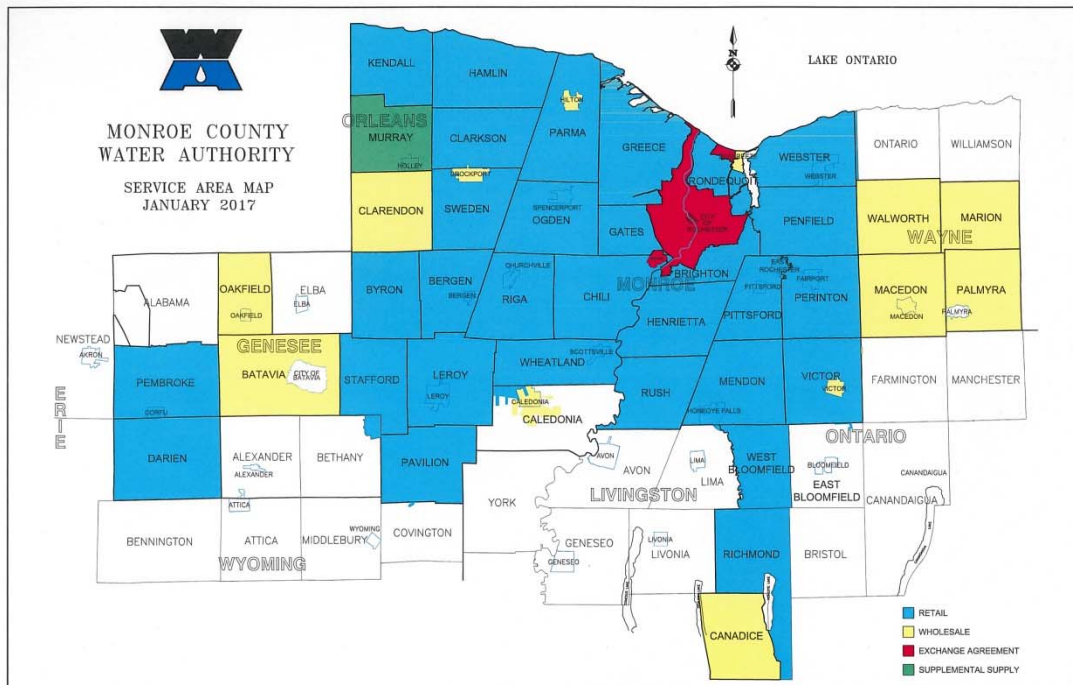


OPERATIONS OF THE MONROE COUNTY WATER AUTHORITY

BACKGROUND

The Monroe County Water Authority (the "Authority") services Monroe County and portions of each of the five surrounding counties. Our service area includes over 50 towns, villages, cities, and other water authorities. The Authority presently serves approximately 200,000 separate retail, wholesale, and other customer accounts. It also provides the City of Rochester with up to 26 million gallons per day (mgd) for distribution within its retail service area.



The Authority currently sets rates at levels sufficient to pay debt service on outstanding Authority obligations, to pay operating and maintenance expenses, and to make payments to the County under the existing lease and financing agreement between the Authority and the County.

WATER SUPPLY

The Authority's primary source of water is Lake Ontario. The water is treated at the Shoremont Water Treatment Plant (WTP) in the Town of Greece, and the 50 mgd Webster WTP in the Town of Webster. The Authority's other major source of water consists of water purchases from the City of Rochester pursuant to an existing exchange agreement. This water comes from Hemlock and Canadice Lakes in Livingston County south of Monroe County.

The Authority can also purchase water from the Town of Ontario, Wayne County; the City of Batavia, Genesee County; and the Erie County Water Authority. These sources are minor

in relation to the overall water system and are for our convenience or pursuant to terms of agreements when the Authority became the provider of water.

The Authority provides water on a retail or wholesale basis. In retail areas the Authority supplies the water, maintains the distribution system, and bills the customer directly. In wholesale areas, a municipality or water district buys some or all of its water from the Authority, but maintains its own distribution and customer billing systems.

FACILITIES

The Shoremont and Webster Water Treatment Plants employ the direct filtration process using Lake Ontario as their source of supply. The main components of each plant are the raw water intake, pumping and transmission, chemical addition, rapid mixing, contact basins, filtration, residuals disposal, clearwell storage, and high lift pumping. The Authority also operates a small well supply to a plant in the Village of Corfu. With the exception of the Corfu plant, the entire water supply receives the same chemical process, coagulation, filtration, carbon absorption, and disinfection. The Corfu Water Plant uses carbon absorption, softening, and disinfection. Water is pumped from the treatment plants to storage facilities and customers in the water system service area through approximately 3,300 miles of transmission and distribution mains, ranging in diameter from 2" to 60". The water system operates 51 pumping stations to provide the pressure to distribute water to storage facilities and customers. The system includes two reservoirs and 49 other storage facilities with an aggregate capacity of 140 million gallons. All service connections are metered, with the meters owned by the Authority.

As with most other water systems, our water usage also varies year to year depending on weather variations. Hot, dry summers tend to increase water usage, while colder and wetter summers tend to dampen or reduce water usage.

FINANCIAL HIGHLIGHTS

Water Authority Rates & Charges – The Authority sets its rates annually in concurrence with the adoption of its annual operating budget. The Authority is required by its Trust Indenture dated October 1, 1991 and Supplemental Indentures issued with and specific to each subsequent revenue bond issue (Trust Indentures) to set rates and fees sufficient to cover all its operating and capital expenses. The Authority raised rates in 2017 to achieve the projected revenues to cover total budgeted expenses.

Summary of Operating Revenues

	<u>2018</u>
Water Sales:	
Residential/Quarterly	\$55,736,718
Large Commercial/Monthly	6,519,743
Water Districts/Wholesale	3,673,169
Total Water Sales	<u>\$65,929,630</u>
Other Water and Operating Revenue	4,092,184
Total Operating Revenue	<u>\$70,021,814</u>

OPERATING EXPENSES

The Authority's expenses (excluding depreciation and amortization) are budgeted and tracked functionally by operating department. The Authority is functionally divided into: Administration; Production/Transmission; Engineering; Facilities, Fleet & Operations; and Finance & Business Services.

The following is a breakdown of the Authority's functional expenses by operating department (excluding depreciation and amortization):

Functional Expenses

	2018
Administration	\$4,671,249
Production/Transmission	14,479,456
Engineering	3,785,679
Facilities, Fleet & Operations	13,728,015
Finance & Business Services	6,823,733
Total Functional Expenses	<u>\$43,488,132</u>

LONG-TERM DEBT ADMINISTRATION

The Authority has six water revenue bond series outstanding totaling \$130,750,000 as of December 31, 2018.

CREDIT RATINGS

The Authority is the recipient of very favorable credit ratings from both Moody's and Standard & Poor's. The Authority has an Aa2 rating assigned to its revenue bonds by Moody's Investors Service and an AA+ rating by Standard & Poor's. The Authority's bond ratings were last reviewed by Moody's Investors Service and Standard & Poor's in December of 2017. The Authority issues revenue bonds subject to its master Trust Indenture dated October 1, 1991 and Supplemental Indentures issued with and specific to each subsequent revenue bond issue.

Monroe County Water Authority
2018 Water System Accomplishments / Projects

Below is a summary of improvements made to the Monroe County Water Authority (MCWA) water system in 2018. This list is inclusive of both completed and ongoing projects.

Water Mains

- ✓ Completed the design, bid, and commenced with construction for the 2018 Cleaning and Cement Mortar Lining Project. This project consists of cleaning and cement mortar lining or structural lining of approximately 19,235 lineal feet of 6-inch, 8-inch, 10-inch, and 12-inch cast iron water mains. The work also includes the replacement or installation of hydrants, valves, and appurtenances on West Jefferson Road in the Town of Henrietta, Inspiration Point, Dewitt Road, Volk Road, Bay Road, Lake Road, Vosburg Rd, Thomar Drove, Forest Lawn Road, and Phillips Road in the Town of Webster.
- ✓ Completed the design, permitting and construction of the Water Main Replacement on Phillips Road in the Town of Webster. This project was incorporated into Monroe County Department of Transportation's highway reconstruction project for Phillips Road. The water main replacement work consisted of the replacement of approximately 9,500 lineal feet of 8-inch water main and appurtenances.
- ✓ Completed the design and permitting of the Lake Road and White Road water main replacement project. This project consists of the replacement of approximately 3,000 lineal feet of 8-inch cast iron water main with 12-inch ductile iron water main and appurtenances on Lake Road and White Road in the Town of Sweden.
- ✓ Completed the design, bid, and construction for the 2017 Water Main Replacement Project - Phase 1. This project consisted of the replacement of approximately 2,100 lineal feet of 6-inch and 8-inch water main and appurtenances on West Avenue and McKinley Street in the Village of East Rochester, Klem Road in the Town of Webster, and Loud Road in the Town of Perinton. This project also included the replacement of approximately 36 water services.
- ✓ Completed the design, bid, and construction of the 2017 Water Main Replacement Project Phase 2. This project consisted of the replacement of approximately 1,500 lineal feet of 6-inch water main and appurtenances on Stottle Road in the Town of Chili and the installation of approximately 1,500 lineal feet of 8-inch water main and appurtenances on Browns Road in the Town of Wheatland.
- ✓ Completed the design, permitting and construction of the Gravel Road and Creek Street water main replacement project in the Town of Penfield. This project consisted of the replacement of approximately 100 lineal feet of 8-inch ductile iron water main and appurtenances.
- ✓ Completed the design, bid and construction of the Empire Boulevard Main Replacement project in the Town of Irondequoit. This project consisted of the replacement of approximately 2,270 lineal feet of 6-inch and 8-inch water main and appurtenances. This project also included the replacement of approximately 27 water services.

- ✓ Commenced with the design, permitting, and easement acquisition for the East River Road Main Replacement project. This project consists of the replacement of approximately 10,000 lineal feet of 12-inch water main and appurtenances on East River Road in the Town of Henrietta.
- ✓ Commenced with the design, permitting and easement acquisition for the Manitou Beach Road and Salmon Creek Drive water main replacement project in the Town of Greece. This project consists of the replacement of approximately 10,500 lineal feet of 8-inch water main with 12-inch water main and appurtenances.
- ✓ Completed the construction of the Long Pond Road water main replacement project. This project consisted of the replacement of approximately 6,000 lineal feet of 8-inch water main on Long Pond Road in the Town of Greece. This project also included the replacement of approximately 66 water services.
- ✓ Completed the construction administration and inspection of the Calkins Road water main replacement project in the Town of Henrietta. This project consisted of the replacement of approximately 4,900 lineal feet of 12-inch zinc coated ductile iron water main and appurtenances. The project also included the replacement of approximately 27 water services.
- ✓ Completed the construction of the 2017 Water Service Replacement Program. This project included the replacement of 83 galvanized water services in 11 towns and villages throughout Monroe County.
- ✓ Completed the construction of the 2017 Cleaning and Cement Mortar Lining project. This project included the cleaning and cement mortar lining of approximately 21,870 lineal feet of 4-inch, 6-inch, and 8-inch water mains on Beechwood Drive, West Avenue, Magnolia Avenue, East Chestnut Street, East Elm Street, East Avenue, Cedar Place, Wilson Avenue, East Spruce Street, East Hickory Street, Mains Street, Madison Street, East Ivy Street, Northwood Avenue and water main within the Bird/Morgan School property. This project also included the replacement of approximately 760 lineal feet of 6-inch water main on Madison Street and East Filbert Street, and the replacement of approximately 48 hydrants and 68 valves.
- ✓ Completed the construction of the 2017 Cathodic Protection project. This project included the installation of approximately 116 magnesium anodes, test stations, and repairs to existing cathodic protection systems on steel transmission mains and vaults in 6 towns throughout the Water Authority's service area.
- ✓ Developed the specifications, contract and bid the 2018 Vacuum Excavating Contract. This contract was used to determine water service material for approximately 400 water services at various locations through the Water Authority's service area.
- ✓ Completed the design and advertised the bids for Stone Road and Wood Road Main Replacement contract. This project consists of the replacement of approximately 1,500 lineal feet of 6-inch water main and appurtenances on Stone Road and approximately 2,200 lineal feet of 6-inch water main on Wood Road in the Town of Greece. The project also includes the replacement of approximately 45 water services.

- ✓ GPS surveyed the location of approximately 3,969 hydrant locations in the Towns of Perinton, Greece, Webster, and Brighton.
- ✓ Performed acoustical leak detection survey of approximately 560 miles of water main.

Water Storage Facilities

- ✓ Completed the design, bid and construction for the rehabilitation of the northerly South Avenue Tank in the Village of Webster. This project consists of making some structural repair and modifications to the tank and completing the blasting, priming and painting of the interior and exterior of the 1 million gallon elevated steel water storage tank on South Avenue in the Village of Webster.
- ✓ Completed the contract, bid, and construction for the removal and disposal of the southerly South Avenue Tank in the Village of Webster. This project consists of the removal of the 138 feet tall 0.5 million gallon multi-leg water storage tank on South Avenue in the Village of Webster.
- ✓ Completed the design, bid and construction for the rehabilitation of the 2 million gallon steel water storage tank located in the Town of Bergen. This project also included making repairs and miscellaneous modifications to the 0.25 million gallon steel water storage standpipe located on County Road 37 in the Town of West Bloomfield.
- ✓ Completed the construction of the 0.3 million gallon elevated steel West Brighton water storage tank rehabilitation project. This project included making minor modifications to the tank and the recoating of the interior and exterior of the tank.
- ✓ Cleaned and inspected the following water storage facilities:
 - State Road Tank
 - West Webster Tank
 - Pembroke Tank
 - Hilton Tank
 - South Ave Tank
 - West Main St. Leroy
 - Moseley Road Tank
 - Harris Hill
 - Douglas Road Tank
 - Lee Road West Tank
 - Darien Tank

Water Districts

At the request of Towns in the MCWA service area, we assist with their implementation of water district projects. In 2018 we:

- Provided Design Review, completed and activated the water main associated with the following water district projects:

• Bethany WD 2	21,700 LF	42 Services
• Clarkson: Clarkson Parma TL	7,500 LF	36 Services
• Kendall WD 7: Norway Rd WD	7,200 LF	24 Services
• Stafford WD 11	15,000 LF	32 Services

Pump Stations

- ✓ Designed, bid, and completed replacement of Kreag Road Pump No 2, and installed new variable frequency drive (VFD).
- ✓ Installed new VFD for Scribner Road Pump No. 1.
- ✓ Designed and installed new sodium hypochlorite storage and feed system at Factory Hollow Pump Station for maintenance of distribution system chlorine residual.
- ✓ Initiated study of the chlorination and dechlorination chemical storage and feed systems at Thornell Road Pump Station (Denise Reservoir).
- ✓ Initiated design of Generator Optimization – Phase 1 including installation of new generator at the Lee Road Pump Station (relocation of the Webster Water Treatment Plant house generator).

Treatment Plants

Shoremont Plant

- ✓ Completed the design, bid and construction of the 2018 Roof Rehabilitation project. This project included the recoating of approximately 5,000 sf of roof over the office area of the Central Processing Facility and the recoating of approximately 6,100 sf of the roof at the Low Lift Pump Station Number 1 with a polyuria coating.
- ✓ Completed construction of Phase 3 of the substation and electrical facilities upgrades.
- ✓ Designed and bid West 1 Plant improvements including rehabilitation of the contact basins and installation of an additional second floor egress.
- ✓ Replaced the SCADA servers and associated equipment and installed a new air conditioning unit for the SCADA/IT Room.
- ✓ Installed new isolation valves on the discharge piping of Backwash Pump Nos. 1 and 2.
- ✓ Designed and bid replacement of the chlorine scrubber equipment.
- ✓ Designed and initiated rehabilitation of the emergency gaseous chlorine disinfection system.
- ✓ Completed evaluation and preliminary design of electrical improvements at Low Lift Pump Station Nos. 1 and 2.
- ✓ Designed and bid improvements to the fire alarm system and equipment.
- ✓ Initiated study of the zebra mussel control system.
- ✓ Replaced the individual and combined filter effluent turbidimeters for the East Plant.

- ✓ Initiated design of miscellaneous structural repairs.
- ✓ Initiated design of Generator Optimization – Phase 1 including new UPS system and new house generator (relocated from Lake Water Pump Station).
- ✓ Began preparing drawings and aided the Design group in developing the contract documents for the SWTP Concrete Repairs project.
- ✓ Bid and award the Backwash Channel Dredging contract for 2018 work; including administrative support to Production Department

Webster Plant

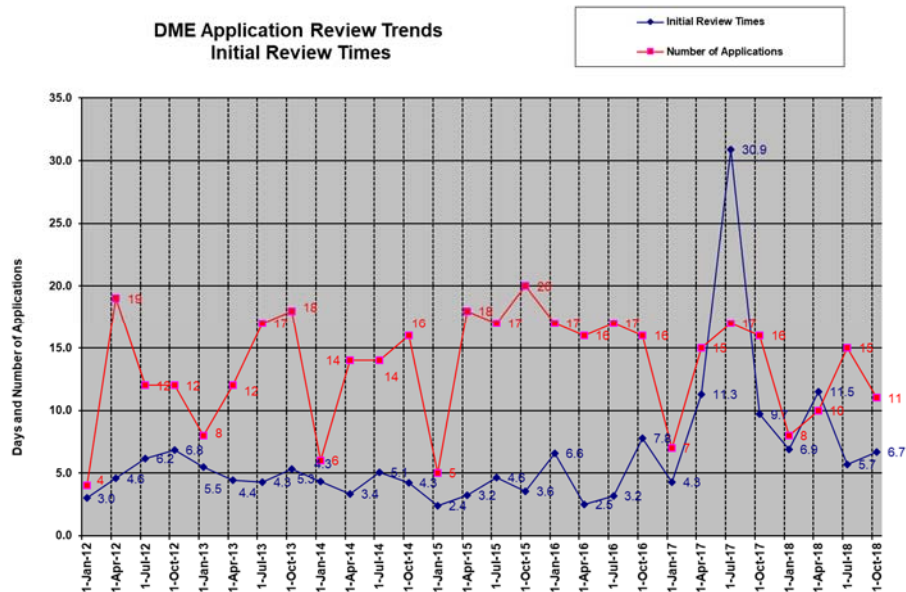
- ✓ Initiated design of Generator Optimization – Phase 1 including relocation of the Webster Water Treatment Plant house generator to Lee Road Pump Station; automation of switchgear at the Webster Water Treatment Plant; and relocation of the Lake Water Pump Station house generator to the Shoremont Water Treatment Plant.

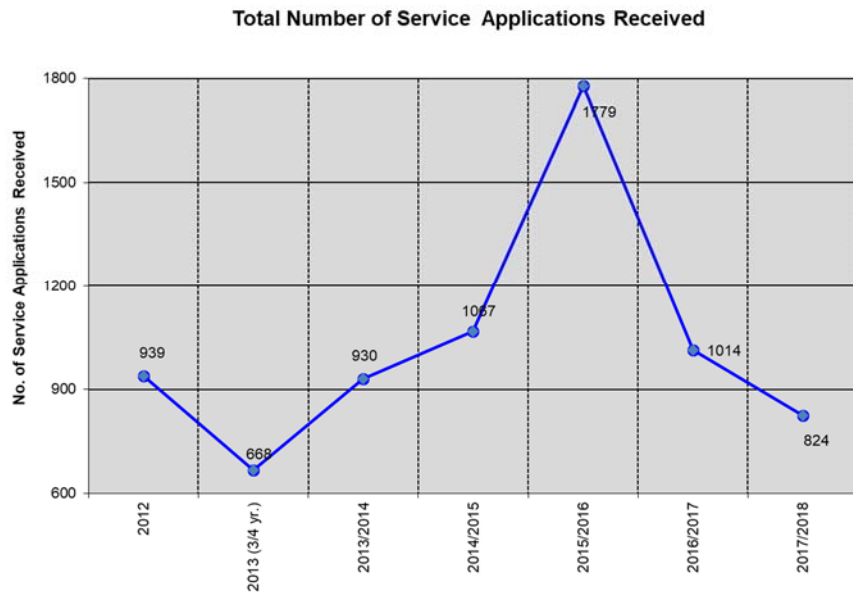
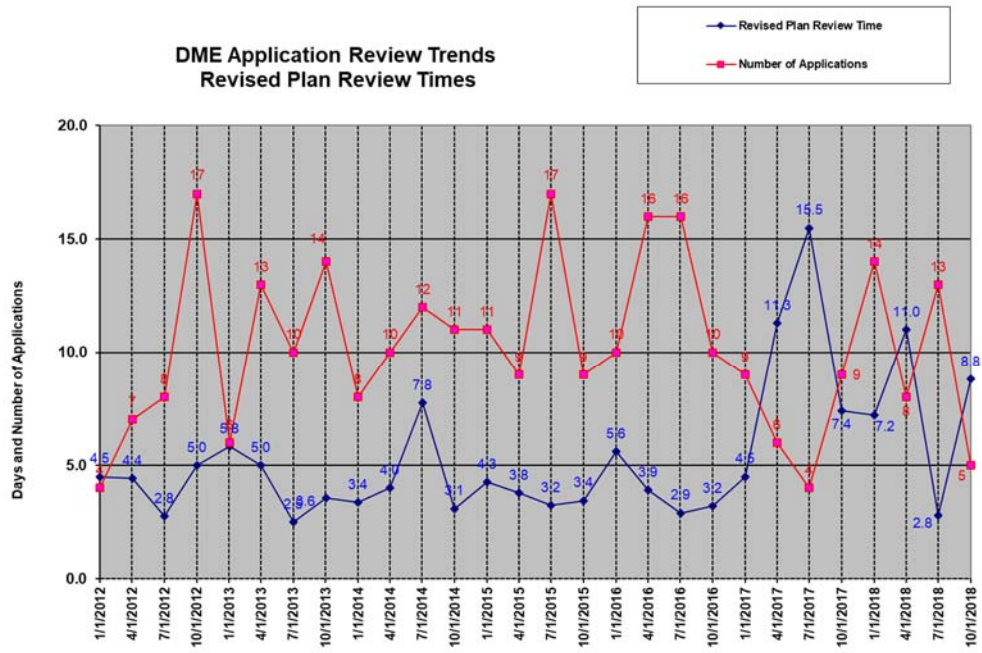
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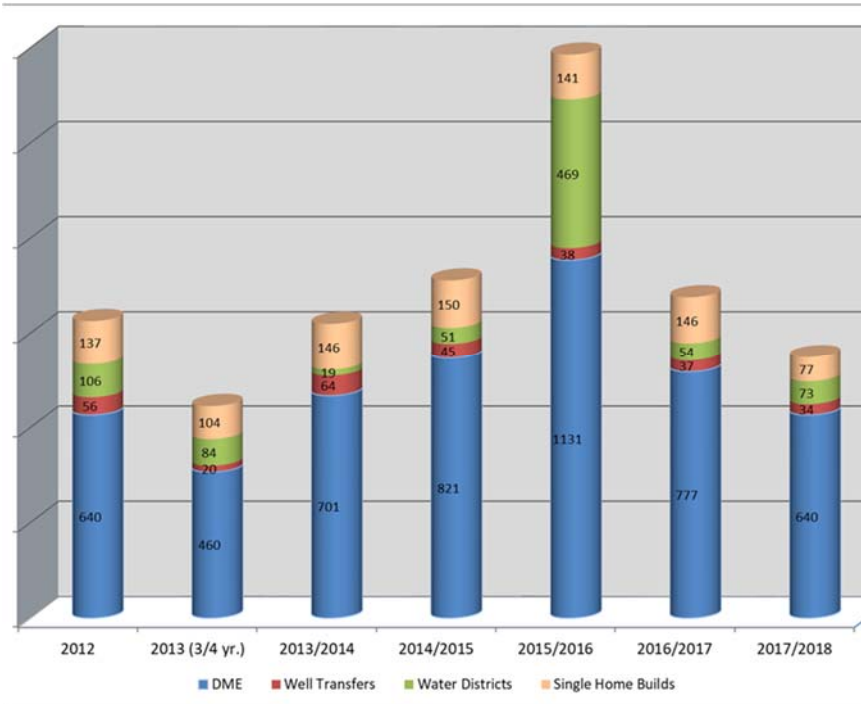
- ✓ Designed, specified, and installed new heating blanket on the brine tank.

Brockport

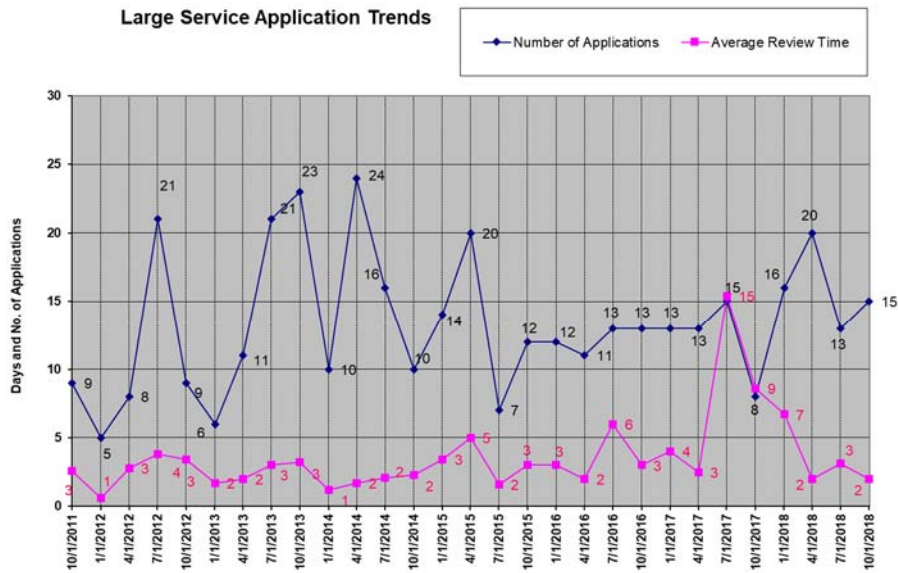
- ✓ Designed, permitted, and remediated asbestos containing materials by outside contractor.



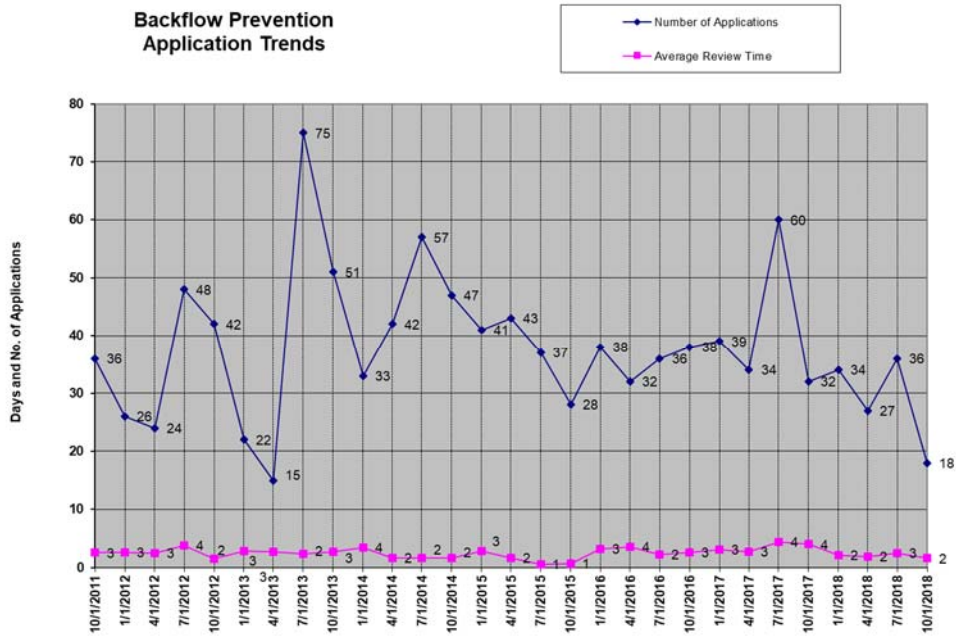




Large Service Application Trends



Backflow Prevention Application Trends



Water District Extensions

