22
148	P-57	109	R-2	J-3	8	Ductile Iron	120	FALSE	0	167	1.06
149	P-58	35	J-46	R-4	8	Ductile Iron	120	FALSE	0	-216	1.38
163	P-62	220	J-52	J-24	8	Ductile Iron	120	FALSE	0	262	1.67
165	P-63	1132	J-52	R-6	8	Ductile Iron	120	FALSE	0	-262	1.67

Water CAD Junction Report

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
34	J-3	375	<None>	<Collection: 1 item>	0	601.92	98
36	J-4	385	<None>	<Collection: 1 item>	0	601.57	94
38	J-5	382	<None>	<Collection: 1 item>	4	600.24	94
40	J-6	403	<None>	<Collection: 1 item>	11	599.43	85
42	J-7	375	<None>	<Collection: 1 item>	29	598.46	97
44	J-8	377	<None>	<Collection: 1 item>	18	598.2	96
46	J-9	395	<None>	<Collection: 1 item>	24	597.83	88
48	J-10	385	<None>	<Collection: 1 item>	48	597.75	92
50	J-11	392	<None>	<Collection: 1 item>	20	597.82	89
52	J-12	412	<None>	<Collection: 1 item>	15	598.01	80
54	J-13	396	<None>	<Collection: 1 item>	22	597.22	87
56	J-14	383	<None>	<Collection: 1 item>	24	596.86	93
58	J-15	399	<None>	<Collection: 1 item>	20	596.76	86
60	J-16	387	<None>	<Collection: 1 item>	13	596.76	91
62	J-17	395	<None>	<Collection: 1 item>	7	596.76	87
64	J-18	411	<None>	<Collection: 1 item>	26	596.76	80
66	J-19	426	<None>	<Collection: 1 item>	29	596.88	74
68	J-20	415	<None>	<Collection: 1 item>	20	597.09	79
70	J-21	421	<None>	<Collection: 1 item>	18	597.41	76
72	J-22	409	<None>	<Collection: 1 item>	20	597.72	82
74	J-23	407	<None>	<Collection: 1 item>	15	598.16	83
76	J-24	426	<None>	<Collection: 1 item>	35	599.6	75
82	J-26	375	<None>	<Collection: 1 item>	13	598.18	97
84	J-27	381	<None>	<Collection: 1 item>	9	598.17	94
86	J-28	393	<None>	<Collection: 1 item>	24	599.67	89
88	J-29	417	<None>	<Collection: 1 item>	18	600.85	80
92	J-30	397	<None>	<Collection: 1 item>	18	596.73	86
94	J-31	395	<None>	<Collection: 1 item>	11	597.74	88
96	J-32	405	<None>	<Collection: 1 item>	9	599.1	84
98	J-33	414	<None>	<Collection: 1 item>	7	598.7	80
100	J-34	419	<None>	<Collection: 1 item>	13	598.54	78
102	J-35	404	<None>	<Collection: 1 item>	26	598.1	84
104	J-36	406	<None>	<Collection: 1 item>	15	598.05	83
116	J-38	400	<None>	<Collection: 1 item>	24	597.8	86
118	J-39	392	<None>	<Collection: 1 item>	9	597.8	89
131	J-46	380	<None>	<Collection: 1 item>	24	601.96	96
162	J-52	420	<None>	<Collection: 0 items>	0	599.99	78
166	J-53	408	<None>	<Collection: 1 item>	7	600.85	83

Water CAD Fire Flow Report

Flow (Total Needed) (gpm)	Flow (Total Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Junction w/ Minimum Pressure (Zone)	Pressure (Calculated System Lower Limit)
750	3500	20	88	J-19	72
750	3500	20	51	J-6	47
754	2465	20	26	J-6	20
761	2062	20	20	J-38	35
779	2039	20	20	J-27	20
768	1930	20	22	J-27	20
774	1725	20	22	J-38	20
798	1842	20	24	J-31	20
770	2047	20	20	J-31	27
765	2532	20	20	J-13	30
772	1704	20	20	J-15	26
774	1521	20	24	J-15	20
770	1406	20	20	J-30	21
763	1429	20	20	J-15	22
757	1350	20	20	J-18	21
776	1275	20	20	J-19	25
779	1228	20	20	J-20	33
770	1324	20	21	J-19	20
768	1390	20	20	J-19	24
770	1512	20	24	J-21	20
765	1675	20	23	J-21	20
785	2945	20	20	J-21	25
763	1570	20	23	J-27	20
759	1342	20	20	J-26	40
774	2819	20	20	J-12	41
768	3380	20	20	J-53	24
768	1051	20	20	J-15	45
761	1364	20	20	J-10	50
759	2102	20	20	J-33	24
757	1775	20	20	J-34	22
763	1694	20	20	J-33	30
776	1847	20	20	J-36	31
765	1925	20	20	J-35	26
774	1478	20	20	J-39	23
759	1369	20	20	J-38	27
774	3524	20	93	J-19	73
500	3159	20	22	J-24	20
507	2358	20	20	J-29	48

Appendix C

Construction Cost Estimate

**Town of Lysander
Proposed Lamson Road Water District**

Preliminary Estimate of Project Construction Cost

Item DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
Lining (10%)	1,704	CY	\$21.00	\$35,784
Excavation Below Subgrade (10%)	342	CY	\$3.00	\$1,026
Special Backfill (10% Driveways & Town Roads)	1,954	CY	\$21.00	\$41,034
Furnish and Install 8-Inch D.I. Water Main (inc. poly wrap)	63,510	LF	\$32.50	\$2,064,075
Furnish and Install Hydrant Assembly (-600' spacing)	106	EA	\$2,500.00	\$265,000
Furnish and Install 8-Inch Gate Valves (-800' spacing)	79	EA	\$900.00	\$71,100
Furnish and Install 1-Inch Water Service	291	EA	\$650.00	\$189,150
Furnish and Install 1-Inch Copper Pipe Water Service	8,750	LF	\$6.00	\$52,500
County or State Road Crossings	7	EA	\$25,000.00	\$175,000
Railroad Crossings	2	EA	\$25,000.00	\$50,000
Stream Crossings	14	EA	\$5,000.00	\$70,000
Connection to Existing System	3	EA	\$20,000.00	\$60,000
Subtotal				\$3,074,669
Contingency (10%)				\$307,467
Subtotal				\$3,382,136
Survey, Legal, Administrative (5%)				\$169,107
Estimated Total Cost =				\$3,551,243

Appendix D

Estimated First Year Cost Calculation

Town of Lysander
Proposed Lamson Road Water District
Preliminary Estimate of Project Annual User Costs

Preliminary Estimate of Project Cost	\$3,551,243.00
Annual Debt Service (Full Cost)	\$211,648.00
Estimated Total Number of Equivalent Dwelling Units	330
Annual Unit Charge for Debt Service (30 years) =	\$642.00

Hydrant Charge

Annual Hydrant Charge (106 hydrants x \$61.61 each)	\$6,530.66
Total Number of Units	330
Annual Hydrant Charge Per Unit	\$20.00

Estimated First Year Town & County Tax Bill Charge =	\$662.00
-----------------------------------------------------------------	-----------------

Water Usage Cost (4 person household)

Based Upon a Typical Annual Usage of 73,000 Gallons (18,250 Gallons Per Quarter)

Base System Fee	\$34.50
First 10,000 gallons @ \$2.53/1000 gal	\$25.30
Next 13,000 gallons @ \$3.33/1,000 gallons	\$27.47
Typical Quarterly Water Bill	\$87.27
Typical Annual Water Bill	\$349.00

Water Usage Cost (2 person household)

Based Upon a Typical Annual Usage of 36500 Gallons (9,125 Gallons Per Quarter)

Base System Fee	\$34.50
First 10,000 gallons @ \$2.53/1000 gal	\$23.08
Typical Quarterly Water Bill	\$57.58
Typical Annual Water Bill	\$230.32

Total Estimated First Year Charge For 2 Person Household =	\$892.32
Total Estimated First Year Charge For 4 Person Household =	\$1,011.00