

PUBLIC WORKS & UTILITIES ANNUAL REPORT



Water Distribution (From L to R):
Dave Outinen, Art Carlson, Mark
Trembath, Bruce Gauthier, Todd
Brugman, Randy Bullock, Chris
Tracy

Street Maintenance (From L to R):
Dave Contois, Bridget Holm,
John O'Neill, Dale Liljeroos, Mark
Brandel, Jim Fraley, Kyle
Johnson, Mike Koval, Don
Trezona, Mike Parsons, George
LaFave. Not pictured: Steve
Matt, Anthony Baez and Luke
Chapman



Sewer Maintenance (From L to R):
Kneeling – Dan Beerman, Larry Linna,
Gerald Bartlett, Randy Paavola, John
Dale, Pat Nordquist, Mike Schmeltzer.
Not pictured: Dan Chapman



Forestry (From L to R): Chad Hightshoe, Paul Albert, Dan Carter

Equipment Maintenance (From L to R): Al Wendrick, Lance Hopper, Duane Suckow, John Steadman, Eric Hinze, Tom Florek, Alex Hinze, Jim Tregear



Facilities Maintenance (From L to R): Jarrod Molise, Mark Romero, Barry Just, Carl Miller, Mike Sjolund



Administrative (From L to R): Eric Stemen, Scott Cambensy, Tonya Beerman, Katie Burnette

Wastewater Treatment Plant
(From L to R): Weston Dishaw, Lyle Michaels, Neil Hayward, Bernie Stanaway, Mark O'Neill, Dan Johnston, Pam Greenleaf, Curt Goodman, Neil Traye and Adam Diedrich. Not pictured: Water Filtration Plant staff





PUBLIC WORKS AND UTILITIES

2013-2014 ANNUAL REPORT

In accordance with Section 2-80 of the City Code, listed below is a summary of activities for the Public Works and Utilities Department for the 2013-14 fiscal year.

WATER TRANSMISSION & DISTRIBUTION

The Water Department experienced a taxing year. With the extreme, consistent cold weather, the frost depths reached over seven feet. Long hours of thawing as well as many hours of repairs were completed through the Water Department.

The infrastructure repairs included water, sanitary sewer and storm sewer repair. The repairs were necessary to protect the health and welfare of the citizens of Marquette. Repairs were performed to ensure residents were provided with safe drinking water, grey water would be carried away from their homes for treatment, and so that storm water from run-off would be efficiently dealt with to provide roads safe for travel and prevent erosion, and further freeze/thaw cycle damage to the roads.

Federal Emergency Management Agency (FEMA) assistance had been requested and denied due to not meeting the threshold established by FEMA. The Michigan Economic Development Corporation announced the Community Development Block Grant for Urgent Need was available. The City of Marquette then applied and was approved for \$495,588 through the CDBG Urgent Need Grant. In addition to the grant monies availability, Governor Rick Snyder opened an application period under Section 19 of the Michigan Emergency Management Public Act 390 for financial assistance for communities who incurred extraordinary expenses related to the Governor's April 2014 Emergency declarations for the severe underground freeze. The City of Marquette has applied for the maximum allowance of \$100,000 through the Section 19 application. The Section 19 application has been reviewed and determined to be administratively complete. The City is in line to receive the maximum allowance of \$100,000.

The total expenditures the City of Marquette has incurred for the 2014 Winter Freeze were \$1,432,684 with reimbursements totaling \$495,588.

In accordance with the Safe Drinking Water Act, Public Act 399, the City is required to conduct lead and copper sampling at pre-determined individual residences every three years. The law requires all test results meet the lead and copper limits set by the DEQ for 90% of the samples taken. There were 30 samples taken with three failing, which brings us in compliance with the Department of Environmental Quality's standards. No follow-up testing will be required for an additional three years.

Water Department Statistics

- Backflow devices in system – 957
- Water main repairs – 17
- Water service line repairs – 23
- Water service line replacements – 12
- Residential meter change-out – 378
- Total cross connection accounts – 735
- High hazard accounts (reinspected every 36 months) – 598
- Low hazard accounts (reinspected every 72 months) – 137
- Cross connection accounts – 735
- New cross connection accounts – 25
- High hazard reinspections completed – 224
- Low hazard reinspections completed – 35
- Cross connections found to exist during inspection – 5
- Cross connections corrected of the newly found connections – 4
- Cross connections corrective action in progress – 28
- Backflow prevention devices in system – 957
- Backflow devices tested – 224
- Large meters tested – 28
- Large meters not meeting American Water Works Association specifications – 0

* Statistics are for 2013 calendar year due to the time frame that is required by the Michigan Department of Natural Resources and Environment for the Water Supply Cross Connection Report that is due yearly.

STREET DIVISION

2013 marked the 21st consecutive year the City of Marquette has been awarded the “Safe and Sustainable Snow Fighting Award” by the Salt Institute.

Street Statistics

- Local Street Mileage – 59.47
- Major Street Mileage – 30.95
- Non-Motorized Mileage (Bikepath) – 18.1
- State Trunkline Mileage – 1.95

Routine Maintenance

- Gallons of paint for pavement marking-Local Streets – 0
- Gallons of paint for pavement marking-Major Streets – 0
- Tons of blacktop used for Sewer restorations-Local Streets – 90
- Tons of blacktop used for Sewer restorations-Major Streets – 47
- Tons of blacktop used for Water restorations-Local Streets – 270
- Tons of blacktop used for Water restorations-Major Streets – 139
- Tons of blacktop used for Stormwater restorations-Local Streets – 23
- Tons of blacktop used for Stormwater restorations-Major Streets – 12
- Tons of blacktop used for street repair-Local Streets – 68
- Tons of blacktop used for street repair-Major Streets – 35

Winter Maintenance

- Cubic yards of snow removed-Local Streets – 6,000
- Cubic yards of snow removed-Major Streets – 9,000
- Tons of salt used for ice control-Local Streets – 465
- Tons of salt used for ice control-Major Streets – 705
- Tons of salt used for ice control-State Trunkline – 129.91
- Cubic yards of sand used for ice control-Local Streets – 1,810
- Cubic yards of sand used for ice control-Major Streets – 2,400
- Gallons of liquid calcium chloride used for ice control-Local Streets – 0
- Gallons of liquid calcium chloride used for ice control-Major Streets – 0

Sanitation

- Collection from approximately 6,059 residential units, 100 small commercial and one dozen litter barrels throughout the City.
- Curbside contract service collection fee - \$8.46
- Other contract service collection fee - \$1.24
- City service collection fee - \$5.05
- Vehicles at Compost Site – leaves/grass – 6,896
- Vehicles at Compost Site – brush – 3,010
- Vehicles at Rubbish Drop-Off Site – 6,310
- Tons of rubbish collected – 867
- Tons of metal collected – 0
- Cubic yards of leaves collected curbside – 9,000
- Cubic yards of brush collected curbside – 1,100
- Cubic yards of yard waste collected curbside – 6,000
- Estimated tons hauled directly to the Marquette County Landfill – 8,059

The City of Marquette awarded a three-year contract for curbside and City facility collection services and rubbish drop-off collection. In addition, the City changed the recycling collection from a single-stream to a dual-stream operation, in order to increase the value of the collected recyclable materials.

SEWER DIVISION



The sanitary sewer system is a network of pipes, pumps and structures that connect each building in the City of Marquette to the Wastewater Treatment Plant. There are 87.5 miles of sewer mains from six inches to 36 inches in diameter along with approximately 2002 manholes. There are four major pump stations and several minor pump stations. Each building in the City has a service line commonly known as a lateral. Most homes have four-inch laterals, while the size of business laterals range from four inches to eight inches.

CLEANING

City crews cleaned 259,495 feet of sewer main in 2013, compared to 302,416 feet cleaned the previous year. In addition, staff inspected 1,620 sanitary manholes to monitor the operation of 176,868 feet of sewer main in 2013 compared with 1,426 inspections that were completed in 2012. Crews also responded to 31 reported sewer backups in 2013, of which one was due to a problem in the City system. The year before crews responded to 34 sewer backups with four incidents originating within the City system. Crews clean sewer mains with a Vactor jet rod truck which is used to flush pipes of build-up of solids and grease. A Sreco mechanical rodder is used to cut tree roots which is the most common cause of blockages. Property owners are responsible for all maintenance of their laterals including cleaning from building to the City main. The majority of sewer backups this year were a result of tree roots and/or failing Orangeburg laterals.

When sanitary sewage from a public collection system (main) overflows the system, to the point where the spillage affects the environment or the public, a sanitary sewer overflow (SSO) report must be completed. This is in accordance with the provisions of Act 286 of the Public Acts of 2000 of the State of Michigan. If the overflow is confined to a private basement, only the Michigan Department of Environmental Quality and the Marquette County Health Department need to be sent a report. If the overflow affects the general public, then the main media source for that area is also sent a report. If an overflow of significant volume (1,000 gallons or more) occurs in a public waterway or on the ground where the public will be exposed, phone notification must take place along with a fax report as soon as the spill has been contained. The City of Marquette reported zero sanitary sewer overflows in 2013.

REPAIRS

Repairs of the sewer mains are also a part of our annual maintenance. This requires the use of excavation equipment to dig up broken pipes and replace damaged sections. The length of pipe replaced ranges from four feet to 20 feet for point repairs. In 2013, crews made four point repairs on City mains compared to five the year before.



Sanitary lateral repairs are the responsibility of the City of Marquette when within the right-of-way should the pipe deteriorate or is broken by an external force. Crews repair or replace laterals when property owners have either insufficient service or lose their sewer service completely. City personnel use various methods and equipment to determine where the problem exists and whether excavation is necessary. Property owners are required to attempt to relieve the blockage with pipe cleaning equipment prior to the City proceeding with any excavation. The vast majority of blockages can be relieved without excavation. Crews replaced 15 sanitary laterals in 2013 of which 12 were troublesome Orangeburg pipe. This compares to 11 the previous year of which eight were Orangeburg pipe. All replacements are from right-of-way line to City main, with clean-outs installed at the right-of-way line. Excavation along with restoration of sidewalks, curbs, roadway, and lawns, becomes a very expensive means to open clogged laterals.

The leading cause of failing sewer laterals is the material used from the early 1950s to the early 1970s commonly known as Orangeburg pipe. This pipe was installed in a twenty-year period and is rapidly eroding in about the same time frame. Orangeburg pipe is made of a tar-like material and was determined to be used in about 50 percent of houses in the City of Marquette.

City crews made one new sewer lateral tap into City sewer mains for newly constructed buildings in 2013. Property owners must obtain a permit for such work, and are generally responsible for the excavation and any restorations. City crews drill new taps into the sewer main and install laterals with clean-outs from right-of-way to main. Three taps were made in 2012.



TELEVISIONING

Televising laterals is another service the City provides to residents. This procedure plays a very important part in determining the cause of a blockage along with its location. Televising requires crews to generally inspect the pipe from inside buildings, which allows property owners to witness the findings. This helps give the property owner information about the proper course of action to take to eliminate future backup problems. Residents can then see if they need to be on a routine cleaning cycle or whether their portion of the lateral needs repair. City crews are also able to see if the lateral under the right-of-way is in proper working order. Thousands of dollars are saved annually by using the City's inspection camera to determine the cause of problems and eliminating the need to excavate. Crews televised 193 laterals in 2013, compared to 186 the previous year. Many of the laterals televised this year were completed for the SIMP projects of 2014 to determine which sewer laterals need to be replaced before resurfacing asphalt.

REHAB

Manhole repairs and rehabilitations are done annually, depending on the condition of structures and time table for reconstruction to be taking place in the affected area. These repairs range from total replacement of a structure to back-plastering of bricks to strengthen walls. Manhole covers and castings are often adjusted or replaced, as the need arises. City crews made approximately 26 manhole repairs in 2013, compared to 19 in 2012.



Sewer Operations Maintenance

- Sewer backups responded to – 31
- Sewer laterals televised – 193
- Sewer main repairs – 4
- Jet rodding (linear feet of sewer) – 126,490
- Root cutting (linear feet of sewer) – 133,005
- Sanitary Sewer Overflows (SSO) – 0
- Grease trap inspections – 56

Sewer Capital Outlay

- Sewer lateral taps – 1
- Sewer lateral replacements – 15
- Manhole repairs – 0

Stormwater Routine Maintenance

- Catch basin repair – 28
- Catch basin replacement – 4
- Storm point repairs – 7
- Storm line thawing – 0

FORESTRY DIVISION

PLANTING

In-house

In-house planting by the Arborist and Forestry Crew is typically undertaken due to such factors as large tree size, unique species, or an atypical planting location or situation. In 2013, the City received a \$6,000 Community Forestry Grant from the Michigan Department of Natural Resources to plant a total of 48 trees in three distinct planting efforts, all with a focus on species diversification:

- Reforestation/establishment planting at Park Cemetery,
- Establishment planting at the Kaufman Sports Complex, and
- Establishment planting at the new Marquette Skate Park.

At Park Cemetery, 15 trees were inter-planted into older plots currently wooded with hundreds of over-mature trees in an effort to establish a second age group within the stand; in addition, 17 trees were introduced into the facility's newer plots to ensure that they would someday echo the appearance of the cemetery's original sections.

Ten shade trees were introduced into the open areas between the Kaufman Sports Complex's three soccer fields and four ball diamonds. These areas were completely devoid of trees, so this planting will be the first of several required to promote a park-like appearance for the facility.

Similarly, the new Marquette Skate Park is located at a high profile intersection, the Pine Street side of which was treeless. Three shade trees and three multi-stemmed flowering trees were planted along the skate park's west edge to provide the foundation for the site's eventual landscape.

Contractual

The vast majority of street-side and park tree planting is administered by the Arborist and accomplished contractually. In 2013, 46 such trees were planted by Coryell Nurseries of Munising. While a majority of this planting addressed adjacent property owner requests or provided replacements for recently removed street trees, the contract's second focus was to restock large caliper, upright shade trees into the downtown's sidewalk planting pit sites.

PRUNING

Small Tree (diameter of less than 10 inches)

Small tree training pruning is carried out by the Forestry Crew utilizing a ladder, hand tools and a pickup truck. Such pruning provides the immediate effect of adequate street, sidewalk, and—in the case of park trees—lawn maintenance equipment clearances. In addition, such pruning also helps establish a sound branching structure which decreases the need for dramatic pruning later. 131 small trees were pruned in 2013, a 37 percent decrease from the previous year figure. This decrease can be attributed to the aforementioned in-house planting project, as well as the below.

Large Tree (diameter of greater than 10 inches)

Large tree pruning is accomplished by the Forestry Crew utilizing chain saws and heavy equipment. This pruning typically focuses on safety concerns, as deadwood is removed and street clearance conflicts are abated. Such work is also often carried out in conjunction with other scheduled, nearby tree work (e.g. removals). 309 large trees were pruned in 2013, a 355 percent increase over the previous year figure. This increase can be attributed to a change in the makeup of the Forestry Crew, where an arborist position was added to the existing pair of heavy equipment operators.



The ‘Frosty Treats’ sugar maple was pruned in March of 2013. The tree is depicted above prior to pruning (left) and after pruning (second from left). The work was required because the branches adjacent to an early 2000s pruning wound were prone to failure due to stem decay and pileated woodpecker damage (second from right). It’s a wonder that the tree performs as well as it does given that it is completely surrounded by hard surfaces (right).

REMOVAL

Dead, dying, diseased and otherwise dangerous trees are obvious safety concerns. When such trees are located along street rights-of-way, in parks or on other City-managed properties, the Forestry Division is responsible for their identification and removal. 137 trees were removed in 2013, a 33 percent decrease from the previous year figure. The total number of trees removed is somewhat misleading, as only 48 of this year’s removals were true, street-side, residential trees: a total comparable to 2012’s. The remainders were naturally occurring trees in the cemetery, parks, or along street rights-of-way which required removal due to poor condition, storm damage, or other factors.



The four poplar stems (above left) were removed in 2013 due to beaver damage (above right). Several other trees in the area were completely downed by the beaver activity (below). While most trees felled by beavers land in the water, a stem damaged to the extent seen above could easily be windblown off target and fall into the adjacent parking lot or fish cleaning station.



STUMP GRINDING

Stumps resulting from tree removals on street rights-of-way, park, or other high-profile City property locations are ground out, with the resulting hole filled with topsoil and reseeded. Since purchasing the stump grinder in 2005, City crews have ground out over 1,000 stumps.

Forestry Statistics

- In-house tree planting – 48
- In-house transplanting – 0
- Contractual – 46
- Small tree pruning – 131
- Large tree pruning – 309
- Tree removal – 137
- Stump grinding – 71

PARK CEMETERY



Pictured Above: Delivery of Park Cemetery's new 80 niche columbarium in mid-May 2013 (left), and the new "Pinery Columbarium" ready for utilization in mid-July (right) following landscape installation and sod establishment.

SPECIAL PROJECTS

Lot Record Binders

2013 saw the cemetery's master lot ledgers--handwritten hard copies of ownership and burial records dating back to the 1890s--still being maintained in their four original binders. These 120-year-old books were not only dilapidated, but also poorly organized. Paperwork detailing lot usage and ownership transfers were unlabeled and strewn loosely throughout the texts; in addition, unless one knew which ledger held which plat's information, all of the books needed to be searched to find the desired section. While the local retailer who provided the original binders has long since closed, the original manufacturer is still in business; however, ledgers of the size in question are no longer produced. After a lengthy search, which included consultation with an antique book collector, a stationary firm specializing in city and county records binders was located in Ventura, Calif. Five such binders were purchased, loose paperwork was read, labeled and attached to the appropriate lot records, and the ledger sheets were transferred and reorganized to correspond to the cemetery's work zones and associated five-lot map packets.



Pictured Above: Two of the original Park Cemetery master ledgers (left) and three of the five new, reorganized, custom-made binders (right).

Garden Tour

In mid-June, Park Cemetery was one of the stops on the Norway, Mich. Garden Club summer bus tour. The tour's organizer had heard of our cemetery's beauty, and especially that of the facility's numerous manicured gardens. Our lead master gardener volunteer, Jeannette Hauver, acted as tour guide and led the group of nearly 50 attendees to stops at several of the cemetery's 11 gardens and 16 above-ground planters. Jeannette has been a tremendous asset to the City. She initiated the cemetery garden program, and has both faithfully and diligently overseen garden expansion and maintenance for the past 19 years.

Flag Pole Failure and Replacement

Park Cemetery's primary—and very old—flag pole, the feature element of the City's annual Memorial Day observance, failed in high winds in mid-October (at right). Negotiations with the Marquette-Alger Regional Educational Service Agency administration yielded their donation of a no-longer utilized, 30-foot flag pole from the Hewitt Avenue side of their building. In return, City crews dismantled the pole, removed and disposed of its large concrete foundation, and provided site restoration. This recycled pole will be installed at the Memorial Day site prior to the 2014 holiday.



Cremation Garden

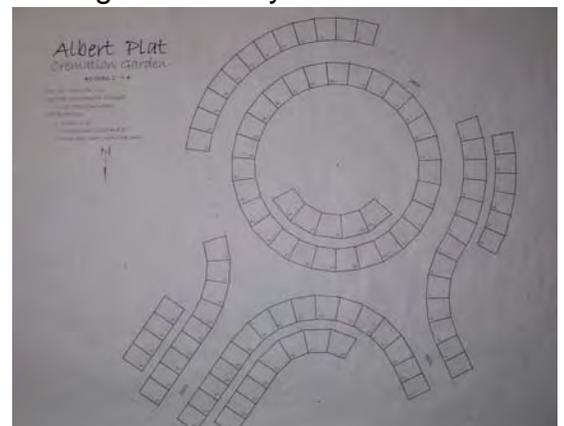
Cremation interments have increased steadily over the past 40+ years, from 4 percent of all interments in 1970 to a high of 65 percent in 2012. To better address this trend, a circular, granite-faced, 80-niche structure for above-ground cremation urn placement—the Pinery Columbarium (at left)--was installed in 2013.



In-ground urn interments are still the most common preference, with two options currently available:

- Two urns can be placed in a traditional, 33 square foot gravesite anywhere in the cemetery, and be memorialized with either a 24-inch wide upright or flush marker, or
- One urn can be placed in a 16½ square foot gravesite in one of the cemetery's two cremation-only sections, where memorials are limited to a 24-inch flush marker.

The phased construction of a third option--a cremation garden plat--was begun in 2013 as part of the cemetery's north end development. The plat will feature:



- Three landscape mounds with shade trees, evergreens and shrub beds,
- A five-foot wide gravel path winding between these mounds,
- A non-traditional, circular grave layout of 100 spaces, each approximately 20 square feet in area, and
- The ability to inter two urns per lot and memorialize the burials with either a 24-inch wide upright or flush marker.

Cemetery Statistics

- | | |
|---------------------------|---------------------------------|
| • Traditional Burial – 34 | • Infant Space Sale – 1 |
| • Cremains Burial – 42 | • Infant Burial – 1 |
| • Columbarium Burial – 4 | • Vault Storage – 0 |
| • Grave Space Sale – 34 | • Foundations – 81 |
| • Cremains Space Sale – 3 | • Perpetual Care Collection – 0 |
| • Columbarium Sale – 4 | |

MOTOR VEHICLE EQUIPMENT DIVISION

During the off season all of the plows come into the service garage. Each plow goes through a complete safety inspection and evaluation, all fluids and filters are replaced and oil samples are taken. They are sent to an independent lab and oil reports are sent back to the City where they are analyzed for premature failure and overall driveline component condition. Any needed repairs and suggestions by operators are made at this time to reduce downtime during the busy winter months. The main goal of the Motor Pool Division is to have its fleet ready for any crisis that may arise with very little or no “downtime.”

One of the major purchases in the fall of 2013 by the Motor Pool Division was a 2013 Sterling Vac-all Truck. This piece of equipment is used for performing maintenance and cleaning on storm and sewer catch basins, and can be used for spring/fall leaf collection.



Motor Pool Equipment Committee

The Motor Pool Equipment Committee reviews the Motor Pool replacement schedule throughout the year. The Committee consists of representatives from the Police, Fire and Public Works Departments. The Committee also includes the Vehicle Maintenance Supervisor and Public Works Superintendent. Most equipment is placed on a 15-year replacement schedule. The Committee will make recommendations based on feedback from various City departments and employees. These recommendations are presented to the City Commission for approval or disapproval. Below is a list of equipment approved for purchase for fiscal year 2013-2014.

New Equipment	Cost
2 Police Patrol Vehicles	\$70,000.00
1 Commercial Riding Lawn Mower	\$12,000.00
1 60-inch Hydraulic Snow Blower Head	\$11,500.00
1 Catch Basin/Leaf Collection Truck	\$172,000.00
1 City Travel Vehicle	\$28,000.00
1 Parks Utility Van	\$24,000.00

Marquette City Online Auction

The City of Marquette Surplus Online Auction generated \$3,360.00 worth of surplus equipment revenue last year (calendar year 2013). Most of these items are purchased by local residents.

Equipment	Revenue
12-inch Black and Decker Radial Saw	\$75.00
Wilton Floor Mount Drill Press	\$100.00
Tennant Ride-on Floor Sweeper	\$510.00
2001 Ford Crown Victoria	\$1,100.00
2002 Ford Taurus	\$800.00
1999 Ford Taurus	\$200.00
1999 Ford Crown Victoria Police Interceptor	\$575.00

Equipment Inventory

- Small Equipment – 169
- Sedan/Pickups – 99
- Large Equipment – 112

Maintenance

- Tune up – 55
- Brakes – 60
- Suspension work – 43
- Drive Train – 10
- Engine work – 6

- Oil changes – 375
- Restoration work (average restoration takes 120 hrs) – 6
- Equipment Painting – 3
- Snow Plow under body changes – 75
- Schedule Maintenance (above and beyond just oil change) – 155
- New Equipment Outfitted – 5

Fuel Usage

- Waste Water Treatment Plant – 1,861 gallons
- Marquette Housing – 948 gallons
- Downtown Development Authority – 2,121 gallons
- Lakeview Arena – 1,187 gallons
- Motor Pool – 111,388 gallons
- Marquette Area Public Schools – 45,133
- Alger-Marquette Community Action Board – 4,073 gallons
- Powell Township – 4,455 gallons
- Peter White Public Library – 32 gallons

FACILITY MAINTENANCE DIVISION

The following list highlights some of the major projects and accomplishments that were either completed in the fiscal year or are near completion.

- New signs were installed at Mattson Park and City Hall
- Garage at Park Cemetery was re-sided



- Replaced sanitary lift station components at the Municipal Service Center
- Renovated offices at the Senior Center
- Cinder Pond Marina demolition and utility relocation
- Replaced air compressor at the Municipal Service Center
- Stained the building/structures at Presque Isle
- Mattson Park painting

PARKS AND RECREATION MAINTENANCE DIVISION

Parks and Recreation Maintenance Statistics

- Playgrounds with woodchip replacement – 5
- Toys that were replaced – 2
- Toys that were repaired – 32
- Playground inspections – 416
- Trash cans maintained – 214
- Dog boxes maintained – 14
- Picnic tables maintained – 147
- Flag pole maintenance occurrences – 28
- Gravel parking lots graded occurrences – 26
- Barrier post replacement – 34
- Lift station pump repairs – 0

WATER FILTRATION PLANT

All water quality standards were met during this past year. The residents of Marquette continue to receive high quality drinking water with little operational issues. The 2013/14 Water Quality Report is posted on the City's website and provides detailed water quality test results.

Water Filtration Plant Highlights:

- One variable frequency drive replaced
- Six outside doors replaced with secured card entry system
- The water intake is currently being evaluated for structural integrity and overall condition. The evaluation used divers who video tape the 3,200 foot intake. The video showed sections of the intake that have been undermined compromising support. An engineer will be retained in 2014 to provide a detailed technical report of solutions to correct the structural integrity of the intake.
- The sodium hydroxide chemical feed system was replaced with new pumps and associated piping.
- 1,252 water bacteriological analyses were performed by Water Plant staff.
- An upgrade for the HVAC system is currently underway.

2000-2014 Beach Monitoring Program

The City of Marquette has been annually awarded Great Lakes Beach Monitoring Grant funds as part of the Environmental Assessment and Coastal Health Act of 2000 (Beach Act). The Environmental Protection Agency (EPA), in partnership with state and local governments, has made available grant funding to monitor the nation's beach water quality. Since the implementation of the Beach Act, the City of Marquette has been annually awarded grant funding for conducting beach monitoring at the City's five designated beaches. \$1,502 was awarded in 2013.

Beach Closures

No beach closures occurred during 2013. Statistical data is available through a link posted on the City's website.

Great Lakes Restoration Initiative – Marquette Beaches (2012-current)

EPA 2012 Great Lakes Restoration Initiative Grant to Make Beaches Safer in Michigan and Wisconsin: In partnership with the Superior Watershed Partnership, the City of Marquette was awarded \$179,700 to lower health risks and to improve water quality at two Lake Superior beaches in Marquette. The City of Marquette, *Making Beaches Safer Project*, will reduce risks to human health and improve water quality at two Lake Superior beaches in the City of Marquette by implementing green management practices to reduce bacteriological, algal and chemical contamination that have been identified through the use of Great Lakes beach sanitary surveys. The project will improve water quality and make beaches safer by creating 0.7 acres of native wetland and riparian buffers to intercept and infiltrate urban storm water before it reaches Lake Superior and two popular public beaches.

Project Update: The Lakeview Arena Storm Drain construction project started October 10, 2014. The project is expected to be completed by December 1, 2014.

WASTEWATER TREATMENT PLANT

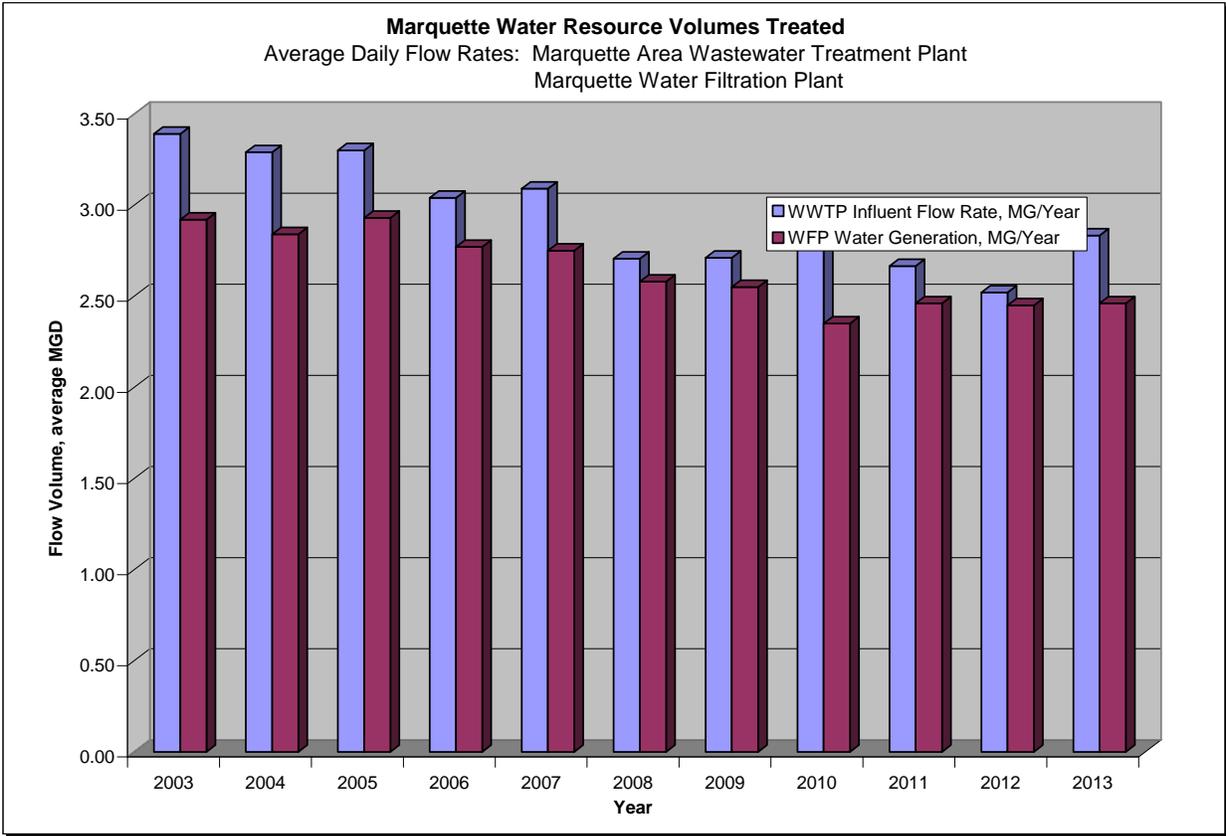
The Marquette Area Wastewater Treatment Plant operates under an Inter-Governmental Agreement with Marquette and Chocolay Townships. The original agreement was signed in 1979. Marquette Area Wastewater Advisory Board meetings are held the third Thursday of the month at the Wastewater Treatment Facility.

The Marquette Wastewater Treatment Facility is regulated by the Michigan Department of Environmental Quality and Environmental Protection Agency under a National Pollution Discharge Elimination System (NPDES) permit. Two violations were reported (July 1, 2014 –Sept 30, 2014). Operational process changes have been made to reduce the vulnerability of future NPDES violations.

The City of Marquette received a new five-year NPDES permit which took effect on September 1, 2014. Notable changes include a limit of silver below 2.2 ug/l and implementing a formal asset management plan.

Wastewater Treatment Plant Highlights:

- \$47,366 was received in revenue from the acceptance of outside trucked industrial waste.
- Wastewater staff is working on a long-term biosolids marketing strategy. With the completion of the 2012 biosolids storage facility, additional disposal options are available. These options include composting, reclamation, agricultural and brownfield remediation.
- The Marquette Wastewater Treatment Plant completed 56 full grease trap inspections in 2013. In addition, 47 reinspections were completed. The Wastewater Department is in the process of working with Marquette and Chocolay Townships in formalizing a joint grease trap program.
- Two 30-year-old below ground Lift Stations were replaced with new above ground stations.
- During the past year, the Wastewater Treatment Plant staff increased its preventative maintenance program to ensure all process equipment is operating at maximum peak efficiency.
- The Water and Wastewater Departments welcomed two new staff members to the team. With the addition of these employees, the department has been able to offer technical resources to other departments.



The above bar chart illustrates treated water and wastewater volumes at the two City treatment facilities.